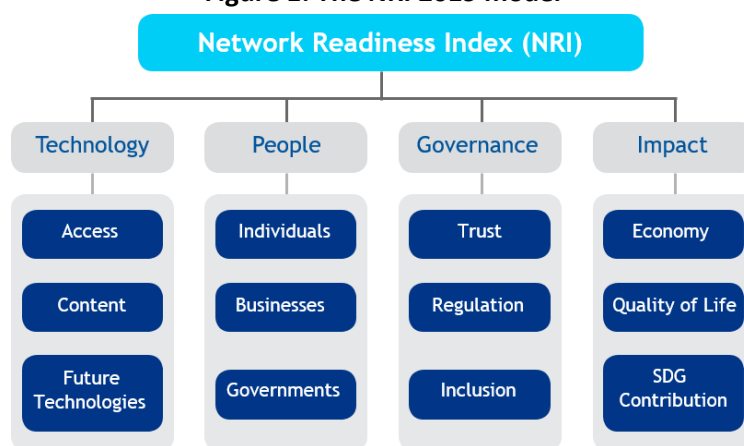


Network Readiness Index 2019

Albania

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

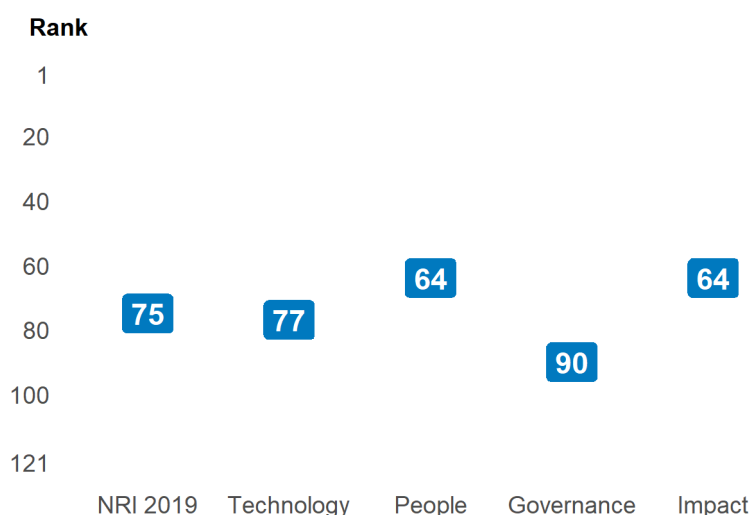
Figure 1: The NRI 2019 model



Global NRI position of Albania

Albania ranks 75th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People and Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Albania global ranking, overall and by pillar



Performance at sub-pillar level

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

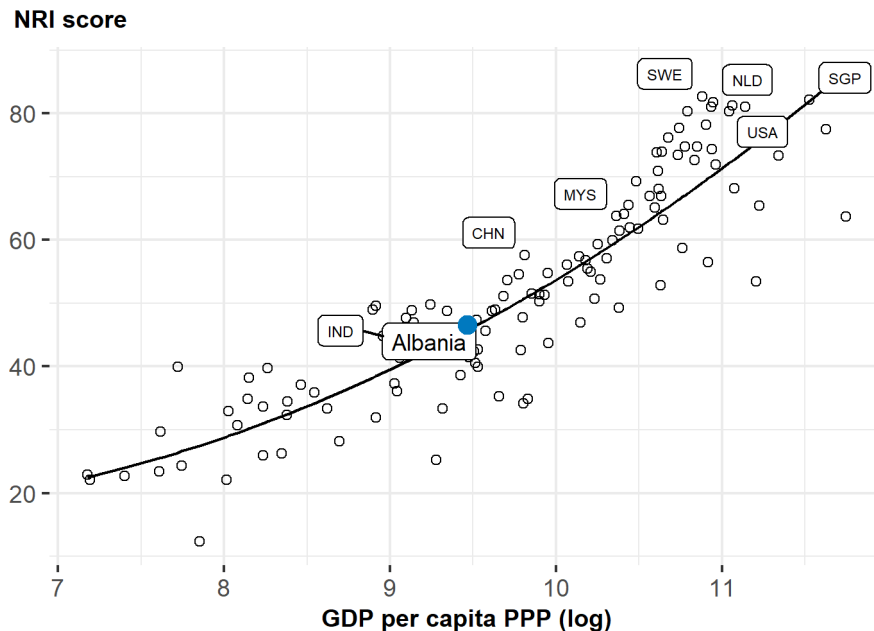
Table 1: Albania rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	47	Content	65
SDG Contribution	51	Governments	83
Businesses	57	Trust	83
Future Technologies	61	Access	84
Individuals	61	Economy	98
Regulation	63	Inclusion	108

NRI score and income

Figure 3 shows the position of Albania 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, Albania 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Albania belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Upper-middle-income countries

Albania is ranked 23rd 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 two of the four pillars: People and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in seven of the twelve sub-pillars: Content, Future Technology, Individuals, Businesses, Regulation, Quality of Life and SDG Contribution.

Europe

Albania is ranked 39th within Europe (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 Albania against its income group and region, overall and by pillar

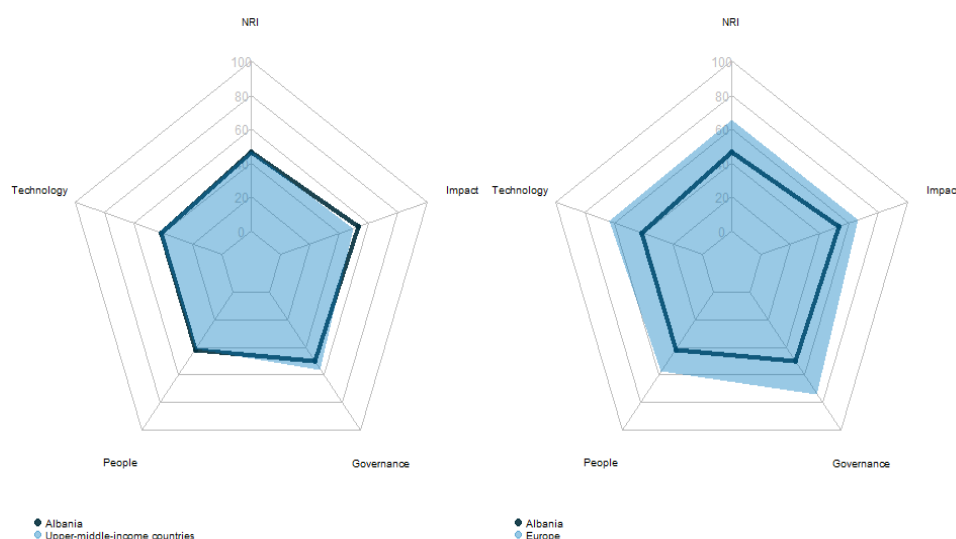


Table 2: Albania scores vs. averages of its income group and region, overall and by pillar

Dimension	Albania	Upper-middle-income countries	Europe
NRI	46.57	47.40	65.20
Technology	41.31	42.66	63.08
People	41.75	41.07	57.50
Governance	50.17	56.24	73.99
Impact	53.07	49.62	66.24

Strongest and weakest indicators

The indicators where Albania performs particularly well include E-commerce legislation, Income inequality, and Government procurement of advanced technology products (Table 3). By contrast, the economy's weakest indicators include High-tech exports, Socioeconomic gap in use of digital payments, and Rural gap in use of digital payments.

Table 3: Top-ranked and bottom-ranked indicators of Albania

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Rule of law	83
Income inequality	16	Technicians and associate professionals	86
Government procurement of advanced technology products	24	Internet access	92
Reading proficiency in schools	28	Happiness	92
Adult literacy rate	30	R&D expenditure by governments and higher education	94
Intellectual property receipts	41	Medium and high-tech industry	106
Healthy life expectancy at birth	42	Company investment in emerging technology	107
Internet access in schools	44	Rural gap in use of digital payments	112
International Internet bandwidth	45	Socioeconomic gap in use of digital payments	113
Publication and use of open data	50	High-tech exports	117

NRI 2019 At-A-Glance: Albania

Network Readiness Index

Rank: 75 (out of 121)

Score: 46.57

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	77	41.31	C. Governance pillar	90	50.17
1st sub-pillar: Access	84	49.50	1st sub-pillar: Trust	83	46.30
2nd sub-pillar: Content	65	43.51	2nd sub-pillar: Regulation	63	64.27
3rd sub-pillar: Future Technologies	61	30.92	3rd sub-pillar: Inclusion	108	39.94
B. People pillar	64	41.75	D. Impact pillar	64	53.07
1st sub-pillar: Individuals	61	55.89	1st sub-pillar: Economy	98	9.15
2nd sub-pillar: Businesses	57	30.50	2nd sub-pillar: Quality of Life	47	67.20
3rd sub-pillar: Governments	83	38.85	3rd sub-pillar: SDG Contribution	51	82.86

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	83	52.38	3.1.1 Rule of law	83	44.39
1.1.2 Handset prices	82	37.43	3.1.2 Software piracy rate	74	20.27
1.1.3 Internet access	92	25.52	3.1.3 Secure Internet servers	65	53.45
1.1.4 4G mobile network coverage	73	85.50	3.1.4 Cybersecurity	64	67.11
1.1.5 Fixed-broadband subscriptions	82	28.65	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	45	70.45	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	44	46.55	3.2.1 Regulatory quality	56	57.62
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	75	66.36
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	55	45.05
1.2.2 Mobile apps development	64	59.96	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	41	0.94	3.2.5 Social safety net protection	79	33.21
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	65	83.40
1.3.1 Availability of latest technologies	82	42.22	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	107	15.27	3.3.1 E-Participation	59	72.61
1.3.3 Government procurement of advanced technology products	24	57.09	3.3.2 Socioeconomic gap in use of digital payments	113	22.80
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	82	40.33
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	112	24.03
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	60	69.05	4.1.1 Medium and high-tech industry	106	8.26
2.1.2 Active mobile-broadband subscriptions	81	23.27	4.1.2 High-tech exports	117	0.09
2.1.3 Use of virtual social networks	69	50.10	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	51	39.87	4.1.4 Labour productivity per employee	72	19.10
2.1.5 Adult literacy rate	30	97.16	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	92	40.56
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	62	68.45
2.2.1 Firms with website	56	53.48	4.2.3 Income inequality	16	89.47
2.2.2 Internet shopping	79	8.51	4.2.4 Healthy life expectancy at birth	42	70.33
2.2.3 Professionals	58	28.26	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	86	20.84	4.3.1 Access to basic services	65	92.59
2.2.5 Extent of staff training	56	41.39	4.3.2 Pollution	54	86.30
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	56	65.94
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	28	86.13
2.3.1 Government online services	57	70.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	50	32.43	4.3.6 Use of clean fuels and technology	79	83.33
2.3.3 ICT use and government efficiency	56	46.09			
2.3.4 R&D expenditure by governments and higher education	94	6.10			

* Confidential data

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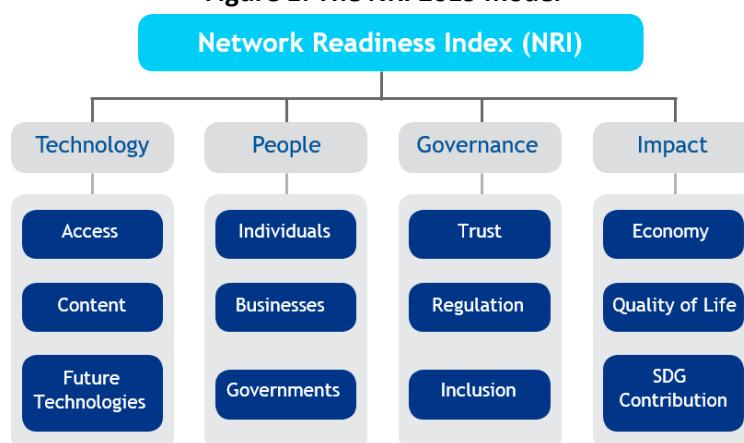
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Network Readiness Index 2019

Algeria

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

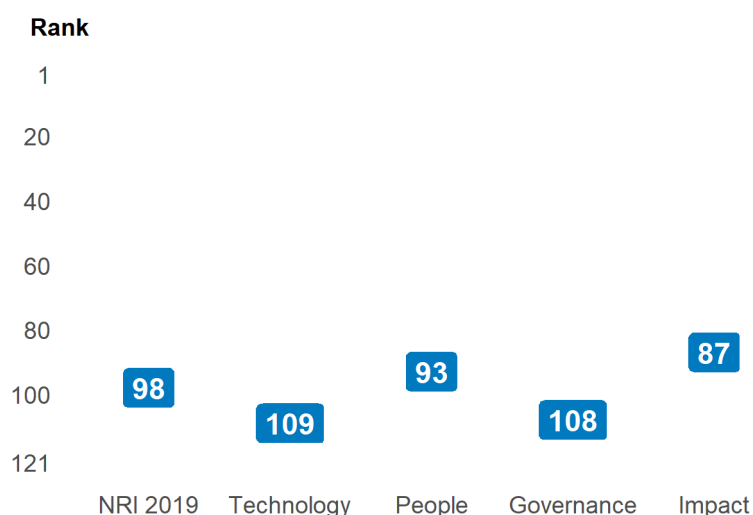
Figure 1: The NRI 2019 model



Global NRI position of Algeria

Algeria ranks 98th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Algeria global ranking, overall and by pillar



Performance at sub-pillar level

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

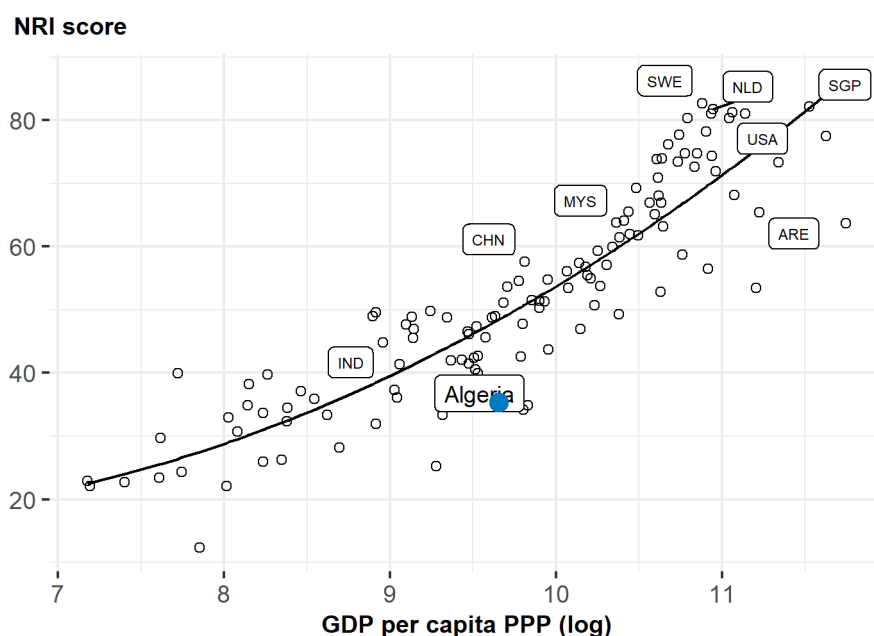
Table 1: Algeria rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	69	Inclusion	102
Individuals	79	Trust	106
Access	91	Content	108
Economy	92	Businesses	108
Quality of Life	94	Future Technologies	110
Governments	97	Regulation	111

NRI score and income

Figure 3 shows the position of Algeria 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, Algeria 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Algeria belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

Upper-middle-income countries

Algeria is ranked 34th in the group of upper-middle-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 upper-middle-income countries in all of them.

Arab States

Algeria is ranked 12th within Arab States (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 Arab States in one of the twelve sub-pillars: SDG Contribution.

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

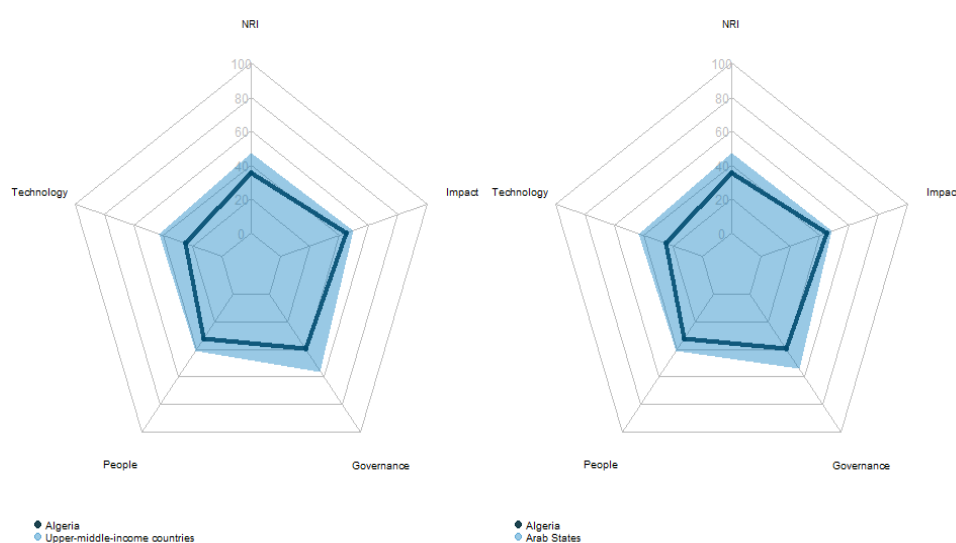


Table 2: Algeria scores vs. averages of its income group and region, overall and by pillar

Dimension	Algeria	Upper-middle-income countries	Arab States
NRI	35.30	47.40	46.82
Technology	24.81	42.66	43.54
People	31.94	41.07	41.30
Governance	39.81	56.24	54.28
Impact	44.63	49.62	48.18

Strongest and weakest indicators

The indicators where Algeria performs particularly well include Use of clean fuels and technology, Rural gap in use of digital payments, and Income inequality (Table 3). By contrast, the economy's weakest indicators include Government online services, Regulatory quality, and Freedom to make life choices.

Table 3: Top-ranked and bottom-ranked indicators of Algeria

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Availability of latest technologies	111
Rural gap in use of digital payments	3	High-tech exports	111
Income inequality	11	4G mobile network coverage	112
Active mobile-broadband subscriptions	34	Ease of doing business	114
Online trust and safety	34	Medium and high-tech industry	114
R&D expenditure by governments and higher education	36	E-Participation	115
Labour productivity per employee	50	Mobile apps development	116
Internet access	54	Government online services	117
Tertiary enrolment	55	Regulatory quality	117
Use of virtual social networks	61	Freedom to make life choices	117

NRI 2019 At-A-Glance: Algeria

Network Readiness Index

Rank: 98 (out of 121)

Score: 35.30

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	109	24.81	C. Governance pillar	108	39.81
1st sub-pillar: Access	91	43.41	1st sub-pillar: Trust	106	35.75
2nd sub-pillar: Content	108	13.29	2nd sub-pillar: Regulation	111	39.58
3rd sub-pillar: Future Technologies	110	17.73	3rd sub-pillar: Inclusion	102	44.11
B. People pillar	93	31.94	D. Impact pillar	87	44.63
1st sub-pillar: Individuals	79	50.84	1st sub-pillar: Economy	92	9.80
2nd sub-pillar: Businesses	108	14.60	2nd sub-pillar: Quality of Life	94	52.00
3rd sub-pillar: Governments	97	30.39	3rd sub-pillar: SDG Contribution	69	72.10

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	105	35.94	3.1.1 Rule of law	104	35.65
1.1.2 Handset prices	95	32.17	3.1.2 Software piracy rate	91	9.46
1.1.3 Internet access	54	72.67	3.1.3 Secure Internet servers	103	35.89
1.1.4 4G mobile network coverage	112	30.64	3.1.4 Cybersecurity	102	26.64
1.1.5 Fixed-broadband subscriptions	83	28.20	3.1.5 Online trust and safety	34	71.08
1.1.6 International Internet bandwidth	100	60.87	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	117	23.58
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	114	32.48
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	90	32.07
1.2.2 Mobile apps development	116	17.30	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	97	0.01	3.2.5 Social safety net protection	68	40.86
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	109	58.50
1.3.1 Availability of latest technologies	111	27.35	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	81	28.33	3.3.1 E-Participation	115	9.55
1.3.3 Government procurement of advanced technology products	81	32.97	3.3.2 Socioeconomic gap in use of digital payments	74	60.38
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	84	39.43
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	83	21.20
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	3	89.99
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	79	55.40	4.1.1 Medium and high-tech industry	114	3.12
2.1.2 Active mobile-broadband subscriptions	34	37.15	4.1.2 High-tech exports	111	1.13
2.1.3 Use of virtual social networks	61	53.22	4.1.3 PCT patent applications	79	0.06
2.1.4 Tertiary enrolment	55	37.22	4.1.4 Labour productivity per employee	50	34.90
2.1.5 Adult literacy rate	74	71.21	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	90	41.36
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	117	12.68
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	11	93.16
2.2.2 Internet shopping	101	3.56	4.2.4 Healthy life expectancy at birth	74	60.81
2.2.3 Professionals	67	24.53	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	88	20.05	4.3.1 Access to basic services	80	87.56
2.2.5 Extent of staff training	108	23.94	4.3.2 Pollution	98	66.78
2.2.6 R&D expenditure by businesses	74	0.90	4.3.3 Road safety	98	34.06
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	117	13.08	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	90	33.27			
2.3.4 R&D expenditure by governments and higher education	36	44.83			

* Confidential data

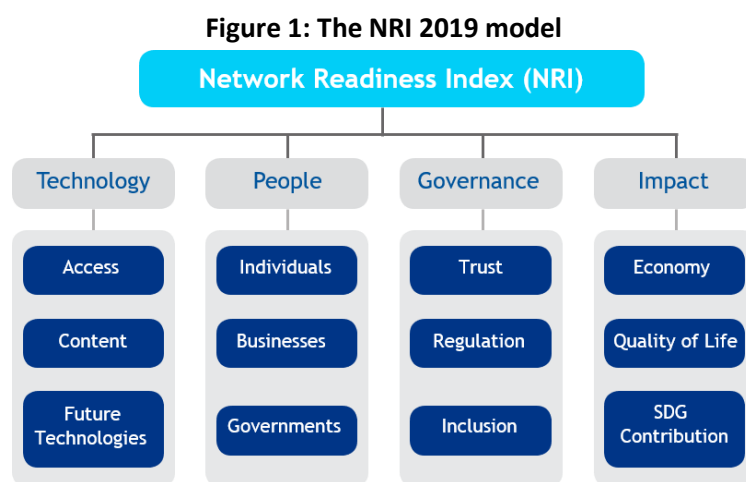
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Network Readiness Index 2019

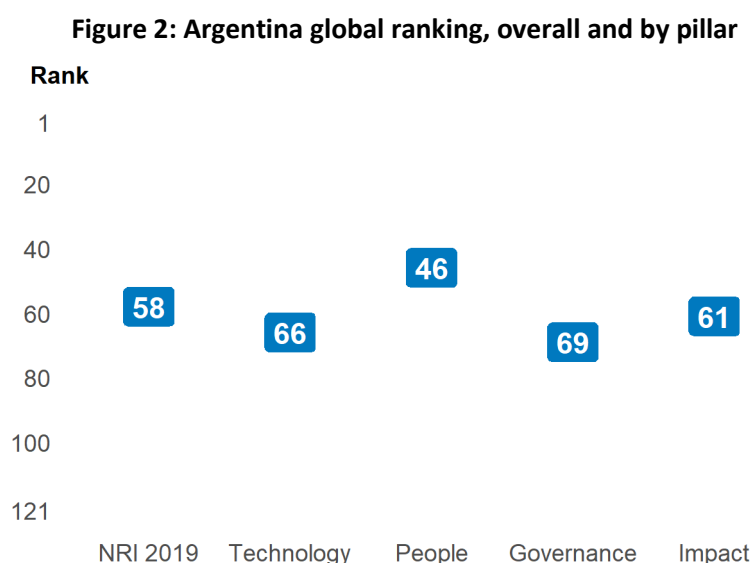
Argentina

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Argentina

Argentina ranks 58th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

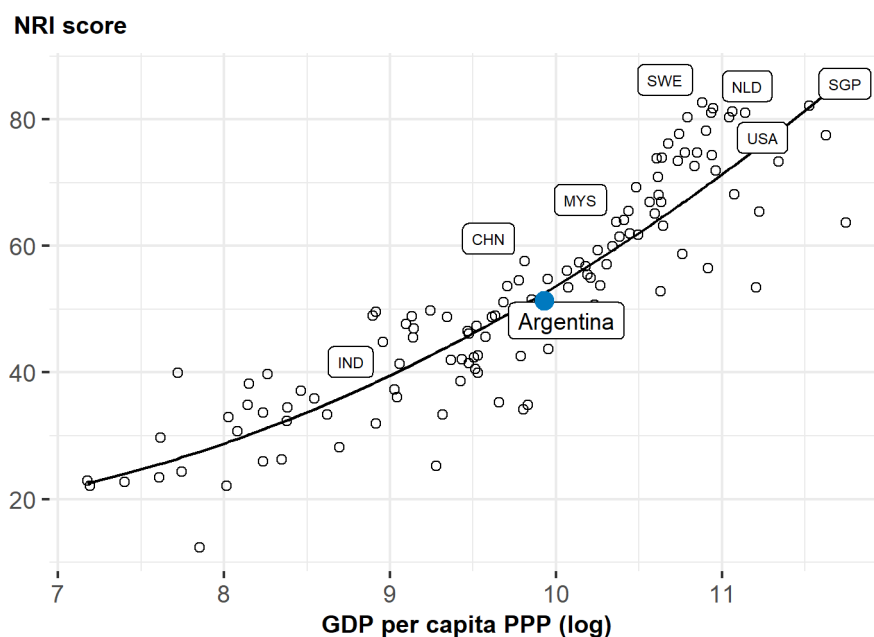
Table 1: Argentina rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	18	Inclusion	64
Content	45	Access	71
Quality of Life	53	Regulation	71
Businesses	56	Trust	72
Governments	58	Economy	72
SDG Contribution	58	Future Technologies	103

NRI score and income

Figure 3 shows the position of Argentina 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, Argentina 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Argentina belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Argentina is ranked 12th 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 ten of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

The Americas

Argentina is ranked 7th within The Americas (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in The Americas in nine of the twelve sub-pillars: Access, Content, Individuals, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

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

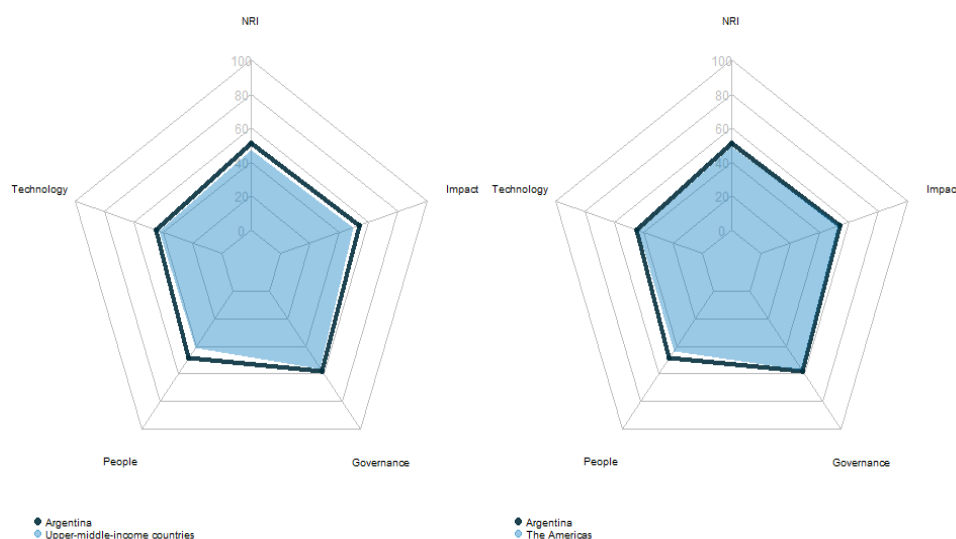


Table 2: Argentina scores vs. averages of its income group and region, overall and by pillar

Dimension	Argentina	Upper-middle-income countries	The Americas
NRI	51.27	47.40	49.08
Technology	44.39	42.66	43.12
People	48.72	41.07	43.32
Governance	58.21	56.24	57.13
Impact	53.78	49.62	52.73

Strongest and weakest indicators

The indicators where Argentina performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Tertiary enrolment (Table 3). By contrast, the economy's weakest indicators include Ease of doing business, Availability of latest technologies, and Cybersecurity.

Table 3: Top-ranked and bottom-ranked indicators of Argentina

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	International Internet bandwidth	76
Use of clean fuels and technology	1	Income inequality	78
Tertiary enrolment	4	Extent of staff training	79
Use of virtual social networks	14	Company investment in emerging technology	80
Adult literacy rate	18	E-Participation	83
Pollution	26	Regulatory quality	88
Intellectual property receipts	30	Government procurement of advanced technology products	90
Maths proficiency in schools	32	Cybersecurity	91
Online trust and safety	34	Availability of latest technologies	92
Gender gap in internet use	36	Ease of doing business	102

NRI 2019 At-A-Glance: Argentina

Network Readiness Index

Rank: 58 (out of 121)

Score: 51.27

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	66	44.39	C. Governance pillar	69	58.21
1st sub-pillar: Access	71	60.60	1st sub-pillar: Trust	72	51.10
2nd sub-pillar: Content	45	52.57	2nd sub-pillar: Regulation	71	61.66
3rd sub-pillar: Future Technologies	103	19.98	3rd sub-pillar: Inclusion	64	61.85
B. People pillar	46	48.72	D. Impact pillar	61	53.78
1st sub-pillar: Individuals	18	68.52	1st sub-pillar: Economy	72	17.11
2nd sub-pillar: Businesses	56	30.72	2nd sub-pillar: Quality of Life	53	64.81
3rd sub-pillar: Governments	58	46.92	3rd sub-pillar: SDG Contribution	58	79.43

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	69	60.86	3.1.1 Rule of law	73	47.86
1.1.2 Handset prices	67	44.12	3.1.2 Software piracy rate	68	29.73
1.1.3 Internet access	53	74.33	3.1.3 Secure Internet servers	55	64.29
1.1.4 4G mobile network coverage	74	85.00	3.1.4 Cybersecurity	91	42.54
1.1.5 Fixed-broadband subscriptions	66	53.45	3.1.5 Online trust and safety	34	71.08
1.1.6 International Internet bandwidth	76	66.71	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	47	39.74	3.2.1 Regulatory quality	88	46.06
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	102	50.82
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	70	40.68
1.2.2 Mobile apps development	55	64.42	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	30	1.73	3.2.5 Social safety net protection	58	45.54
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	50	86.88
1.3.1 Availability of latest technologies	92	37.86	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	80	29.12	3.3.1 E-Participation	83	57.32
1.3.3 Government procurement of advanced technology products	90	28.40	3.3.2 Socioeconomic gap in use of digital payments	69	62.32
1.3.4 ICT PCT patent applications	72	1.16	3.3.3 Availability of local online content	53	58.41
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	36	62.78
1.3.6 Robot density	41	5.17	3.3.5 Rural gap in use of digital payments	60	68.43
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	54	71.78	4.1.1 Medium and high-tech industry	58	33.06
2.1.2 Active mobile-broadband subscriptions	58	30.59	4.1.2 High-tech exports	73	10.10
2.1.3 Use of virtual social networks	14	76.09	4.1.3 PCT patent applications	62	0.47
2.1.4 Tertiary enrolment	4	65.65	4.1.4 Labour productivity per employee	61	24.82
2.1.5 Adult literacy rate	18	98.50	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	63	56.98
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	53	73.48
2.2.1 Firms with website	37	65.81	4.2.3 Income inequality	78	57.37
2.2.2 Internet shopping	61	18.52	4.2.4 Healthy life expectancy at birth	39	71.43
2.2.3 Professionals	66	24.76	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	56	39.26	4.3.1 Access to basic services	52	95.61
2.2.5 Extent of staff training	79	32.76	4.3.2 Pollution	26	93.12
2.2.6 R&D expenditure by businesses	58	3.23	4.3.3 Road safety	60	64.69
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	48	61.71
2.3.1 Government online services	56	72.31	4.3.5 Maths proficiency in schools	32	61.46
2.3.2 Publication and use of open data	39	37.51	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	66	41.97			
2.3.4 R&D expenditure by governments and higher education	45	35.89			

* Confidential data

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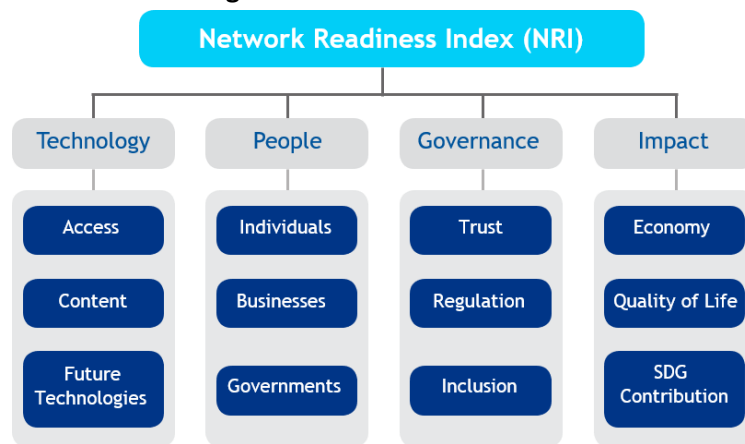
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Network Readiness Index 2019

Armenia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

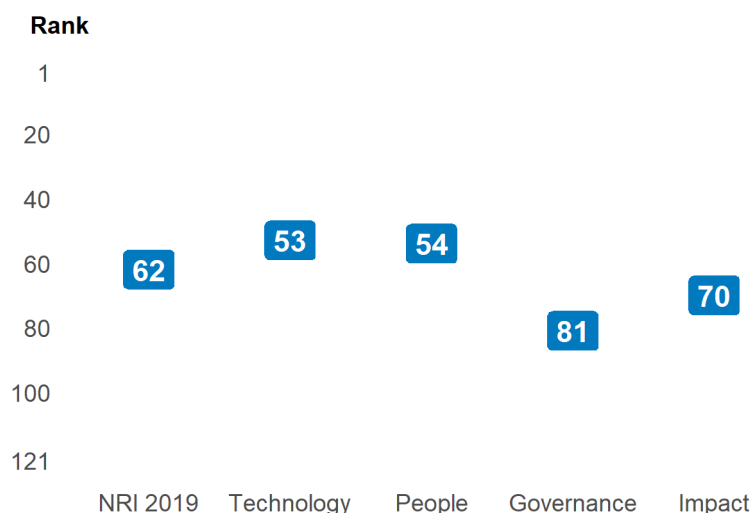
Figure 1: The NRI 2019 model



Global NRI position of Armenia

Armenia ranks 62nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Armenia global ranking, overall and by pillar



Performance at sub-pillar level

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

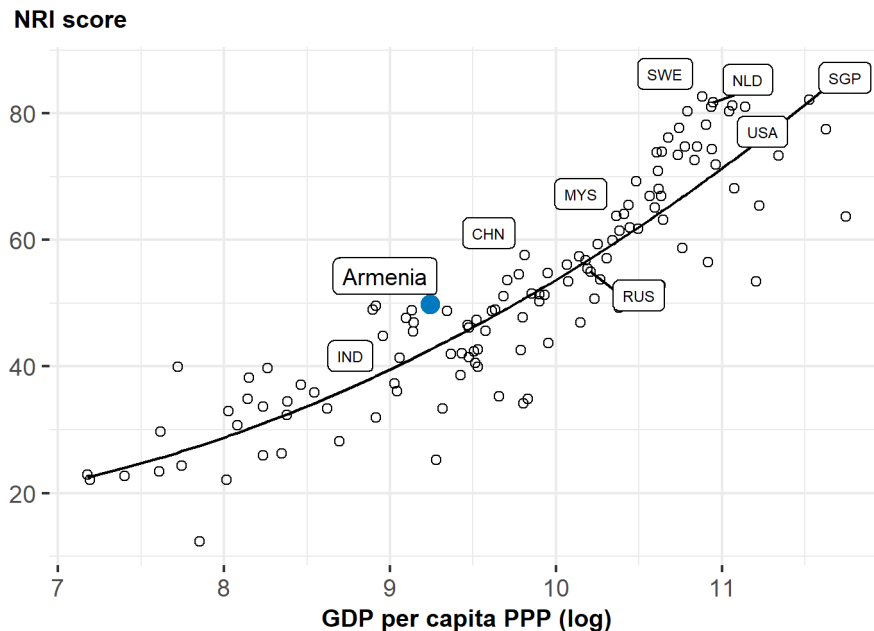
Table 1: Armenia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	41	Individuals	64
Businesses	44	Governments	66
SDG Contribution	56	Inclusion	78
Quality of Life	61	Future Technologies	79
Access	62	Economy	97
Regulation	62	Trust	99

NRI score and income

Figure 3 shows the position of Armenia 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, Armenia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Armenia belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—CIS—is Russia (RUS).

Performance against its income group and region

Upper-middle-income countries

Armenia is ranked 16th 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 three of the four pillars: Score, Technology, People and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in nine of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Regulation, Quality of Life and SDG Contribution.

CIS

Armenia is ranked 4th within CIS (Figure 4, right panel). It has a score above the regional average in two of the four pillars: Score, Technology and People. With regard to sub-pillars, it outperforms the average in CIS in seven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments and Regulation.

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

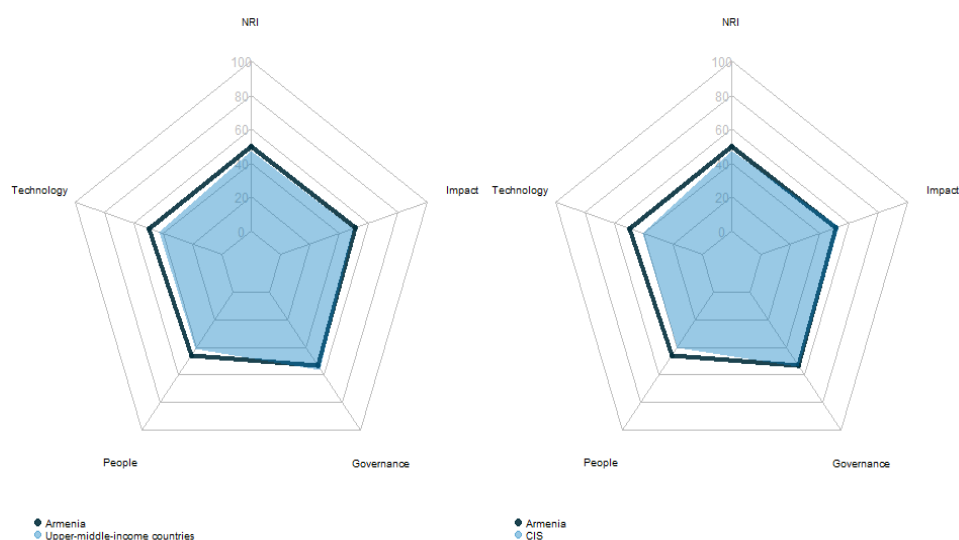


Table 2: Armenia scores vs. averages of its income group and region, overall and by pillar

Dimension	Armenia	Upper-middle-income countries	CIS
NRI	49.84	47.40	46.89
Technology	49.73	42.66	40.39
People	45.75	41.07	40.30
Governance	53.29	56.24	53.69
Impact	50.58	49.62	53.16

Strongest and weakest indicators

The indicators where Armenia performs particularly well include Internet access in schools, Use of clean fuels and technology, and Adult literacy rate (Table 3). By contrast, the economy's weakest indicators include Medium and high-tech industry, Intellectual property receipts, and Software piracy rate.

Table 3: Top-ranked and bottom-ranked indicators of Armenia

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Social safety net protection	84
Use of clean fuels and technology	1	Extent of staff training	88
Adult literacy rate	9	Happiness	89
Firms with website	26	Pollution	90
ICT use and government efficiency	32	Socioeconomic gap in use of digital payments	92
International Internet bandwidth	33	Government online services	93
Legal framework's adaptability to digital business models	33	E-Participation	93
Digital participation and content creation	39	Intellectual property receipts	98
Income inequality	40	Software piracy rate	98
Professionals	45	Medium and high-tech industry	111

NRI 2019 At-A-Glance: Armenia

Network Readiness Index

Rank: 62 (out of 121)

Score: 49.84

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	53	49.73	C. Governance pillar	81	53.29
1st sub-pillar: Access	62	67.24	1st sub-pillar: Trust	99	39.28
2nd sub-pillar: Content	41	54.65	2nd sub-pillar: Regulation	62	64.40
3rd sub-pillar: Future Technologies	79	27.29	3rd sub-pillar: Inclusion	78	56.19
B. People pillar	54	45.75	D. Impact pillar	70	50.58
1st sub-pillar: Individuals	64	55.20	1st sub-pillar: Economy	97	9.18
2nd sub-pillar: Businesses	44	38.05	2nd sub-pillar: Quality of Life	61	61.87
3rd sub-pillar: Governments	66	44.00	3rd sub-pillar: SDG Contribution	56	80.70

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	80	55.81	3.1.1 Rule of law	68	49.91
1.1.2 Handset prices	74	41.74	3.1.2 Software piracy rate	98	5.41
1.1.3 Internet access	69	62.34	3.1.3 Secure Internet servers	73	49.60
1.1.4 4G mobile network coverage	65	90.05	3.1.4 Cybersecurity	79	52.19
1.1.5 Fixed-broadband subscriptions	72	47.98	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	33	72.74	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	58	57.34
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	46	78.29
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	33	57.73
1.2.2 Mobile apps development	53	65.74	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	98	0.00	3.2.5 Social safety net protection	84	31.72
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	56	86.30
1.3.1 Availability of latest technologies	73	46.68	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	52	41.71	3.3.1 E-Participation	93	50.95
1.3.3 Government procurement of advanced technology products	69	37.96	3.3.2 Socioeconomic gap in use of digital payments	92	46.09
1.3.4 ICT PCT patent applications	74	1.02	3.3.3 Availability of local online content	56	56.20
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	53	59.10
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	59	68.63
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	74	61.15	4.1.1 Medium and high-tech industry	111	5.46
2.1.2 Active mobile-broadband subscriptions	66	28.63	4.1.2 High-tech exports	63	13.36
2.1.3 Use of virtual social networks	78	46.99	4.1.3 PCT patent applications	51	0.99
2.1.4 Tertiary enrolment	52	39.58	4.1.4 Labour productivity per employee	75	16.89
2.1.5 Adult literacy rate	9	99.63	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	89	41.76
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	70	64.62
2.2.1 Firms with website	26	73.99	4.2.3 Income inequality	40	77.37
2.2.2 Internet shopping	71	10.88	4.2.4 Healthy life expectancy at birth	62	63.74
2.2.3 Professionals	45	36.86	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	57	37.95	4.3.1 Access to basic services	50	95.75
2.2.5 Extent of staff training	88	30.59	4.3.2 Pollution	90	72.06
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	75	55.00
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	93	51.54	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	32	60.67			
2.3.4 R&D expenditure by governments and higher education	69	19.77			

* Confidential data

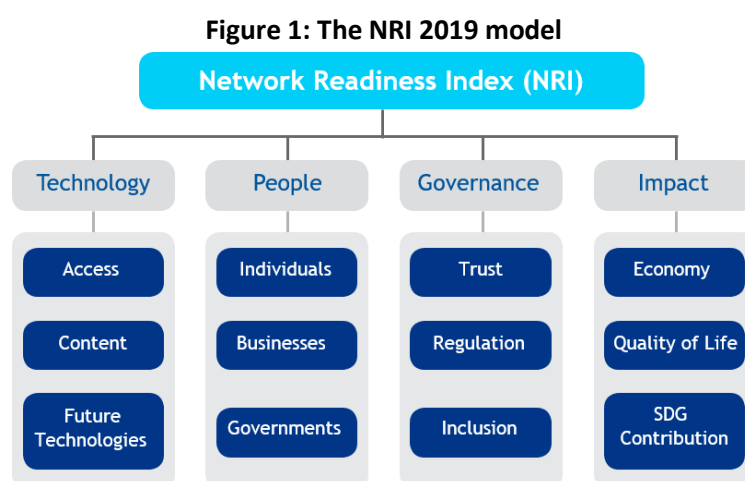
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Network Readiness Index 2019

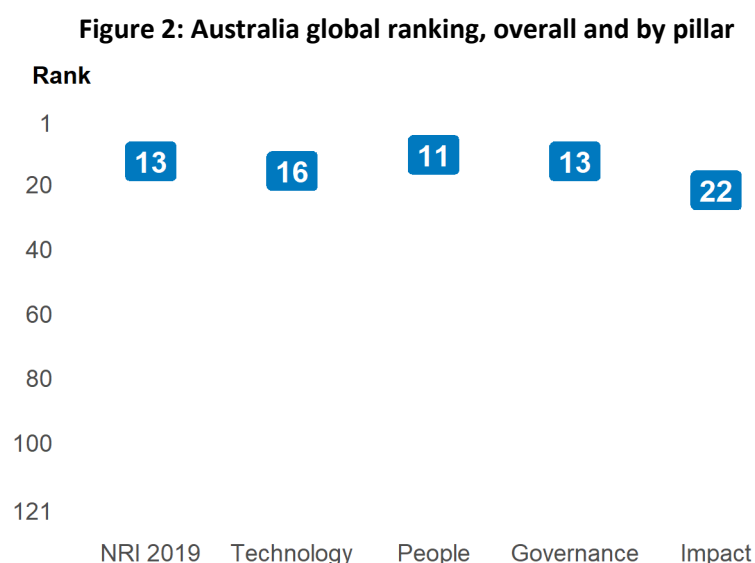
Australia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Australia

Australia ranks 13th out of the 121 economies included in the NRI 2019 (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 Australia relate to Individuals, Access and Trust, among others (Table 1). More could be done, though, to improve the economy's performances in the SDG Contribution, Economy and Future Technologies sub-pillars.

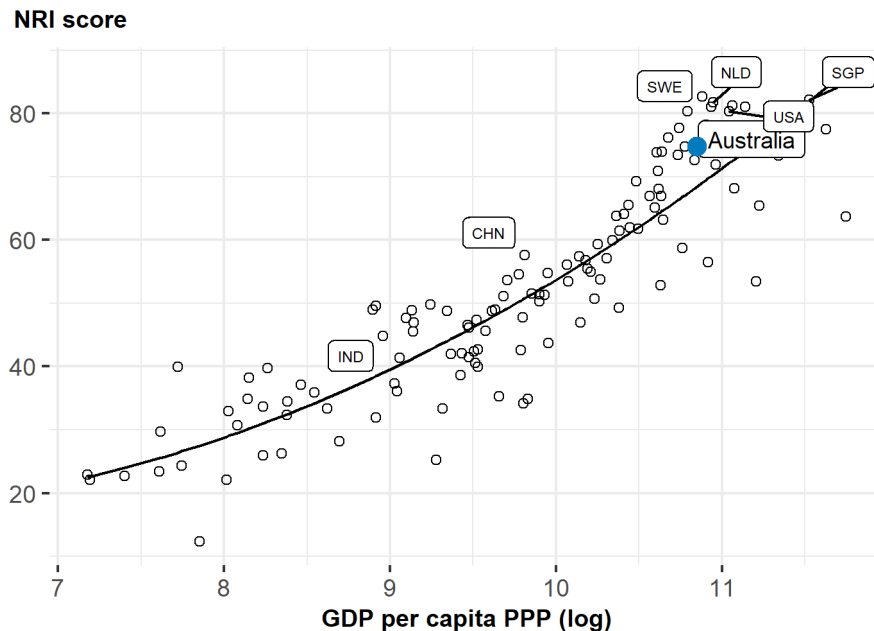
Table 1: Australia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	6	Quality of Life	14
Access	8	Inclusion	16
Trust	9	Businesses	19
Content	11	SDG Contribution	26
Governments	12	Economy	28
Regulation	12	Future Technologies	30

NRI score and income

Figure 3 shows the position of Australia 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, Australia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Australia belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

High-income countries

Australia is ranked 13th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in ten of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

Asia & Pacific

Australia is ranked 3rd within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

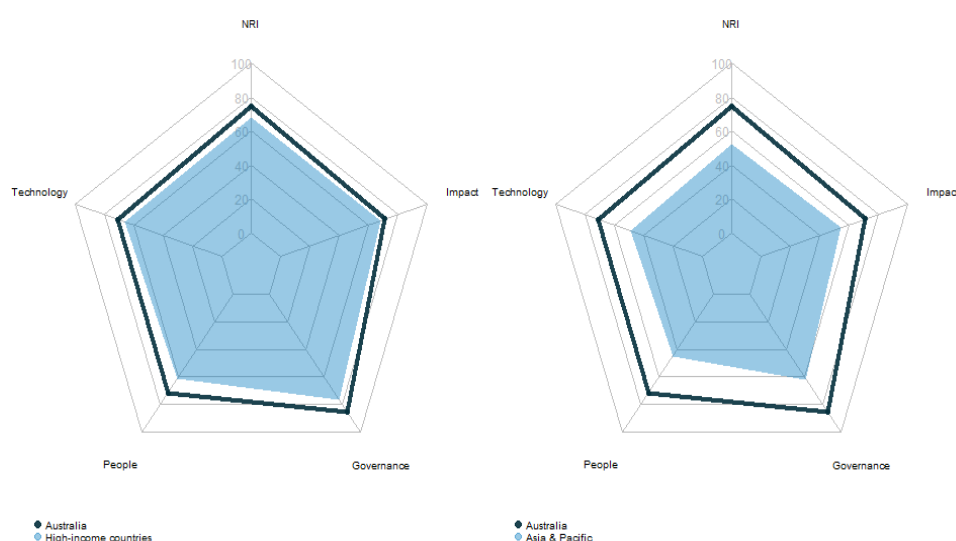


Table 2: Australia scores vs. averages of its income group and region, overall and by pillar

Dimension	Australia	High-income countries	Asia & Pacific
NRI	74.80	68.12	52.44
Technology	70.70	66.07	48.56
People	71.66	61.07	44.85
Governance	85.68	77.07	61.84
Impact	71.17	68.29	54.50

Strongest and weakest indicators

The indicators where Australia performs particularly well include Internet access in schools, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Government procurement of advanced technology products, Rural gap in use of digital payments, International Internet bandwidth, and Medium and high-tech industry.

Table 3: Top-ranked and bottom-ranked indicators of Australia

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Computer software spending	30
E-commerce legislation	1	Technicians and associate professionals	31
Use of clean fuels and technology	1	Internet access	32
Handset prices	2	ICT use and government efficiency	35
Tertiary enrolment	2	Online trust and safety	53
Digital participation and content creation	5	Income inequality	53
Software piracy rate	5	International Internet bandwidth	55
Regulatory quality	5	Medium and high-tech industry	55
E-Participation	5	Government procurement of advanced technology products	63
Publication and use of open data	6	Rural gap in use of digital payments	63

NRI 2019 At-A-Glance: Australia

Network Readiness Index

Rank: 13 (out of 121)

Score: 74.80

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	16	70.70	C. Governance pillar	13	85.68
1st sub-pillar: Access	8	88.71	1st sub-pillar: Trust	9	86.80
2nd sub-pillar: Content	11	76.48	2nd sub-pillar: Regulation	12	88.69
3rd sub-pillar: Future Technologies	30	46.92	3rd sub-pillar: Inclusion	16	81.56
B. People pillar	11	71.66	D. Impact pillar	22	71.17
1st sub-pillar: Individuals	6	73.43	1st sub-pillar: Economy	28	37.07
2nd sub-pillar: Businesses	19	62.92	2nd sub-pillar: Quality of Life	14	83.85
3rd sub-pillar: Governments	12	78.62	3rd sub-pillar: SDG Contribution	26	92.60

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	25	80.25	3.1.1 Rule of law	14	92.45
1.1.2 Handset prices	2	94.04	3.1.2 Software piracy rate	5	95.95
1.1.3 Internet access	32	85.19	3.1.3 Secure Internet servers	15	88.74
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	11	95.50
1.1.5 Fixed-broadband subscriptions	28	92.80	3.1.5 Online trust and safety	53	61.34
1.1.6 International Internet bandwidth	55	69.67	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	5	93.91
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	14	90.18
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	25	64.14
1.2.2 Mobile apps development	16	86.15	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	29	1.81	3.2.5 Social safety net protection	12	87.17
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	8	96.72
1.3.1 Availability of latest technologies	27	76.11	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	24	62.87	3.3.1 E-Participation	5	98.08
1.3.3 Government procurement of advanced technology products	63	40.36	3.3.2 Socioeconomic gap in use of digital payments	10	96.86
1.3.4 ICT PCT patent applications	21	52.99	3.3.3 Availability of local online content	23	81.16
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	29	64.91
1.3.6 Robot density	24	21.92	3.3.5 Rural gap in use of digital payments	63	66.79
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	25	85.41	4.1.1 Medium and high-tech industry	55	34.38
2.1.2 Active mobile-broadband subscriptions	9	53.66	4.1.2 High-tech exports	27	31.66
2.1.3 Use of virtual social networks	18	71.93	4.1.3 PCT patent applications	22	22.23
2.1.4 Tertiary enrolment	2	82.72	4.1.4 Labour productivity per employee	16	60.01
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	12	85.81
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	21	89.72
2.2.1 Firms with website	24	76.29	4.2.3 Income inequality	53	71.58
2.2.2 Internet shopping	10	86.81	4.2.4 Healthy life expectancy at birth	9	88.28
2.2.3 Professionals	17	57.45	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	31	56.44	4.3.1 Access to basic services	8	99.97
2.2.5 Extent of staff training	14	74.48	4.3.2 Pollution	8	98.36
2.2.6 R&D expenditure by businesses	21	26.08	4.3.3 Road safety	17	90.94
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	18	95.20
2.3.1 Government online services	7	96.92	4.3.5 Maths proficiency in schools	22	71.13
2.3.2 Publication and use of open data	6	81.15	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	35	58.60			
2.3.4 R&D expenditure by governments and higher education	10	77.80			

* Confidential data

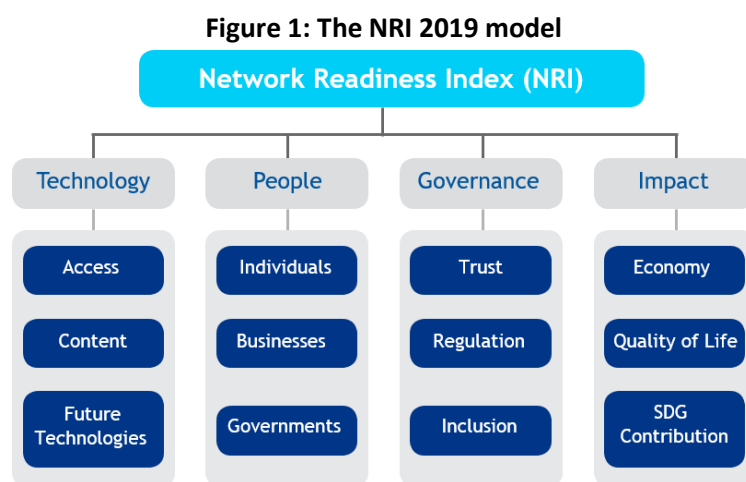
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Network Readiness Index 2019

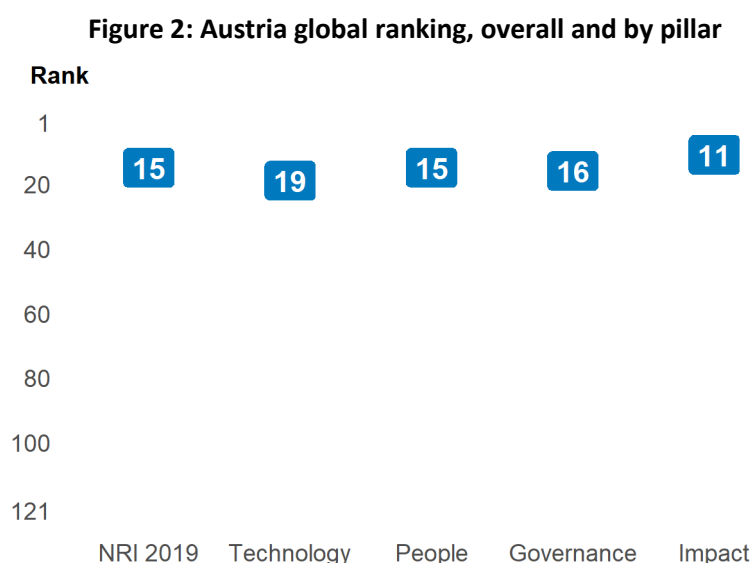
Austria

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Austria

Austria ranks 15th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

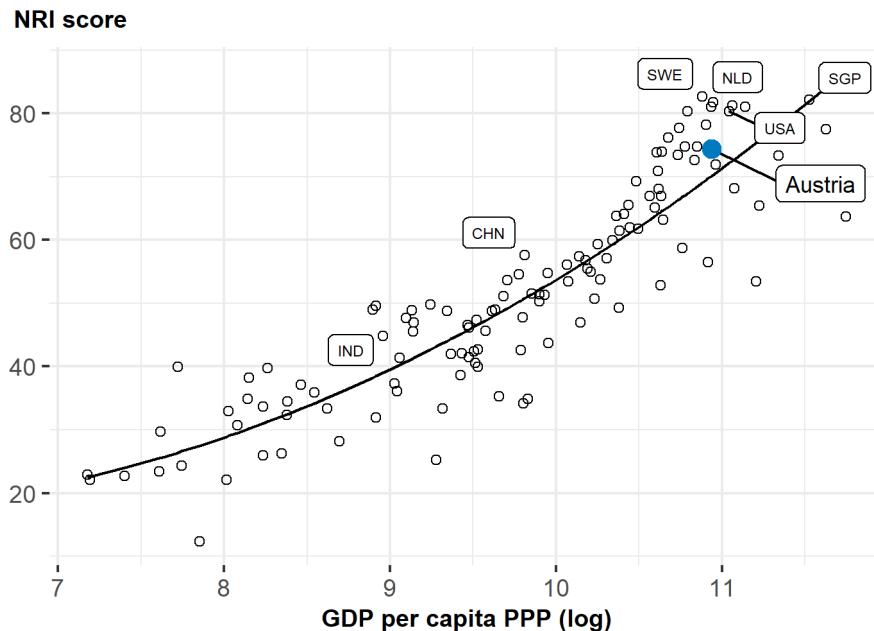
Table 1: Austria rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	9	Trust	18
SDG Contribution	10	Content	19
Businesses	14	Future Technologies	19
Regulation	14	Inclusion	21
Governments	16	Access	36
Economy	17	Individuals	36

NRI score and income

Figure 3 shows the position of Austria 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, Austria 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Austria belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Austria is ranked 15th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in ten of the twelve sub-pillars: Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Austria is ranked 10th within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

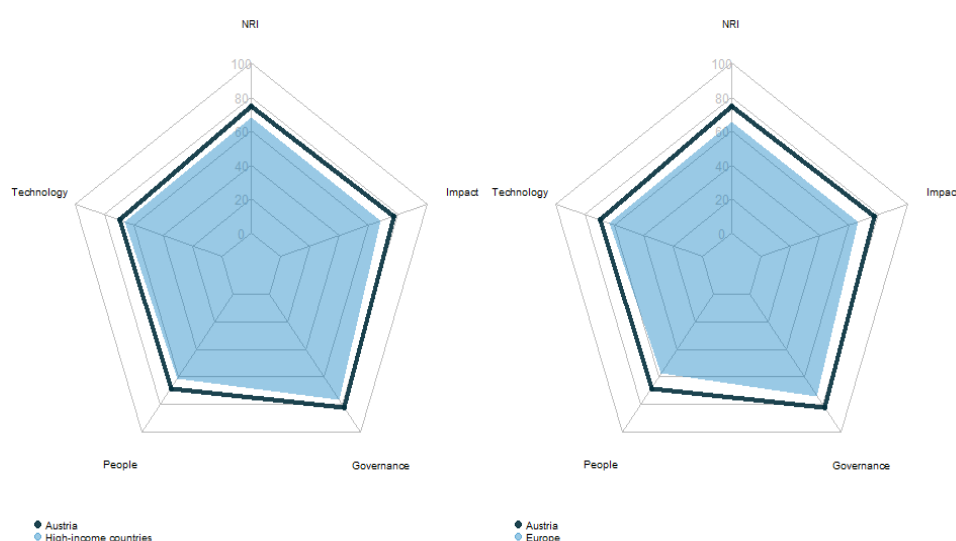


Table 2: Austria scores vs. averages of its income group and region, overall and by pillar

Dimension	Austria	High-income countries	Europe
NRI	74.36	68.12	65.20
Technology	69.59	66.07	63.08
People	68.36	61.07	57.50
Governance	82.57	77.07	73.99
Impact	76.91	68.29	66.24

Strongest and weakest indicators

The indicators where Austria performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Mobile apps development (Table 3). By contrast, the economy's weakest indicators include Use of virtual social networks, Online trust and safety, and International Internet bandwidth.

Table 3: Top-ranked and bottom-ranked indicators of Austria

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	4G mobile network coverage	38
Use of clean fuels and technology	1	High-tech exports	39
Mobile apps development	2	E-Participation	45
Social safety net protection	4	Active mobile-broadband subscriptions	47
R&D expenditure by businesses	6	Gender gap in internet use	57
Rule of law	6	Fixed-broadband subscriptions	59
Software piracy rate	6	Government procurement of advanced technology products	60
Firms with website	7	International Internet bandwidth	65
R&D expenditure by governments and higher education	7	Online trust and safety	68
Happiness	7	Use of virtual social networks	74

NRI 2019 At-A-Glance: Austria

Network Readiness Index

Rank: 15 (out of 121)

Score: 74.36

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	19	69.59	C. Governance pillar	16	82.57
1st sub-pillar: Access	36	79.53	1st sub-pillar: Trust	18	81.96
2nd sub-pillar: Content	19	71.26	2nd sub-pillar: Regulation	14	87.01
3rd sub-pillar: Future Technologies	19	57.97	3rd sub-pillar: Inclusion	21	78.74
B. People pillar	15	68.36	D. Impact pillar	11	76.91
1st sub-pillar: Individuals	36	62.17	1st sub-pillar: Economy	17	47.33
2nd sub-pillar: Businesses	14	67.30	2nd sub-pillar: Quality of Life	9	87.23
3rd sub-pillar: Governments	16	75.61	3rd sub-pillar: SDG Contribution	10	96.15

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	16	84.44	3.1.1 Rule of law	6	96.11
1.1.2 Handset prices	19	69.12	3.1.2 Software piracy rate	6	94.59
1.1.3 Internet access	21	88.04	3.1.3 Secure Internet servers	26	82.95
1.1.4 4G mobile network coverage	38	98.00	3.1.4 Cybersecurity	30	88.49
1.1.5 Fixed-broadband subscriptions	59	69.51	3.1.5 Online trust and safety	68	47.64
1.1.6 International Internet bandwidth	65	68.06	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	18	85.44
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	26	85.81
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	30	60.83
1.2.2 Mobile apps development	2	96.93	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	26	3.29	3.2.5 Social safety net protection	4	99.05
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	31	90.93
1.3.1 Availability of latest technologies	21	82.24	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	26	61.41	3.3.1 E-Participation	45	80.25
1.3.3 Government procurement of advanced technology products	60	41.71	3.3.2 Socioeconomic gap in use of digital payments	19	95.06
1.3.4 ICT PCT patent applications	18	56.16	3.3.3 Availability of local online content	24	80.12
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	57	58.76
1.3.6 Robot density	12	51.73	3.3.5 Rural gap in use of digital payments	9	79.51
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	23	86.71	4.1.1 Medium and high-tech industry	17	58.29
2.1.2 Active mobile-broadband subscriptions	47	33.58	4.1.2 High-tech exports	39	22.05
2.1.3 Use of virtual social networks	74	49.06	4.1.3 PCT patent applications	10	49.55
2.1.4 Tertiary enrolment	11	62.04	4.1.4 Labour productivity per employee	17	59.42
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	13	79.48	4.2.1 Happiness	7	90.37
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	27	86.96
2.2.1 Firms with website	7	89.99	4.2.3 Income inequality	20	85.53
2.2.2 Internet shopping	29	56.59	4.2.4 Healthy life expectancy at birth	16	86.08
2.2.3 Professionals	22	51.62	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	15	75.32	4.3.1 Access to basic services	7	99.98
2.2.5 Extent of staff training	16	74.00	4.3.2 Pollution	28	92.44
2.2.6 R&D expenditure by businesses	6	56.30	4.3.3 Road safety	15	92.19
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	32	85.39	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	14	70.22	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	30	62.26			
2.3.4 R&D expenditure by governments and higher education	7	84.55			

* Confidential data

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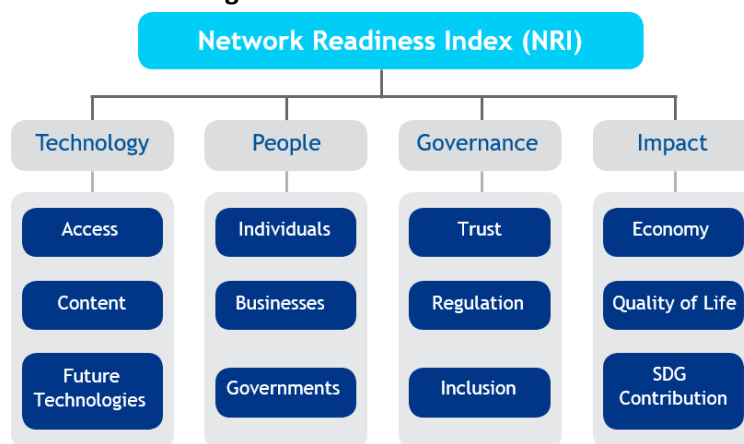
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Network Readiness Index 2019

Azerbaijan

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

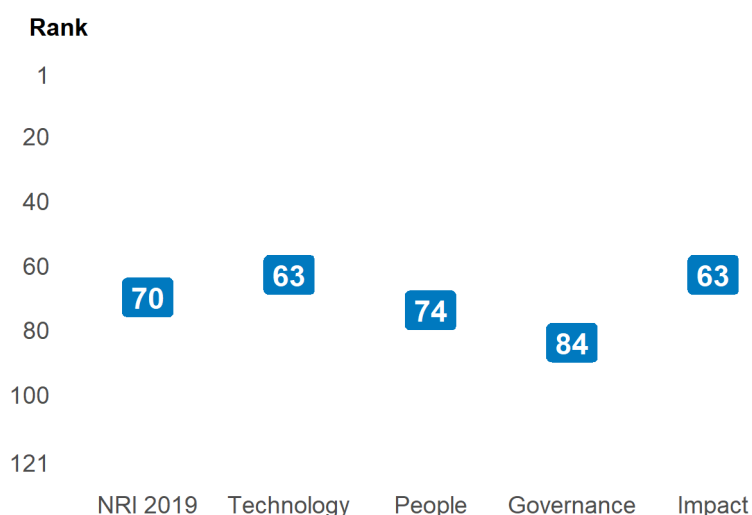
Figure 1: The NRI 2019 model



Global NRI position of Azerbaijan

Azerbaijan ranks 70th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology and Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Azerbaijan global ranking, overall and by pillar



Performance at sub-pillar level

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

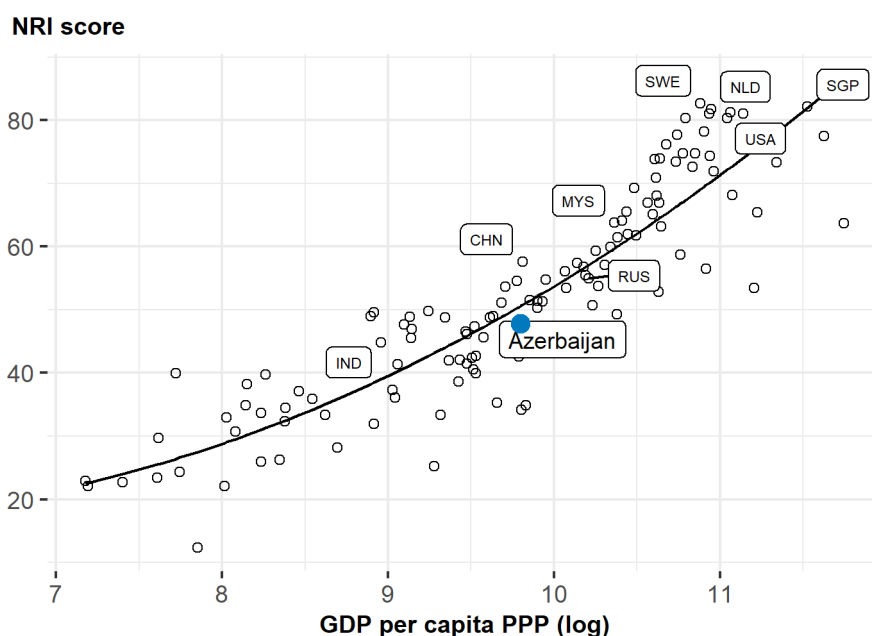
Table 1: Azerbaijan rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	25	Businesses	83
SDG Contribution	38	Access	85
Governments	42	Individuals	88
Regulation	55	Trust	91
Economy	69	Inclusion	92
Content	81	Quality of Life	92

NRI score and income

Figure 3 shows the position of Azerbaijan 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, Azerbaijan 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Azerbaijan belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—CIS—is Russia (RUS).

Performance against its income group and region

Upper-middle-income countries

Azerbaijan is ranked 20th 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 two of the four pillars: Score, Technology and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in four of the twelve sub-pillars: Future Technology, Governments, Regulation and SDG Contribution.

CIS

Azerbaijan is ranked 5th within CIS (Figure 4, right panel). It has a score above the regional average in two of the four pillars: Score, Technology and Impact. With regard to sub-pillars, it outperforms the average in CIS in six of the twelve sub-pillars: Future Technology, Governments, Trust, Regulation, Economy and SDG Contribution.

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



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

Dimension	Azerbaijan	Upper-middle-income countries	CIS
NRI	47.74	47.40	46.89
Technology	44.98	42.66	40.39
People	39.80	41.07	40.30
Governance	52.79	56.24	53.69
Impact	53.39	49.62	53.16

Strongest and weakest indicators

The indicators where Azerbaijan performs particularly well include Use of clean fuels and technology, Adult literacy rate, and Government procurement of advanced technology products (Table 3). By contrast, the economy's weakest indicators include Rural gap in use of digital payments, Handset prices, and 4G mobile network coverage.

Table 3: Top-ranked and bottom-ranked indicators of Azerbaijan

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Regulatory quality	93
Adult literacy rate	6	Fixed-broadband subscriptions	95
Government procurement of advanced technology products	13	Use of virtual social networks	96
ICT use and government efficiency	17	Firms with website	96
Legal framework's adaptability to digital business models	20	Rule of law	96
Company investment in emerging technology	23	ICT regulatory environment	96
Availability of local online content	32	Socioeconomic gap in use of digital payments	98
Ease of doing business	33	4G mobile network coverage	100
Road safety	36	Handset prices	106
Social safety net protection	39	Rural gap in use of digital payments	114

NRI 2019 At-A-Glance: Azerbaijan

Network Readiness Index

Rank: 70 (out of 121)

Score: 47.74

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	63	44.98	C. Governance pillar	84	52.79
1st sub-pillar: Access	85	49.38	1st sub-pillar: Trust	91	42.36
2nd sub-pillar: Content	81	34.36	2nd sub-pillar: Regulation	55	66.47
3rd sub-pillar: Future Technologies	25	51.20	3rd sub-pillar: Inclusion	92	49.54
B. People pillar	74	39.80	D. Impact pillar	63	53.39
1st sub-pillar: Individuals	88	42.25	1st sub-pillar: Economy	69	18.02
2nd sub-pillar: Businesses	83	24.08	2nd sub-pillar: Quality of Life	92	53.01
3rd sub-pillar: Governments	42	53.09	3rd sub-pillar: SDG Contribution	38	89.14

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	56	67.37	3.1.1 Rule of law	96	39.65
1.1.2 Handset prices	106	22.84	3.1.2 Software piracy rate	89	10.81
1.1.3 Internet access	50	76.74	3.1.3 Secure Internet servers	74	49.45
1.1.4 4G mobile network coverage	100	49.00	3.1.4 Cybersecurity	56	69.52
1.1.5 Fixed-broadband subscriptions	95	8.20	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	66	68.05	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	41	53.44	3.2.1 Regulatory quality	93	43.03
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	33	82.21
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	20	69.74
1.2.2 Mobile apps development	77	52.42	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	39	59.90
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	96	68.92
1.3.1 Availability of latest technologies	43	64.03	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	23	64.40	3.3.1 E-Participation	76	63.70
1.3.3 Government procurement of advanced technology products	13	67.26	3.3.2 Socioeconomic gap in use of digital payments	98	41.30
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	32	71.30
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	71	50.70
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	114	20.72
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	40	77.91	4.1.1 Medium and high-tech industry	77	25.71
2.1.2 Active mobile-broadband subscriptions	83	21.96	4.1.2 High-tech exports	83	7.63
2.1.3 Use of virtual social networks	96	29.31	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	84	19.80	4.1.4 Labour productivity per employee	67	20.73
2.1.5 Adult literacy rate	6	99.72	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	59	4.79	4.2.1 Happiness	84	43.96
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	83	56.47
2.2.1 Firms with website	96	18.69	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	86	6.15	4.2.4 Healthy life expectancy at birth	81	58.61
2.2.3 Professionals	50	31.85	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	54	40.37	4.3.1 Access to basic services	77	89.38
2.2.5 Extent of staff training	52	47.06	4.3.2 Pollution	57	85.93
2.2.6 R&D expenditure by businesses	82	0.35	4.3.3 Road safety	36	81.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	63	70.00	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	17	74.79			
2.3.4 R&D expenditure by governments and higher education	81	14.47			

* Confidential data

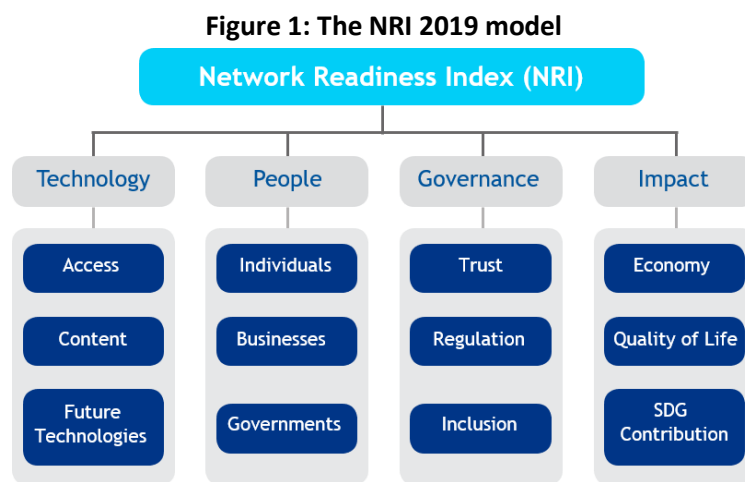
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Network Readiness Index 2019

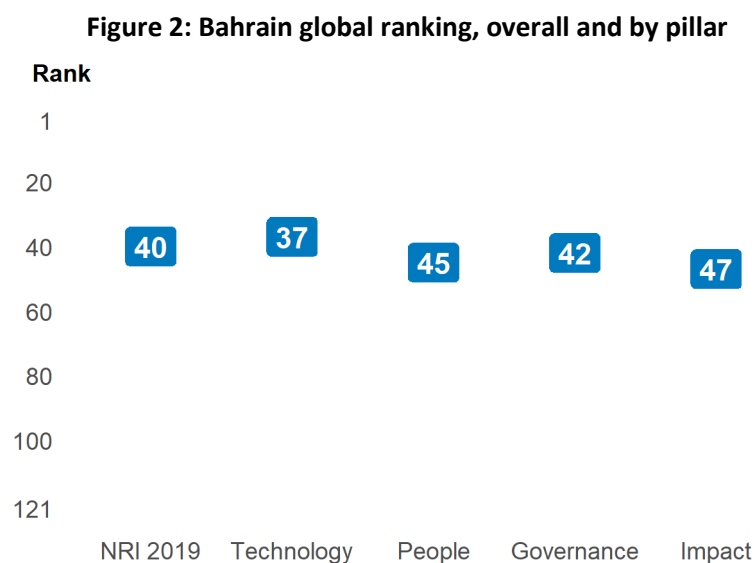
Bahrain

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Bahrain

Bahrain ranks 40th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

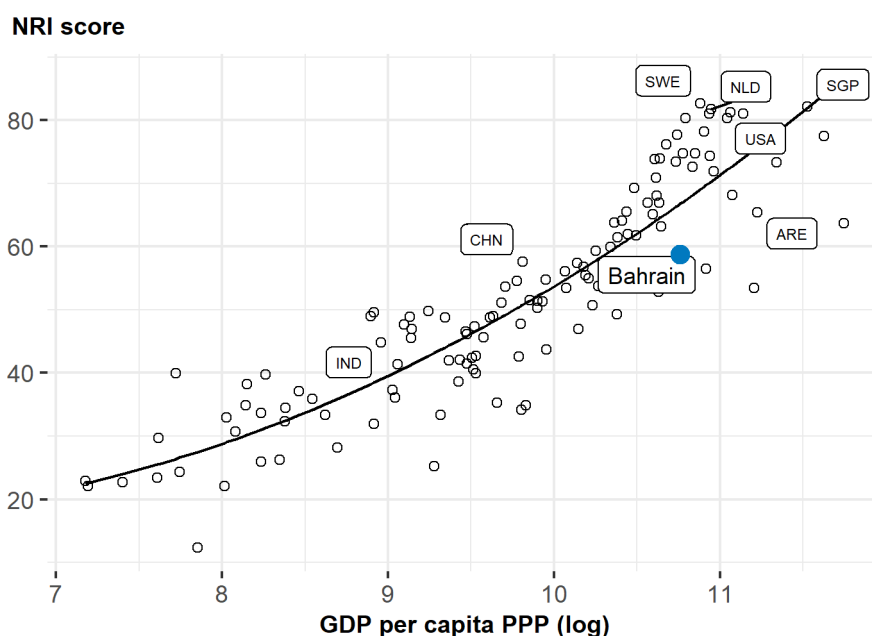
Table 1: Bahrain rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	4	Economy	43
Future Technologies	22	Trust	61
Quality of Life	26	Governments	63
Inclusion	32	Content	64
Regulation	37	Businesses	67
Access	41	SDG Contribution	76

NRI score and income

Figure 3 shows the position of Bahrain 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, Bahrain 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Bahrain belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

High-income countries

Bahrain is ranked 39th 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 outperforms high-income countries in two of the twelve sub-pillars: Future Technology and Individuals.

Arab States

Bahrain is ranked 3rd within Arab States (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

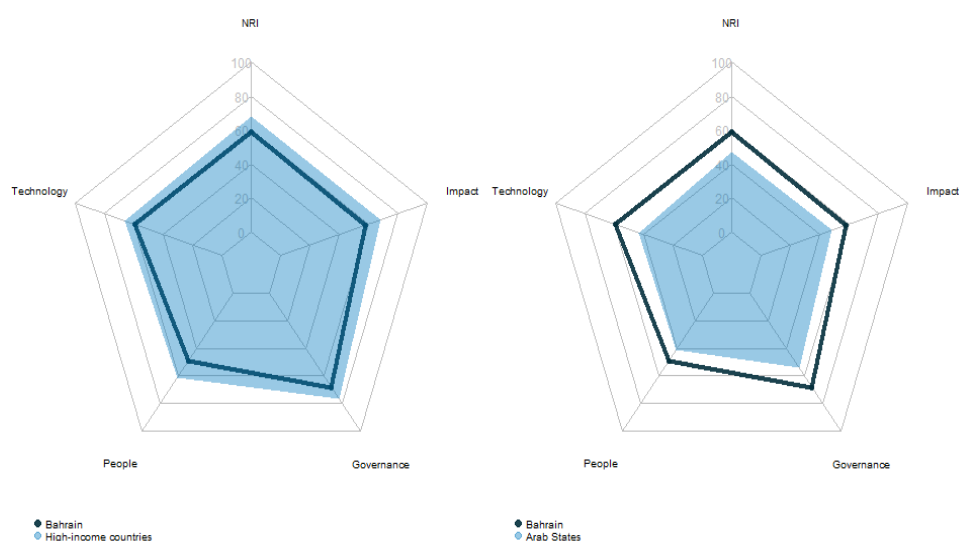


Table 2: Bahrain scores vs. averages of its income group and region, overall and by pillar

Dimension	Bahrain	High-income countries	Arab States
NRI	58.73	68.12	46.82
Technology	59.30	66.07	43.54
People	49.59	61.07	41.30
Governance	68.38	77.07	54.28
Impact	57.63	68.29	48.18

Strongest and weakest indicators

The indicators where Bahrain performs particularly well include 4G mobile network coverage, Internet access in schools, and Access to basic services (Table 3). By contrast, the economy's weakest indicators include Pollution, High-tech exports, and Handset prices.

Table 3: Top-ranked and bottom-ranked indicators of Bahrain

Strongest indicators	Rank	Weakest indicators	Rank
4G mobile network coverage	1	Publication and use of open data	72
Internet access in schools	1	Secure Internet servers	72
Access to basic services	1	Technicians and associate professionals	75
Use of clean fuels and technology	1	Mobile tariffs	78
Internet users	4	Professionals	78
Internet access	7	R&D expenditure by businesses	78
ICT skills	7	R&D expenditure by governments and higher education	95
Use of virtual social networks	8	Handset prices	104
ICT use and government efficiency	12	High-tech exports	106
Active mobile-broadband subscriptions	13	Pollution	116

NRI 2019 At-A-Glance: Bahrain

Network Readiness Index

Rank: 40 (out of 121)

Score: 58.73

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	37	59.30	C. Governance pillar	42	68.38
1st sub-pillar: Access	41	78.05	1st sub-pillar: Trust	61	56.32
2nd sub-pillar: Content	64	46.46	2nd sub-pillar: Regulation	37	74.77
3rd sub-pillar: Future Technologies	22	53.39	3rd sub-pillar: Inclusion	32	74.05
B. People pillar	45	49.59	D. Impact pillar	47	57.63
1st sub-pillar: Individuals	4	75.17	1st sub-pillar: Economy	43	28.15
2nd sub-pillar: Businesses	67	28.35	2nd sub-pillar: Quality of Life	26	74.57
3rd sub-pillar: Governments	63	45.25	3rd sub-pillar: SDG Contribution	76	70.17

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	78	57.10	3.1.1 Rule of law	45	62.75
1.1.2 Handset prices	104	23.16	3.1.2 Software piracy rate	46	50.00
1.1.3 Internet access	7	97.38	3.1.3 Secure Internet servers	72	50.46
1.1.4 4G mobile network coverage	1	100.00	3.1.4 Cybersecurity	69	62.06
1.1.5 Fixed-broadband subscriptions	20	94.83	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	25	73.86	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	50	61.24
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	42	81.00
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	NA	NA
1.2.2 Mobile apps development	44	69.32	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	30	68.21
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	44	88.42
1.3.1 Availability of latest technologies	33	72.94	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	NA	NA	3.3.1 E-Participation	53	77.07
1.3.3 Government procurement of advanced technology products	21	59.95	3.3.2 Socioeconomic gap in use of digital payments	48	77.50
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	NA	NA
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	23	66.36
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	30	75.26
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	4	98.88	4.1.1 Medium and high-tech industry	67	28.14
2.1.2 Active mobile-broadband subscriptions	13	49.18	4.1.2 High-tech exports	106	1.99
2.1.3 Use of virtual social networks	8	81.29	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	58	36.57	4.1.4 Labour productivity per employee	23	54.32
2.1.5 Adult literacy rate	33	96.11	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	7	88.98	4.2.1 Happiness	40	66.03
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	25	87.36
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	43	32.09	4.2.4 Healthy life expectancy at birth	42	70.33
2.2.3 Professionals	78	18.27	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	75	26.42	4.3.1 Access to basic services	1	100.00
2.2.5 Extent of staff training	27	64.45	4.3.2 Pollution	116	28.54
2.2.6 R&D expenditure by businesses	78	0.52	4.3.3 Road safety	33	83.44
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	36	69.62
2.3.1 Government online services	45	77.69	4.3.5 Maths proficiency in schools	48	39.39
2.3.2 Publication and use of open data	72	18.91	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	12	78.34			
2.3.4 R&D expenditure by governments and higher education	95	6.06			

* Confidential data

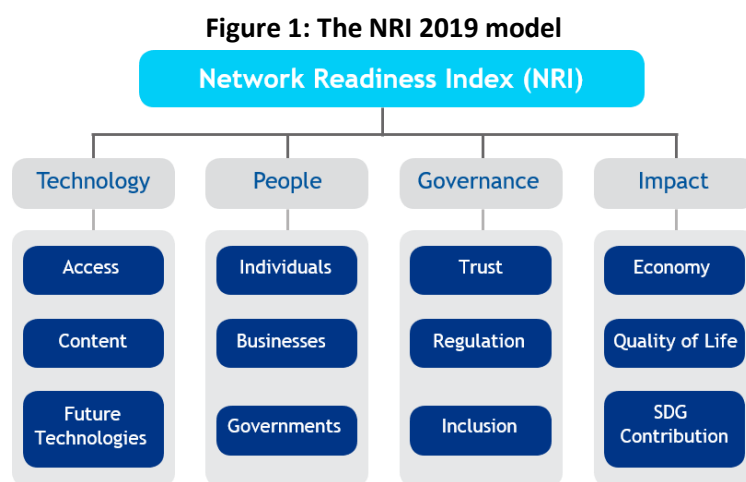
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Network Readiness Index 2019

Bangladesh

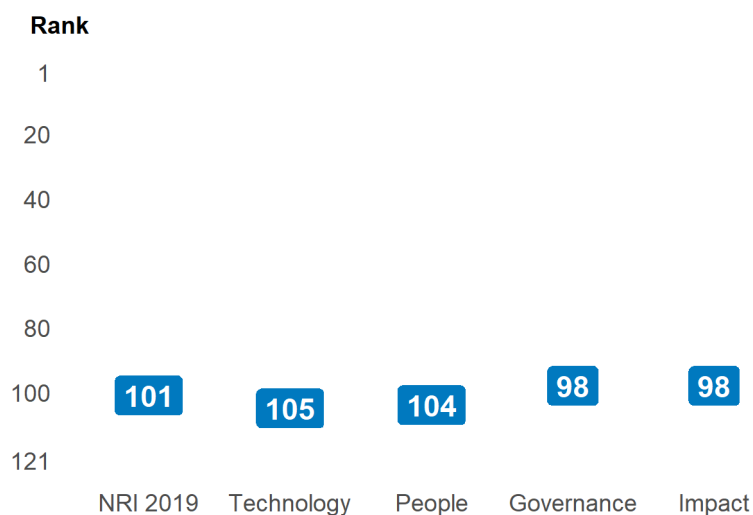
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Bangladesh

Bangladesh ranks 101st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance and Impact. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Bangladesh global ranking, overall and by pillar



Performance at sub-pillar level

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

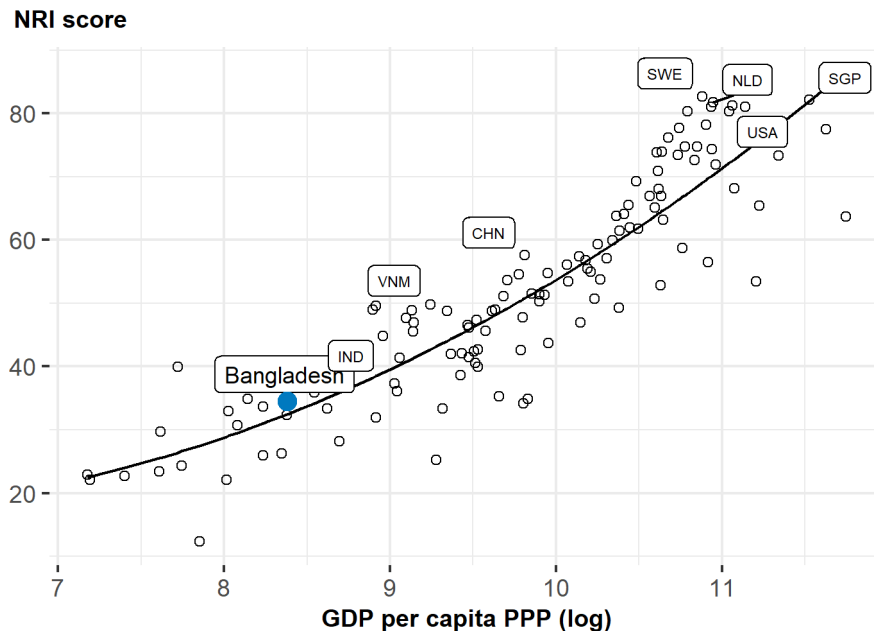
Table 1: Bangladesh rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	59	Trust	105
Inclusion	61	SDG Contribution	105
Governments	67	Regulation	106
Future Technologies	78	Individuals	107
Access	100	Economy	113
Content	103	Businesses	116

NRI score and income

Figure 3 shows the position of Bangladesh 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, Bangladesh 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Bangladesh belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

Bangladesh is ranked 16th 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: Governance. At the sub-pillar level, it outperforms lower-middle-income countries in four of the twelve sub-pillars: Future Technology, Governments, Inclusion and Quality of Life.

Asia & Pacific

Bangladesh is ranked 17th within Asia & Pacific (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 Asia & Pacific in one of the twelve sub-pillars: Inclusion.

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

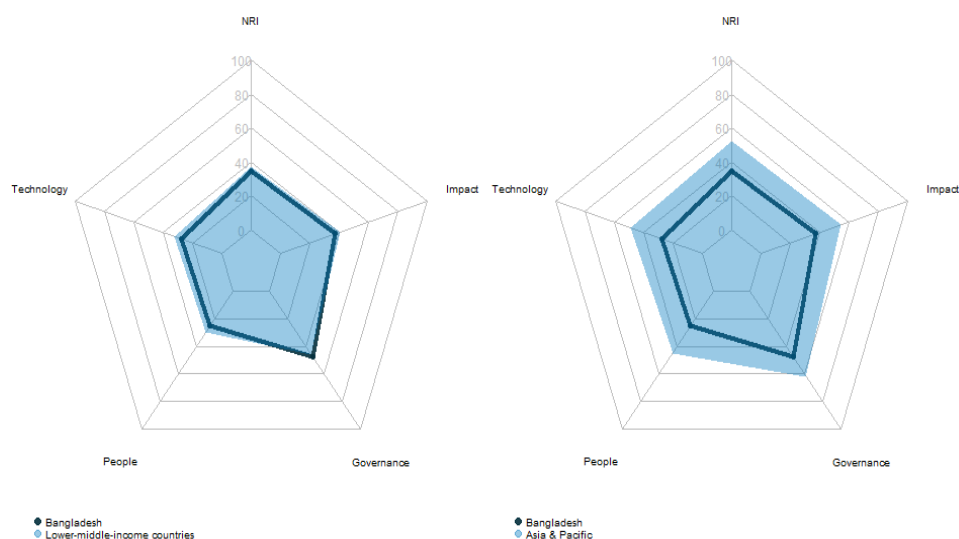


Table 2: Bangladesh scores vs. averages of its income group and region, overall and by pillar

Dimension	Bangladesh	Lower-middle-income countries	Asia & Pacific
NRI	34.48	37.18	52.44
Technology	27.67	32.15	48.56
People	25.13	30.04	44.85
Governance	47.78	46.17	61.84
Impact	37.32	40.35	54.50

Strongest and weakest indicators

The indicators where Bangladesh performs particularly well include Rural gap in use of digital payments, Freedom to make life choices, and Income inequality (Table 3). By contrast, the economy's weakest indicators include Internet access, Ease of doing business, and Internet users.

Table 3: Top-ranked and bottom-ranked indicators of Bangladesh

Strongest indicators	Rank	Weakest indicators	Rank
Rural gap in use of digital payments	6	Use of clean fuels and technology	107
Freedom to make life choices	28	Internet shopping	111
Income inequality	31	Regulatory quality	111
Mobile tariffs	50	Extent of staff training	113
Government online services	51	High-tech exports	113
E-Participation	51	Pollution	113
Maths proficiency in schools	54	Social safety net protection	114
Reading proficiency in schools	58	Internet users	116
Handset prices	59	Ease of doing business	118
Computer software spending	59	Internet access	120

NRI 2019 At-A-Glance: Bangladesh

Network Readiness Index

Rank: 101 (out of 121)

Score: 34.48

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	105	27.67	C. Governance pillar	98	47.78
1st sub-pillar: Access	100	37.41	1st sub-pillar: Trust	105	37.16
2nd sub-pillar: Content	103	18.03	2nd sub-pillar: Regulation	106	43.31
3rd sub-pillar: Future Technologies	78	27.57	3rd sub-pillar: Inclusion	61	62.87
B. People pillar	104	25.13	D. Impact pillar	98	37.32
1st sub-pillar: Individuals	107	22.15	1st sub-pillar: Economy	113	6.09
2nd sub-pillar: Businesses	116	9.99	2nd sub-pillar: Quality of Life	59	62.41
3rd sub-pillar: Governments	67	43.26	3rd sub-pillar: SDG Contribution	105	43.45

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	50	69.55	3.1.1 Rule of law	98	38.73
1.1.2 Handset prices	59	46.95	3.1.2 Software piracy rate	97	6.76
1.1.3 Internet access	120	0.51	3.1.3 Secure Internet servers	95	40.52
1.1.4 4G mobile network coverage	96	58.00	3.1.4 Cybersecurity	78	55.48
1.1.5 Fixed-broadband subscriptions	90	20.00	3.1.5 Online trust and safety	74	44.29
1.1.6 International Internet bandwidth	89	63.07	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	64	3.75	3.2.1 Regulatory quality	111	33.22
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	118	26.20
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	72	39.01
1.2.2 Mobile apps development	107	30.09	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	95	0.01	3.2.5 Social safety net protection	114	12.67
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	85	73.75
1.3.1 Availability of latest technologies	98	35.28	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	93	23.06	3.3.1 E-Participation	51	77.71
1.3.3 Government procurement of advanced technology products	79	33.77	3.3.2 Socioeconomic gap in use of digital payments	72	61.43
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	96	32.41
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	6	79.95
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	116	5.79	4.1.1 Medium and high-tech industry	99	12.20
2.1.2 Active mobile-broadband subscriptions	105	12.93	4.1.2 High-tech exports	113	0.58
2.1.3 Use of virtual social networks	103	17.88	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	91	14.54	4.1.4 Labour productivity per employee	96	5.49
2.1.5 Adult literacy rate	84	59.59	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	105	30.03
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	28	86.35
2.2.1 Firms with website	101	10.00	4.2.3 Income inequality	31	80.53
2.2.2 Internet shopping	111	1.59	4.2.4 Healthy life expectancy at birth	90	52.75
2.2.3 Professionals	101	10.74	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	107	7.21	4.3.1 Access to basic services	101	63.89
2.2.5 Extent of staff training	113	20.44	4.3.2 Pollution	113	40.63
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	64	60.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	58	46.84
2.3.1 Government online services	51	76.15	4.3.5 Maths proficiency in schools	54	33.18
2.3.2 Publication and use of open data	87	10.57	4.3.6 Use of clean fuels and technology	107	15.56
2.3.3 ICT use and government efficiency	62	43.04			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

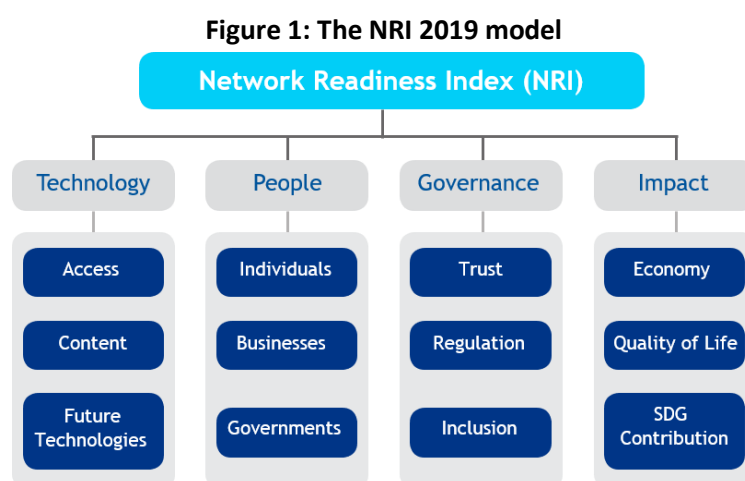
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Network Readiness Index 2019

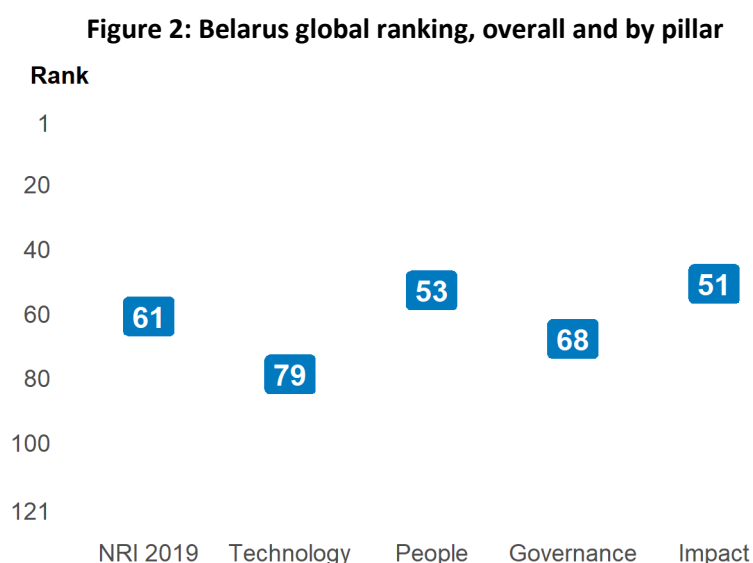
Belarus

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Belarus

Belarus ranks 61st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

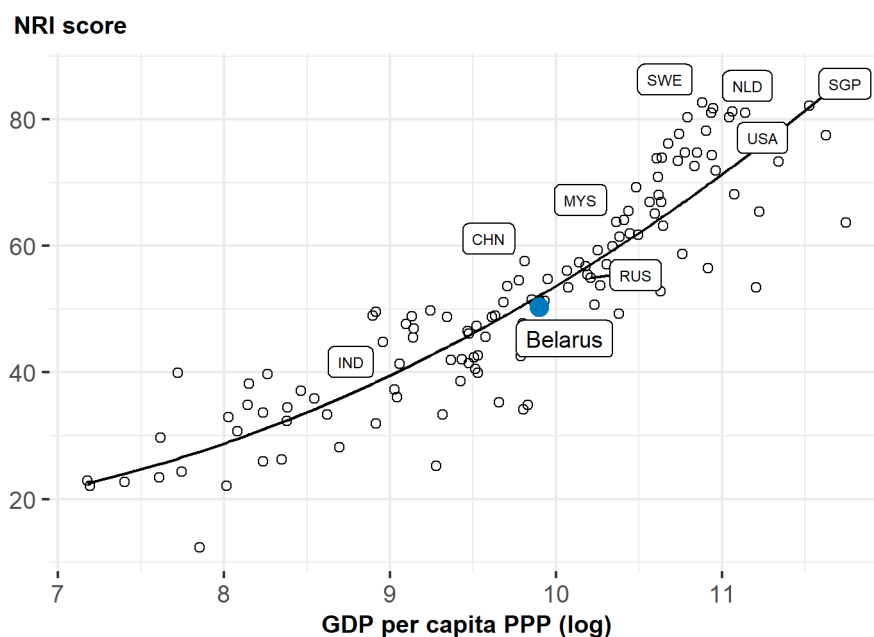
Table 1: Belarus rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Inclusion	34	Economy	63
SDG Contribution	34	Quality of Life	78
Individuals	35	Regulation	83
Businesses	37	Trust	87
Content	55	Governments	95
Access	58	Future Technologies	121

NRI score and income

Figure 3 shows the position of Belarus 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, Belarus 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Belarus belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—CIS—is Russia (RUS).

Performance against its income group and region

Upper-middle-income countries

Belarus is ranked 15th 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 three of the four pillars: Score, People, Governance and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in eight of the twelve sub-pillars: Access, Content, Individuals, Businesses, Inclusion, Economy, Quality of Life and SDG Contribution.

CIS

Belarus is ranked 3rd within CIS (Figure 4, right panel). It has a score above the regional average in three of the four pillars: Score, People, Governance and Impact. With regard to sub-pillars, it outperforms the average in CIS in nine of the twelve sub-pillars: Access, Content, Individuals, Businesses, Trust, Regulation, Inclusion, Economy and SDG Contribution.

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

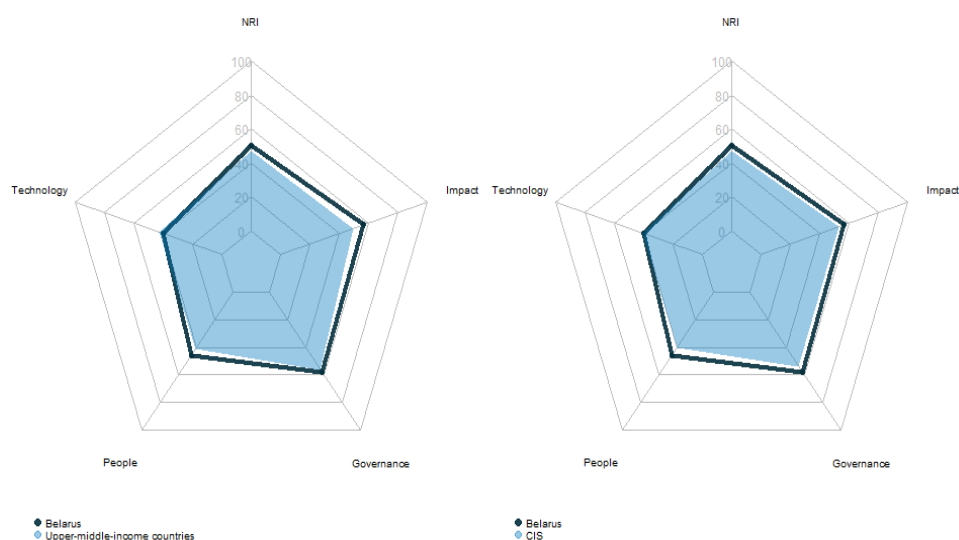


Table 2: Belarus scores vs. averages of its income group and region, overall and by pillar

Dimension	Belarus	Upper-middle-income countries	CIS
NRI	50.34	47.40	46.89
Technology	40.16	42.66	40.39
People	46.26	41.07	40.30
Governance	58.27	56.24	53.69
Impact	56.66	49.62	53.16

Strongest and weakest indicators

The indicators where Belarus performs particularly well include Use of clean fuels and technology, Income inequality, and Adult literacy rate (Table 3). By contrast, the economy's weakest indicators include ICT regulatory environment, Freedom to make life choices, and Rule of law.

Table 3: Top-ranked and bottom-ranked indicators of Belarus

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Happiness	82
Income inequality	2	High-tech exports	84
Adult literacy rate	8	Publication and use of open data	86
Tertiary enrolment	10	Use of virtual social networks	87
International Internet bandwidth	13	Software piracy rate	91
Professionals	18	Computer software spending	97
Gender gap in internet use	26	Regulatory quality	104
Firms with website	29	Rule of law	109
Socioeconomic gap in use of digital payments	29	Freedom to make life choices	110
Medium and high-tech industry	29	ICT regulatory environment	115

NRI 2019 At-A-Glance: Belarus

Network Readiness Index

Rank: 61 (out of 121)

Score: 50.34

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	79	40.16	C. Governance pillar	68	58.27
1st sub-pillar: Access	58	69.81	1st sub-pillar: Trust	87	43.63
2nd sub-pillar: Content	55	48.79	2nd sub-pillar: Regulation	83	57.15
3rd sub-pillar: Future Technologies	121	1.89	3rd sub-pillar: Inclusion	34	74.04
B. People pillar	53	46.26	D. Impact pillar	51	56.66
1st sub-pillar: Individuals	35	62.44	1st sub-pillar: Economy	63	21.31
2nd sub-pillar: Businesses	37	43.69	2nd sub-pillar: Quality of Life	78	57.93
3rd sub-pillar: Governments	95	32.66	3rd sub-pillar: SDG Contribution	34	90.73

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	37	74.30	3.1.1 Rule of law	109	34.34
1.1.2 Handset prices	62	46.77	3.1.2 Software piracy rate	91	9.46
1.1.3 Internet access	59	70.60	3.1.3 Secure Internet servers	48	69.43
1.1.4 4G mobile network coverage	81	75.70	3.1.4 Cybersecurity	70	61.29
1.1.5 Fixed-broadband subscriptions	65	57.86	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	13	76.50	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	32	86.95	3.2.1 Regulatory quality	104	36.88
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	48	77.93
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	NA	NA
1.2.2 Mobile apps development	58	63.44	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	55	0.65	3.2.5 Social safety net protection	NA	NA
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	115	38.80
1.3.1 Availability of latest technologies	NA	NA	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	NA	NA	3.3.1 E-Participation	33	86.62
1.3.3 Government procurement of advanced technology products	NA	NA	3.3.2 Socioeconomic gap in use of digital payments	29	86.15
1.3.4 ICT PCT patent applications	59	5.11	3.3.3 Availability of local online content	NA	NA
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	26	66.06
1.3.6 Robot density	58	0.56	3.3.5 Rural gap in use of digital payments	78	57.32
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	44	77.16	4.1.1 Medium and high-tech industry	29	51.75
2.1.2 Active mobile-broadband subscriptions	51	32.92	4.1.2 High-tech exports	84	7.54
2.1.3 Use of virtual social networks	87	38.67	4.1.3 PCT patent applications	56	0.83
2.1.4 Tertiary enrolment	10	63.78	4.1.4 Labour productivity per employee	60	25.11
2.1.5 Adult literacy rate	8	99.66	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	82	45.33
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	110	26.63
2.2.1 Firms with website	29	71.27	4.2.3 Income inequality	2	98.95
2.2.2 Internet shopping	37	38.49	4.2.4 Healthy life expectancy at birth	74	60.81
2.2.3 Professionals	18	54.38	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	48	44.22	4.3.1 Access to basic services	49	96.22
2.2.5 Extent of staff training	NA	NA	4.3.2 Pollution	55	86.09
2.2.6 R&D expenditure by businesses	41	10.08	4.3.3 Road safety	37	80.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	57	70.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	86	10.95	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	78	16.27			

* Confidential data

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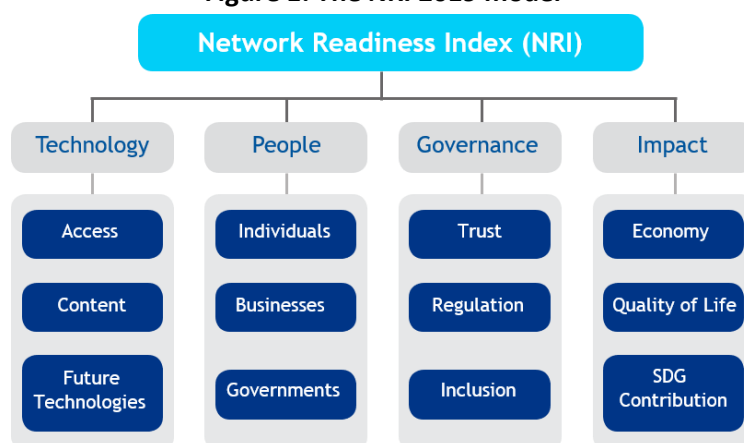
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Network Readiness Index 2019

Belgium

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

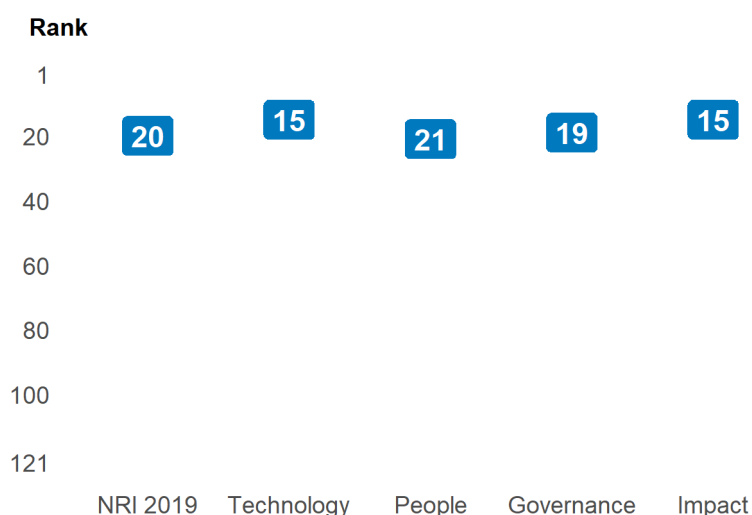
Figure 1: The NRI 2019 model



Global NRI position of Belgium

Belgium ranks 20th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology and Impact. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Belgium global ranking, overall and by pillar



Performance at sub-pillar level

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

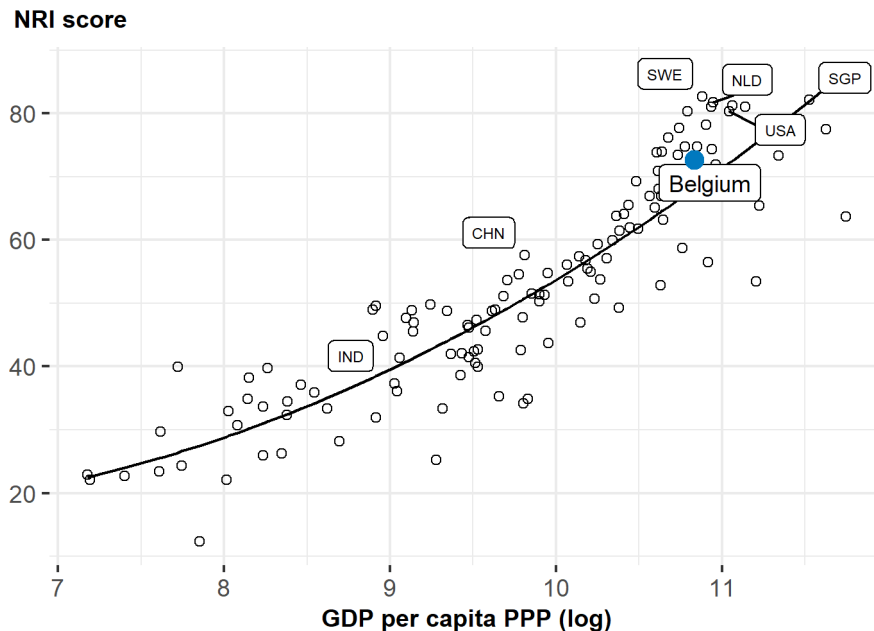
Table 1: Belgium rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	13	Trust	20
SDG Contribution	14	Regulation	20
Future Technologies	16	Content	21
Access	17	Inclusion	22
Economy	19	Governments	25
Quality of Life	19	Individuals	40

NRI score and income

Figure 3 shows the position of Belgium 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, Belgium 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Belgium belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Belgium is ranked 20th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in ten of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Belgium is ranked 13th 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 eleven of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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



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

Dimension	Belgium	High-income countries	Europe
NRI	72.62	68.12	65.20
Technology	72.42	66.07	63.08
People	63.79	61.07	57.50
Governance	80.62	77.07	73.99
Impact	73.67	68.29	66.24

Strongest and weakest indicators

The indicators where Belgium performs particularly well include 4G mobile network coverage, Internet access in schools, and E-commerce legislation (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Active mobile-broadband subscriptions, and E-Participation.

Table 3: Top-ranked and bottom-ranked indicators of Belgium

Strongest indicators	Rank	Weakest indicators	Rank
4G mobile network coverage	1	Mobile tariffs	42
Internet access in schools	1	Gender gap in internet use	42
E-commerce legislation	1	High-tech exports	44
Use of clean fuels and technology	1	Ease of doing business	45
Computer software spending	4	Legal framework's adaptability to digital business models	47
Social safety net protection	5	Government online services	55
Socioeconomic gap in use of digital payments	6	Online trust and safety	58
Robot density	10	E-Participation	59
Firms with website	10	Active mobile-broadband subscriptions	67
Labour productivity per employee	10	Freedom to make life choices	69

NRI 2019 At-A-Glance: Belgium

Network Readiness Index

Rank: 20 (out of 121)

Score: 72.62

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	15	72.42	C. Governance pillar	19	80.62
1st sub-pillar: Access	17	85.79	1st sub-pillar: Trust	20	79.91
2nd sub-pillar: Content	21	68.97	2nd sub-pillar: Regulation	20	83.35
3rd sub-pillar: Future Technologies	16	62.52	3rd sub-pillar: Inclusion	22	78.59
B. People pillar	21	63.79	D. Impact pillar	15	73.67
1st sub-pillar: Individuals	40	61.20	1st sub-pillar: Economy	19	45.36
2nd sub-pillar: Businesses	13	67.32	2nd sub-pillar: Quality of Life	19	80.18
3rd sub-pillar: Governments	25	62.84	3rd sub-pillar: SDG Contribution	14	95.48

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	42	71.98	3.1.1 Rule of law	21	84.53
1.1.2 Handset prices	14	71.27	3.1.2 Software piracy rate	13	90.54
1.1.3 Internet access	27	86.42	3.1.3 Secure Internet servers	32	81.44
1.1.4 4G mobile network coverage	1	100.00	3.1.4 Cybersecurity	32	87.17
1.1.5 Fixed-broadband subscriptions	12	96.76	3.1.5 Online trust and safety	58	55.86
1.1.6 International Internet bandwidth	23	74.08	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	25	78.59
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	45	79.17
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	47	47.40
1.2.2 Mobile apps development	33	76.60	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	24	3.68	3.2.5 Social safety net protection	5	98.78
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	11	96.14
1.3.1 Availability of latest technologies	12	89.19	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	21	64.75	3.3.1 E-Participation	59	72.61
1.3.3 Government procurement of advanced technology products	38	48.06	3.3.2 Socioeconomic gap in use of digital payments	6	97.89
1.3.4 ICT PCT patent applications	20	53.72	3.3.3 Availability of local online content	19	83.09
1.3.5 Computer software spending	4	63.64	3.3.4 Gender gap in internet use	42	61.30
1.3.6 Robot density	10	55.75	3.3.5 Rural gap in use of digital payments	13	78.08
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	21	87.76	4.1.1 Medium and high-tech industry	14	63.25
2.1.2 Active mobile-broadband subscriptions	67	28.58	4.1.2 High-tech exports	44	19.55
2.1.3 Use of virtual social networks	38	64.66	4.1.3 PCT patent applications	16	32.03
2.1.4 Tertiary enrolment	19	58.06	4.1.4 Labour productivity per employee	10	66.60
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	16	66.95	4.2.1 Happiness	20	79.88
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	69	64.79
2.2.1 Firms with website	10	84.93	4.2.3 Income inequality	12	92.89
2.2.2 Internet shopping	14	73.44	4.2.4 Healthy life expectancy at birth	26	83.15
2.2.3 Professionals	11	65.50	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	23	62.05	4.3.1 Access to basic services	17	99.66
2.2.5 Extent of staff training	17	73.24	4.3.2 Pollution	30	91.94
2.2.6 R&D expenditure by businesses	11	44.77	4.3.3 Road safety	19	90.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	55	73.07	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	29	45.28	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	38	57.43			
2.3.4 R&D expenditure by governments and higher education	11	75.59			

* Confidential data

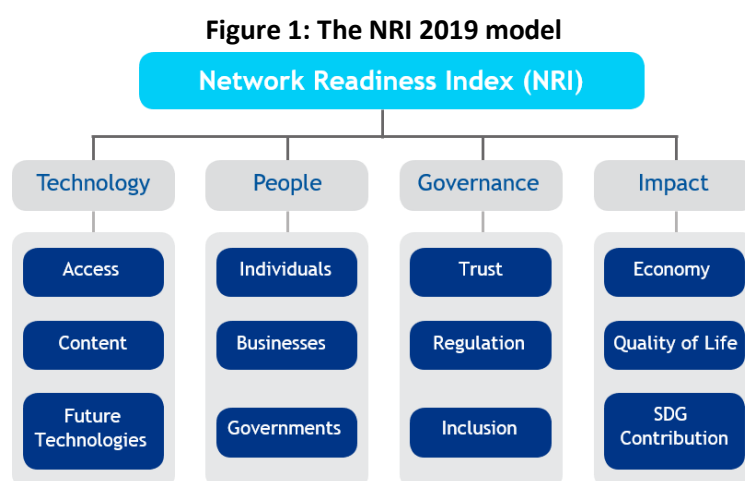
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Network Readiness Index 2019

Bosnia and Herzegovina

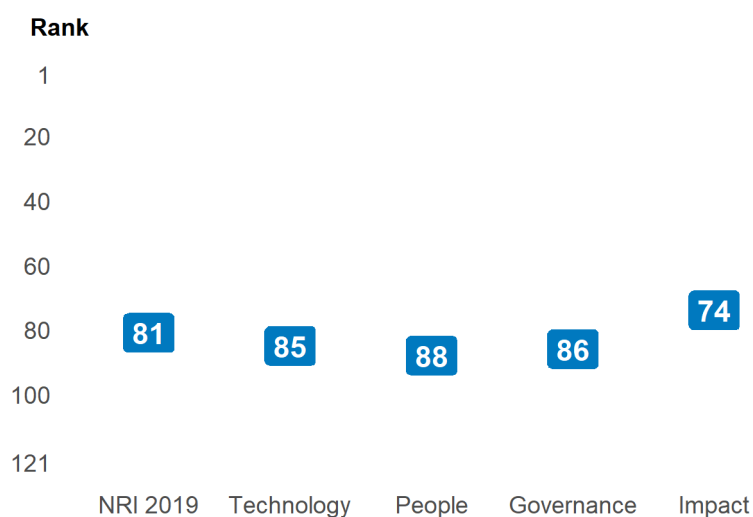
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Bosnia and Herzegovina

Bosnia and Herzegovina ranks 81st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Bosnia and Herzegovina global ranking, overall and by pillar



Performance at sub-pillar level

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

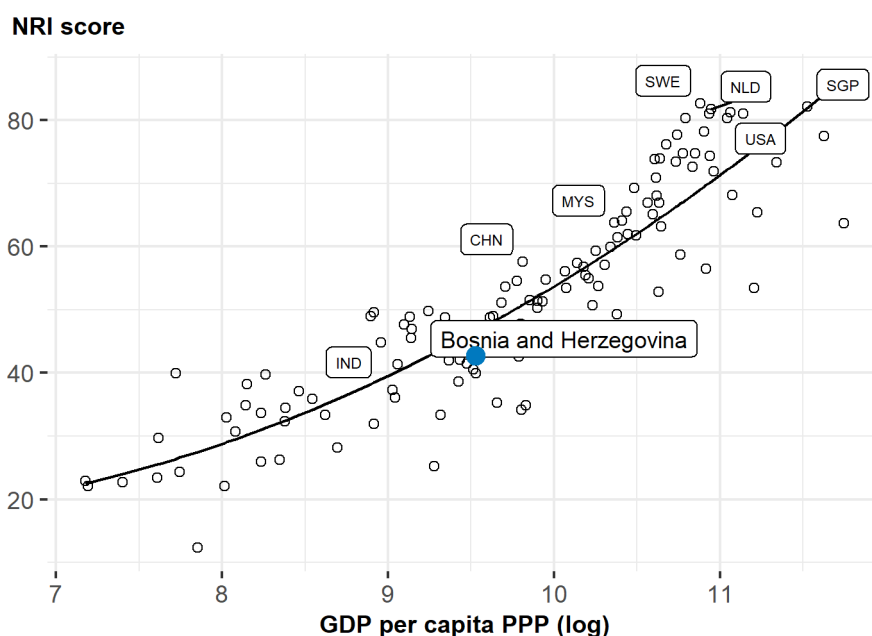
Table 1: Bosnia and Herzegovina rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	58	Inclusion	77
Content	63	Access	88
SDG Contribution	64	Trust	88
Economy	73	Regulation	88
Businesses	74	Future Technologies	115
Quality of Life	75	Governments	116

NRI score and income

Figure 3 shows the position of Bosnia and Herzegovina 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, Bosnia and Herzegovina 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Bosnia and Herzegovina belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Upper-middle-income countries

Bosnia and Herzegovina 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 three of the twelve sub-pillars: Content, Individuals and Quality of Life.

Europe

Bosnia and Herzegovina is ranked 40th within Europe (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 Bosnia and Herzegovina against its income group and region, overall and by pillar

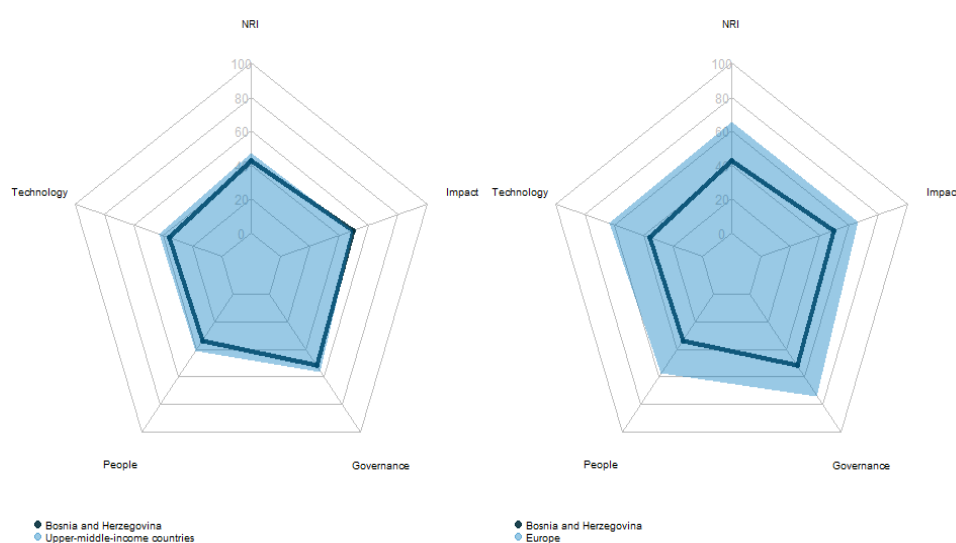


Table 2: Bosnia and Herzegovina scores vs. averages of its income group and region, overall and by pillar

Dimension	Bosnia and Herzegovina	Upper-middle-income countries	Europe
NRI	42.72	47.40	65.20
Technology	35.70	42.66	63.08
People	33.65	41.07	57.50
Governance	51.88	56.24	73.99
Impact	49.64	49.62	66.24

Strongest and weakest indicators

The indicators where Bosnia and Herzegovina performs particularly well include E-commerce legislation, ICT regulatory environment, and Rural gap in use of digital payments (Table 3). By contrast, the economy's weakest indicators include 4G mobile network coverage, Extent of staff training, and Social safety net protection.

Table 3: Top-ranked and bottom-ranked indicators of Bosnia and Herzegovina

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	E-Participation	104
ICT regulatory environment	18	Government online services	106
Rural gap in use of digital payments	32	Cybersecurity	107
Intellectual property receipts	36	Freedom to make life choices	107
ICT skills	36	Government procurement of advanced technology products	108
Income inequality	36	Legal framework's adaptability to digital business models	111
Adult literacy rate	37	Company investment in emerging technology	114
Healthy life expectancy at birth	49	Social safety net protection	115
International Internet bandwidth	51	Extent of staff training	116
Firms with website	51	4G mobile network coverage	120

NRI 2019 At-A-Glance: Bosnia and Herzegovina

Network Readiness Index

Rank: 81 (out of 121)

Score: 42.72

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	85	35.70	C. Governance pillar	86	51.88
1st sub-pillar: Access	88	45.78	1st sub-pillar: Trust	88	42.68
2nd sub-pillar: Content	63	46.60	2nd sub-pillar: Regulation	88	55.80
3rd sub-pillar: Future Technologies	115	14.71	3rd sub-pillar: Inclusion	77	57.16
B. People pillar	88	33.65	D. Impact pillar	74	49.64
1st sub-pillar: Individuals	58	56.45	1st sub-pillar: Economy	73	16.66
2nd sub-pillar: Businesses	74	25.94	2nd sub-pillar: Quality of Life	75	58.77
3rd sub-pillar: Governments	116	18.58	3rd sub-pillar: SDG Contribution	64	73.48

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	91	49.42	3.1.1 Rule of law	71	48.02
1.1.2 Handset prices	75	41.31	3.1.2 Software piracy rate	58	37.84
1.1.3 Internet access	65	67.13	3.1.3 Secure Internet servers	54	64.57
1.1.4 4G mobile network coverage	120	0.00	3.1.4 Cybersecurity	107	20.29
1.1.5 Fixed-broadband subscriptions	73	46.79	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	51	70.04	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	84	46.87
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	82	62.28
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	111	18.80
1.2.2 Mobile apps development	82	50.19	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	36	1.19	3.2.5 Social safety net protection	115	11.87
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	18	94.98
1.3.1 Availability of latest technologies	76	44.95	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	114	9.96	3.3.1 E-Participation	104	35.67
1.3.3 Government procurement of advanced technology products	108	21.98	3.3.2 Socioeconomic gap in use of digital payments	70	62.05
1.3.4 ICT PCT patent applications	67	1.73	3.3.3 Availability of local online content	55	56.21
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	62	56.85
1.3.6 Robot density	59	0.55	3.3.5 Rural gap in use of digital payments	32	75.01
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	64	67.13	4.1.1 Medium and high-tech industry	82	23.31
2.1.2 Active mobile-broadband subscriptions	89	20.24	4.1.2 High-tech exports	77	9.91
2.1.3 Use of virtual social networks	76	48.02	4.1.3 PCT patent applications	64	0.43
2.1.4 Tertiary enrolment	NA	NA	4.1.4 Labour productivity per employee	54	32.99
2.1.5 Adult literacy rate	37	95.38	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	36	51.48	4.2.1 Happiness	57	58.95
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	107	30.16
2.2.1 Firms with website	51	58.15	4.2.3 Income inequality	36	78.95
2.2.2 Internet shopping	67	15.07	4.2.4 Healthy life expectancy at birth	49	67.03
2.2.3 Professionals	57	28.66	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	55	39.83	4.3.1 Access to basic services	57	94.40
2.2.5 Extent of staff training	116	12.19	4.3.2 Pollution	87	75.71
2.2.6 R&D expenditure by businesses	67	1.71	4.3.3 Road safety	67	59.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	106	36.93	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	92	8.02	4.3.6 Use of clean fuels and technology	88	64.44
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	87	10.78			

* Confidential data

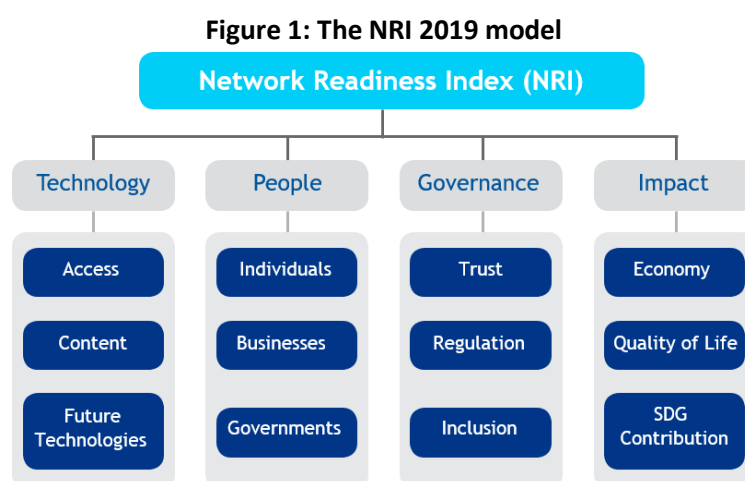
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Network Readiness Index 2019

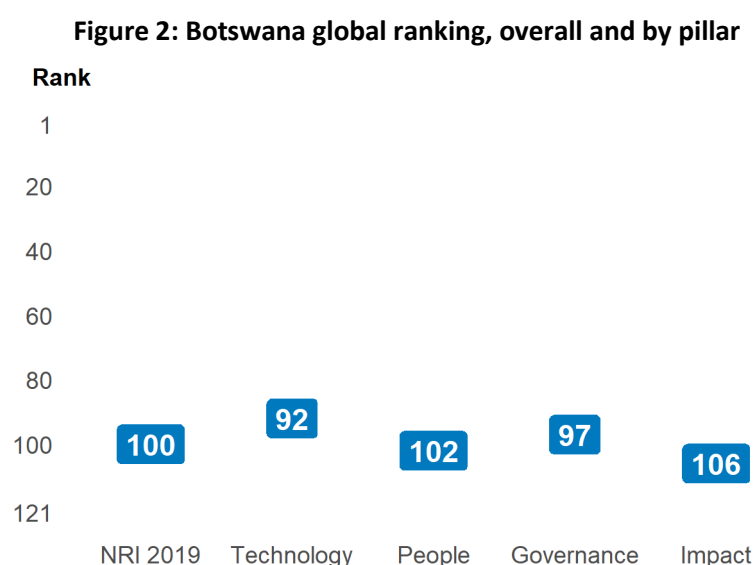
Botswana

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Botswana

Botswana ranks 100th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

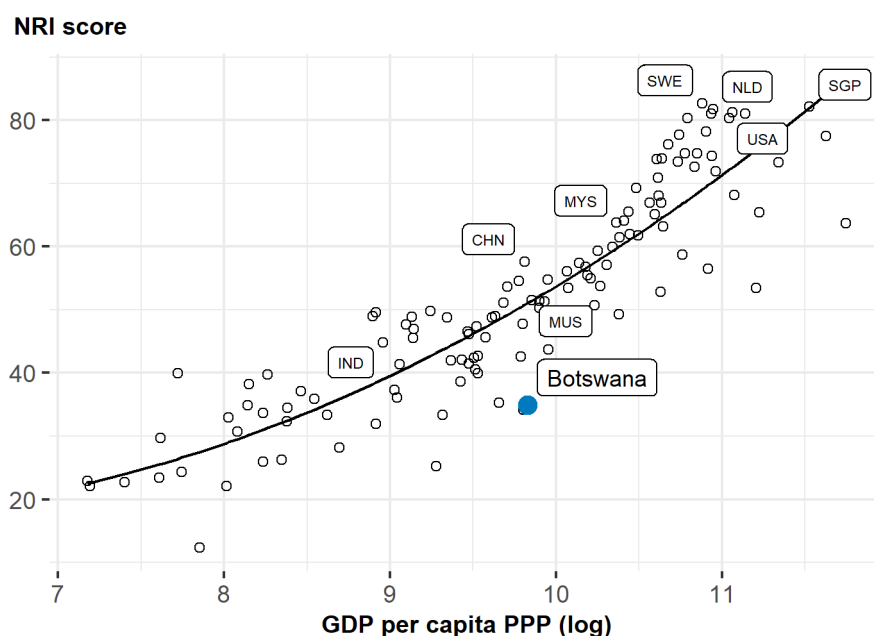
Table 1: Botswana rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	55	Businesses	97
Regulation	70	Content	100
Trust	82	Governments	108
Access	89	Inclusion	113
Individuals	93	Quality of Life	115
SDG Contribution	93	Economy	117

NRI score and income

Figure 3 shows the position of Botswana 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, Botswana 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Botswana belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Upper-middle-income countries

Botswana is ranked 35th in the group of upper-middle-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 outperforms upper-middle-income countries in two of the twelve sub-pillars: Future Technology and Regulation.

Africa

Botswana is ranked 6th within Africa (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Africa in eight of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Trust, Regulation and SDG Contribution.

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

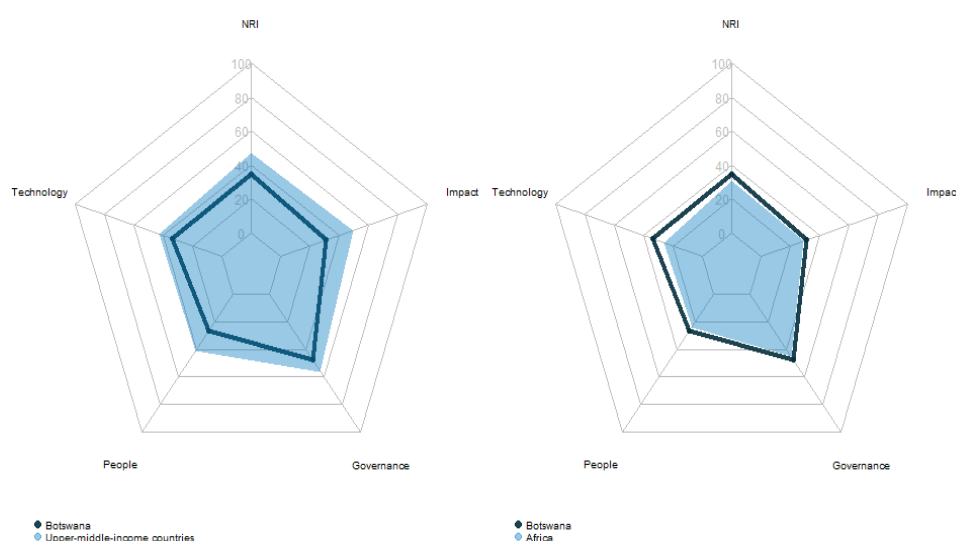


Table 2: Botswana scores vs. averages of its income group and region, overall and by pillar

Dimension	Botswana	Upper-middle-income countries	Africa
NRI	34.85	47.40	31.07
Technology	33.55	42.66	26.03
People	26.68	41.07	23.76
Governance	47.96	56.24	45.32
Impact	31.23	49.62	29.15

Strongest and weakest indicators

The indicators where Botswana performs particularly well include Government procurement of advanced technology products, Online trust and safety, and Handset prices (Table 3). By contrast, the economy's weakest indicators include Government online services, Happiness, and E-Participation.

Table 3: Top-ranked and bottom-ranked indicators of Botswana

Strongest indicators	Rank	Weakest indicators	Rank
Government procurement of advanced technology products	27	Digital participation and content creation	99
Online trust and safety	29	Income inequality	102
Handset prices	39	Fixed-broadband subscriptions	105
Rule of law	42	Healthy life expectancy at birth	105
Regulatory quality	48	Availability of local online content	108
Reading proficiency in schools	53	Medium and high-tech industry	109
ICT skills	55	High-tech exports	109
R&D expenditure by governments and higher education	55	E-Participation	117
Social safety net protection	57	Government online services	118
Maths proficiency in schools	58	Happiness	118

NRI 2019 At-A-Glance: Botswana

Network Readiness Index

Rank: 100 (out of 121)

Score: 34.85

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	92	33.55	C. Governance pillar	97	47.96
1st sub-pillar: Access	89	45.76	1st sub-pillar: Trust	82	47.42
2nd sub-pillar: Content	100	22.55	2nd sub-pillar: Regulation	70	61.67
3rd sub-pillar: Future Technologies	55	32.33	3rd sub-pillar: Inclusion	113	34.78
B. People pillar	102	26.68	D. Impact pillar	106	31.23
1st sub-pillar: Individuals	93	37.74	1st sub-pillar: Economy	117	4.13
2nd sub-pillar: Businesses	97	19.90	2nd sub-pillar: Quality of Life	115	33.09
3rd sub-pillar: Governments	108	22.40	3rd sub-pillar: SDG Contribution	93	56.46

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	96	46.05	3.1.1 Rule of law	42	63.97
1.1.2 Handset prices	39	58.28	3.1.2 Software piracy rate	83	12.16
1.1.3 Internet access	83	42.09	3.1.3 Secure Internet servers	93	41.73
1.1.4 4G mobile network coverage	93	65.00	3.1.4 Cybersecurity	85	46.16
1.1.5 Fixed-broadband subscriptions	105	1.18	3.1.5 Online trust and safety	29	73.06
1.1.6 International Internet bandwidth	94	61.98	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	48	61.43
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	80	63.62
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	76	38.34
1.2.2 Mobile apps development	97	39.65	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	88	0.04	3.2.5 Social safety net protection	57	45.93
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	60	85.72
1.3.1 Availability of latest technologies	88	40.72	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	90	24.99	3.3.1 E-Participation	117	8.91
1.3.3 Government procurement of advanced technology products	27	54.54	3.3.2 Socioeconomic gap in use of digital payments	93	44.09
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	108	20.54
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	78	37.91
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	72	62.45
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	90	41.40	4.1.1 Medium and high-tech industry	109	7.08
2.1.2 Active mobile-broadband subscriptions	61	29.34	4.1.2 High-tech exports	109	1.18
2.1.3 Use of virtual social networks	85	40.75	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	87	17.70	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	67	80.97	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	55	16.26	4.2.1 Happiness	118	8.41
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	65	66.93
2.2.1 Firms with website	88	23.37	4.2.3 Income inequality	102	25.53
2.2.2 Internet shopping	95	4.60	4.2.4 Healthy life expectancy at birth	105	31.50
2.2.3 Professionals	88	16.00	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	62	33.51	4.3.1 Access to basic services	92	78.64
2.2.5 Extent of staff training	61	39.54	4.3.2 Pollution	70	82.50
2.2.6 R&D expenditure by businesses	61	2.41	4.3.3 Road safety	98	34.06
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	53	55.71
2.3.1 Government online services	118	12.31	4.3.5 Maths proficiency in schools	58	27.88
2.3.2 Publication and use of open data	93	5.89	4.3.6 Use of clean fuels and technology	90	60.00
2.3.3 ICT use and government efficiency	70	40.98			
2.3.4 R&D expenditure by governments and higher education	55	30.40			

* Confidential data

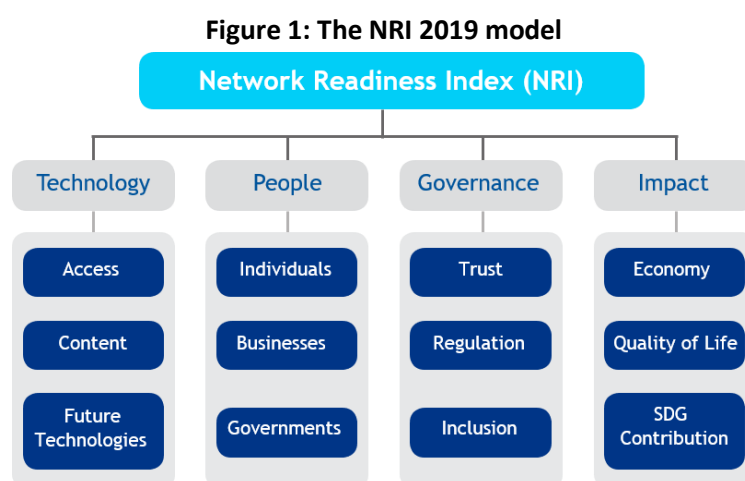
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Network Readiness Index 2019

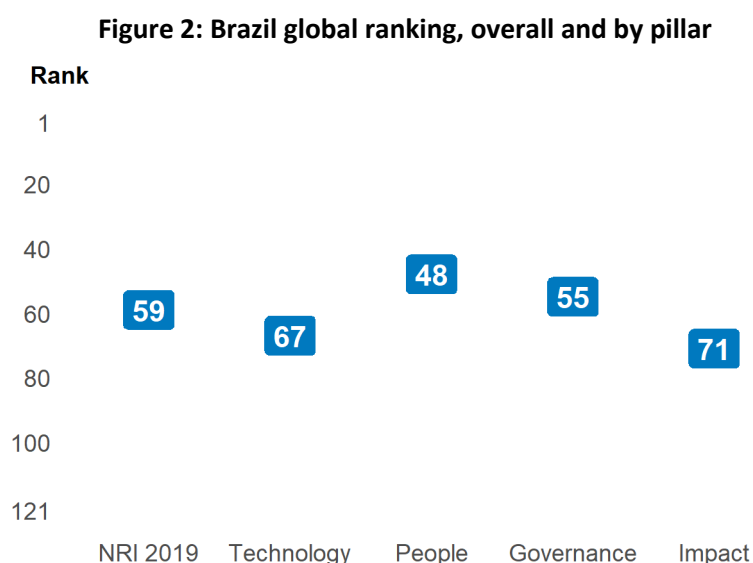
Brazil

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Brazil

Brazil ranks 59th out of the 121 economies included in the NRI 2019 (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 Brazil relate to Governments, Inclusion and Trust, 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.

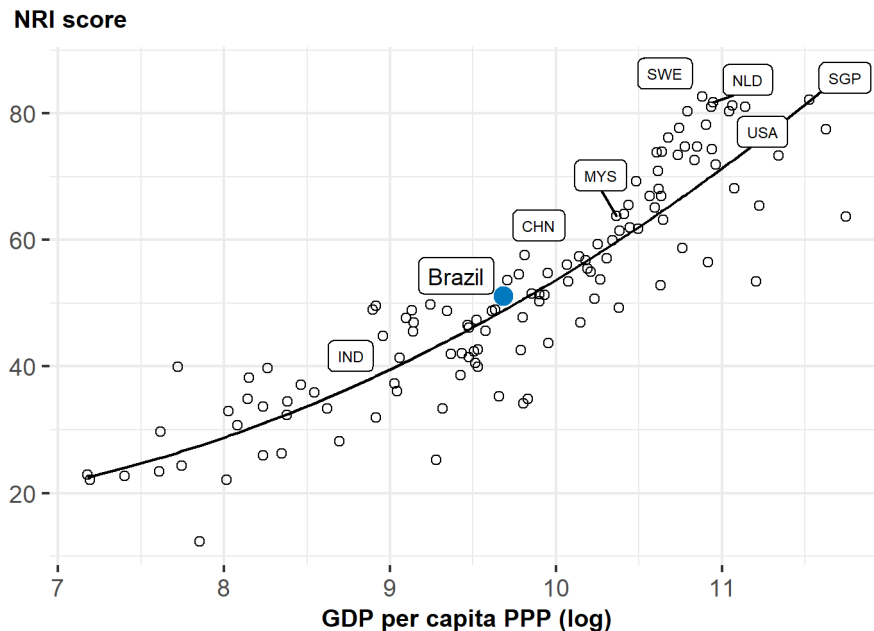
Table 1: Brazil rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	27	SDG Contribution	60
Inclusion	40	Access	72
Trust	50	Individuals	72
Businesses	53	Regulation	89
Content	59	Future Technologies	95
Economy	59	Quality of Life	97

NRI score and income

Figure 3 shows the position of Brazil 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, Brazil 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Brazil belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Brazil is ranked 13th 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 eight of the twelve sub-pillars: Access, Content, Businesses, Governments, Trust, Inclusion, Economy and SDG Contribution.

The Americas

Brazil is ranked 8th within The Americas (Figure 4, right panel). It has a score above the regional average in three of the four pillars: Score, Technology, People and Governance. With regard to sub-pillars, it outperforms the average in The Americas in eight of the twelve sub-pillars: Access, Content, Businesses, Governments, Trust, Inclusion, Economy and SDG Contribution.

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



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

Dimension	Brazil	Upper-middle-income countries	The Americas
NRI	51.07	47.40	49.08
Technology	43.39	42.66	43.12
People	48.02	41.07	43.32
Governance	62.79	56.24	57.13
Impact	50.08	49.62	52.73

Strongest and weakest indicators

The indicators where Brazil performs particularly well include Use of clean fuels and technology, E-Participation, and Publication and use of open data (Table 3). By contrast, the economy's weakest indicators include Government procurement of advanced technology products, Income inequality, and Ease of doing business.

Table 3: Top-ranked and bottom-ranked indicators of Brazil

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	International Internet bandwidth	80
E-Participation	12	Road safety	86
Publication and use of open data	18	Regulatory quality	90
Online trust and safety	19	Freedom to make life choices	90
Government online services	22	Handset prices	94
Pollution	23	ICT use and government efficiency	95
Gender gap in internet use	27	Legal framework's adaptability to digital business models	95
Rural gap in use of digital payments	29	Ease of doing business	100
Intellectual property receipts	31	Income inequality	102
Maths proficiency in schools	31	Government procurement of advanced technology products	104

NRI 2019 At-A-Glance: Brazil

Network Readiness Index

Rank: 59 (out of 121)

Score: 51.07

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	67	43.39	C. Governance pillar	55	62.79
1st sub-pillar: Access	72	60.11	1st sub-pillar: Trust	50	61.69
2nd sub-pillar: Content	59	47.85	2nd sub-pillar: Regulation	89	54.81
3rd sub-pillar: Future Technologies	95	22.22	3rd sub-pillar: Inclusion	40	71.86
B. People pillar	48	48.02	D. Impact pillar	71	50.08
1st sub-pillar: Individuals	72	51.83	1st sub-pillar: Economy	59	22.17
2nd sub-pillar: Businesses	53	32.02	2nd sub-pillar: Quality of Life	97	51.21
3rd sub-pillar: Governments	27	60.21	3rd sub-pillar: SDG Contribution	60	76.85

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	52	68.61	3.1.1 Rule of law	76	47.00
1.1.2 Handset prices	94	32.70	3.1.2 Software piracy rate	36	58.11
1.1.3 Internet access	72	58.13	3.1.3 Secure Internet servers	53	65.00
1.1.4 4G mobile network coverage	75	83.05	3.1.4 Cybersecurity	71	61.18
1.1.5 Fixed-broadband subscriptions	69	52.04	3.1.5 Online trust and safety	19	77.17
1.1.6 International Internet bandwidth	80	64.33	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	38	61.89	3.2.1 Regulatory quality	90	44.51
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	100	51.03
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	95	31.15
1.2.2 Mobile apps development	49	67.09	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	31	1.67	3.2.5 Social safety net protection	74	37.42
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	34	89.77
1.3.1 Availability of latest technologies	74	46.23	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	65	33.79	3.3.1 E-Participation	12	96.81
1.3.3 Government procurement of advanced technology products	104	24.24	3.3.2 Socioeconomic gap in use of digital payments	77	58.01
1.3.4 ICT PCT patent applications	54	6.90	3.3.3 Availability of local online content	42	63.28
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	27	65.94
1.3.6 Robot density	43	4.01	3.3.5 Rural gap in use of digital payments	29	75.26
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	67	64.18	4.1.1 Medium and high-tech industry	39	45.11
2.1.2 Active mobile-broadband subscriptions	44	33.65	4.1.2 High-tech exports	35	24.54
2.1.3 Use of virtual social networks	35	65.70	4.1.3 PCT patent applications	54	0.94
2.1.4 Tertiary enrolment	56	37.21	4.1.4 Labour productivity per employee	74	18.08
2.1.5 Adult literacy rate	57	89.54	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	51	20.72	4.2.1 Happiness	43	65.27
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	90	51.41
2.2.1 Firms with website	63	45.95	4.2.3 Income inequality	102	25.53
2.2.2 Internet shopping	63	18.19	4.2.4 Healthy life expectancy at birth	69	62.64
2.2.3 Professionals	61	27.43	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	64	32.73	4.3.1 Access to basic services	71	91.09
2.2.5 Extent of staff training	68	35.81	4.3.2 Pollution	23	93.50
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	86	46.88
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	41	66.50
2.3.1 Government online services	22	91.54	4.3.5 Maths proficiency in schools	31	63.13
2.3.2 Publication and use of open data	18	58.86	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	95	30.23			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

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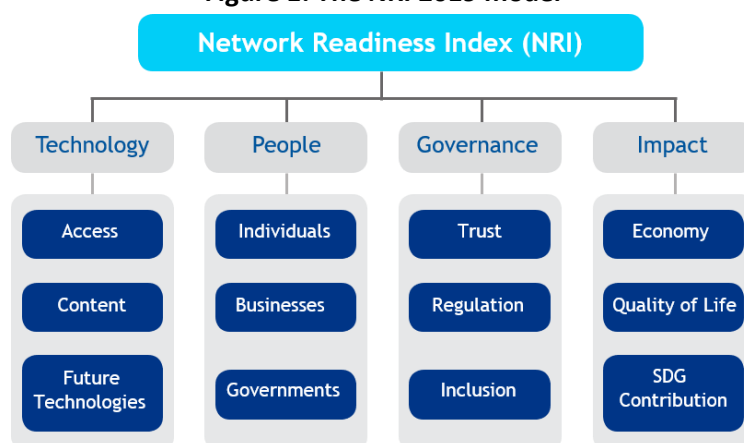
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Network Readiness Index 2019

Bulgaria

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

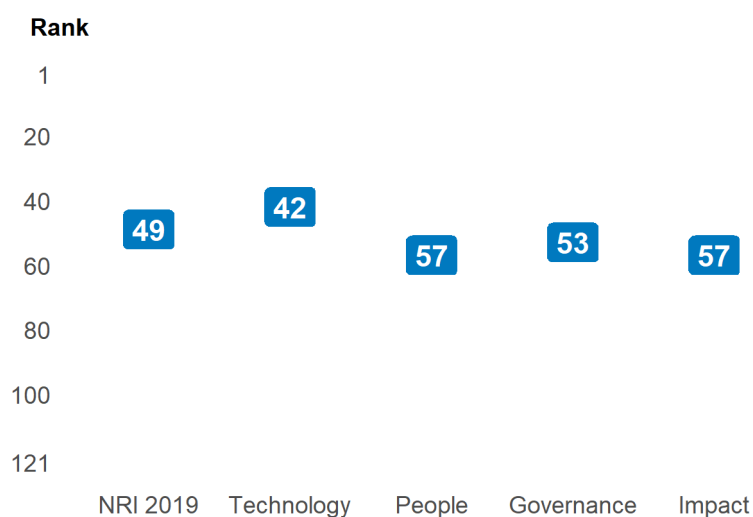
Figure 1: The NRI 2019 model



Global NRI position of Bulgaria

Bulgaria ranks 49th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns People and Impact.

Figure 2: Bulgaria global ranking, overall and by pillar



Performance at sub-pillar level

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

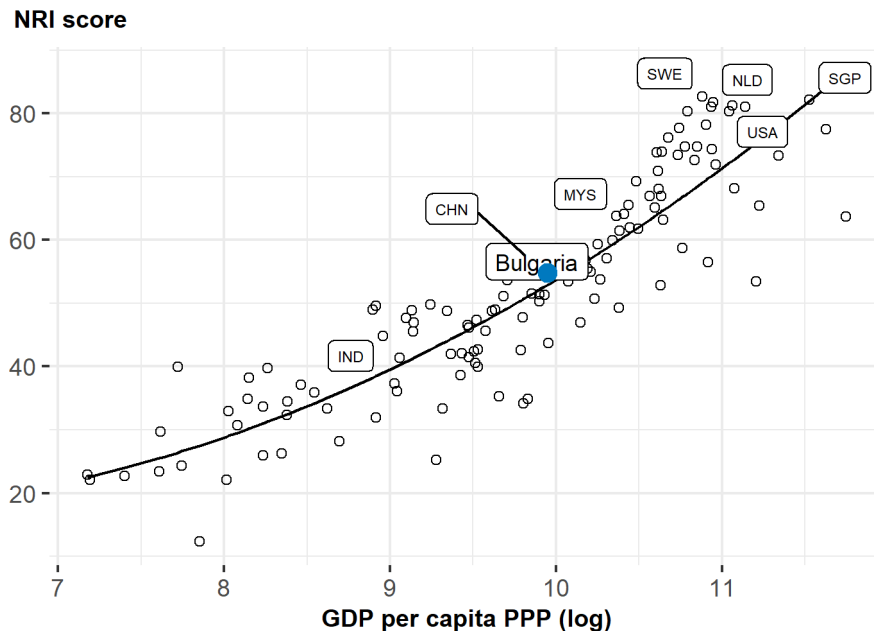
Table 1: Bulgaria rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	30	Individuals	55
SDG Contribution	42	Governments	62
Trust	47	Economy	62
Access	50	Inclusion	67
Businesses	52	Future Technologies	68
Regulation	53	Quality of Life	84

NRI score and income

Figure 3 shows the position of Bulgaria 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, Bulgaria 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Bulgaria belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Upper-middle-income countries

Bulgaria is ranked 5th 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 Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

Europe

Bulgaria is ranked 32nd within Europe (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 Bulgaria against its income group and region, overall and by pillar

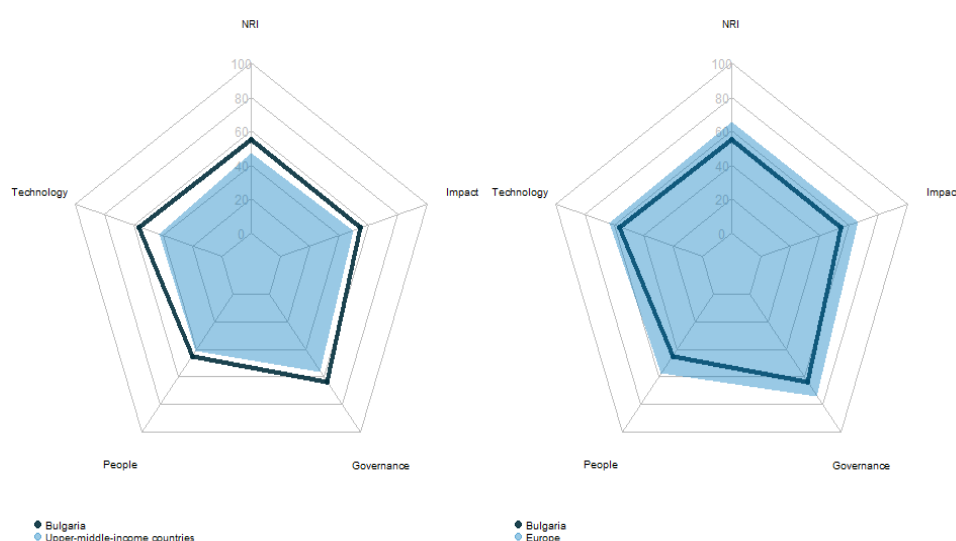


Table 2: Bulgaria scores vs. averages of its income group and region, overall and by pillar

Dimension	Bulgaria	Upper-middle-income countries	Europe
NRI	54.77	47.40	65.20
Technology	56.11	42.66	63.08
People	45.06	41.07	57.50
Governance	63.54	56.24	73.99
Impact	54.37	49.62	66.24

Strongest and weakest indicators

The indicators where Bulgaria performs particularly well include E-commerce legislation, Fixed-broadband subscriptions, and International Internet bandwidth (Table 3). By contrast, the economy's weakest indicators include Extent of staff training, Freedom to make life choices, and Handset prices.

Table 3: Top-ranked and bottom-ranked indicators of Bulgaria

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Internet users	73
Fixed-broadband subscriptions	10	Legal framework's adaptability to digital business models	73
International Internet bandwidth	11	Access to basic services	73
Secure Internet servers	12	Social safety net protection	81
4G mobile network coverage	16	Rural gap in use of digital payments	81
ICT regulatory environment	25	Socioeconomic gap in use of digital payments	86
Tertiary enrolment	26	Happiness	88
Adult literacy rate	26	Handset prices	93
Active mobile-broadband subscriptions	27	Freedom to make life choices	98
Mobile apps development	28	Extent of staff training	107

NRI 2019 At-A-Glance: Bulgaria

Network Readiness Index

Rank: 49 (out of 121)

Score: 54.77

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	42	56.11	C. Governance pillar	53	63.54
1st sub-pillar: Access	50	74.03	1st sub-pillar: Trust	47	62.38
2nd sub-pillar: Content	30	65.08	2nd sub-pillar: Regulation	53	67.15
3rd sub-pillar: Future Technologies	68	29.21	3rd sub-pillar: Inclusion	67	61.10
B. People pillar	57	45.06	D. Impact pillar	57	54.37
1st sub-pillar: Individuals	55	57.09	1st sub-pillar: Economy	62	21.39
2nd sub-pillar: Businesses	52	32.73	2nd sub-pillar: Quality of Life	84	54.83
3rd sub-pillar: Governments	62	45.36	3rd sub-pillar: SDG Contribution	42	86.88

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	62	64.87	3.1.1 Rule of law	62	52.66
1.1.2 Handset prices	93	33.06	3.1.2 Software piracy rate	52	43.24
1.1.3 Internet access	60	70.27	3.1.3 Secure Internet servers	12	90.02
1.1.4 4G mobile network coverage	16	99.71	3.1.4 Cybersecurity	48	76.97
1.1.5 Fixed-broadband subscriptions	10	97.71	3.1.5 Online trust and safety	66	49.01
1.1.6 International Internet bandwidth	11	78.57	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	42	64.11
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	57	73.84
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	73	38.90
1.2.2 Mobile apps development	28	80.12	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	42	0.93	3.2.5 Social safety net protection	81	32.80
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	25	93.25
1.3.1 Availability of latest technologies	66	51.66	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	50	42.09	3.3.1 E-Participation	35	85.35
1.3.3 Government procurement of advanced technology products	59	42.07	3.3.2 Socioeconomic gap in use of digital payments	86	50.14
1.3.4 ICT PCT patent applications	48	9.81	3.3.3 Availability of local online content	59	55.19
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	50	59.35
1.3.6 Robot density	45	2.34	3.3.5 Rural gap in use of digital payments	81	55.45
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	73	61.19	4.1.1 Medium and high-tech industry	50	37.85
2.1.2 Active mobile-broadband subscriptions	27	39.47	4.1.2 High-tech exports	45	19.17
2.1.3 Use of virtual social networks	61	53.22	4.1.3 PCT patent applications	46	2.07
2.1.4 Tertiary enrolment	26	51.87	4.1.4 Labour productivity per employee	59	26.48
2.1.5 Adult literacy rate	26	97.49	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	44	39.28	4.2.1 Happiness	88	42.52
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	98	45.32
2.2.1 Firms with website	62	47.38	4.2.3 Income inequality	60	67.37
2.2.2 Internet shopping	48	27.91	4.2.4 Healthy life expectancy at birth	60	64.10
2.2.3 Professionals	37	42.67	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	53	40.67	4.3.1 Access to basic services	73	90.18
2.2.5 Extent of staff training	107	24.01	4.3.2 Pollution	61	85.23
2.2.6 R&D expenditure by businesses	38	13.74	4.3.3 Road safety	45	76.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	54	73.85	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	41	37.14	4.3.6 Use of clean fuels and technology	70	95.56
2.3.3 ICT use and government efficiency	46	51.15			
2.3.4 R&D expenditure by governments and higher education	71	19.31			

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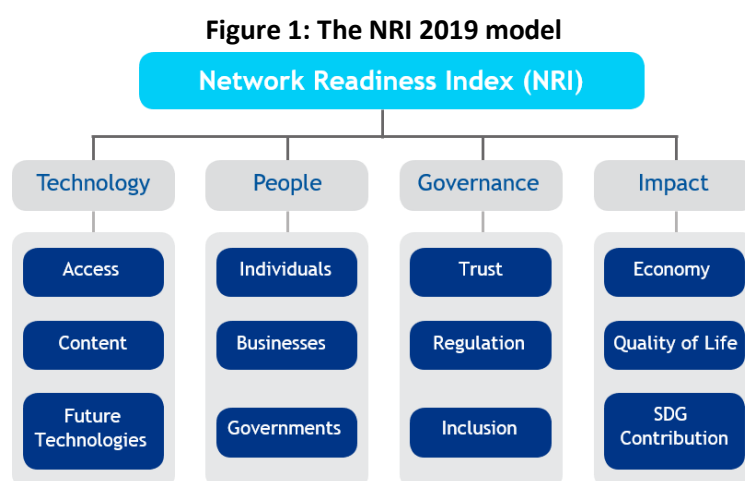
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Network Readiness Index 2019

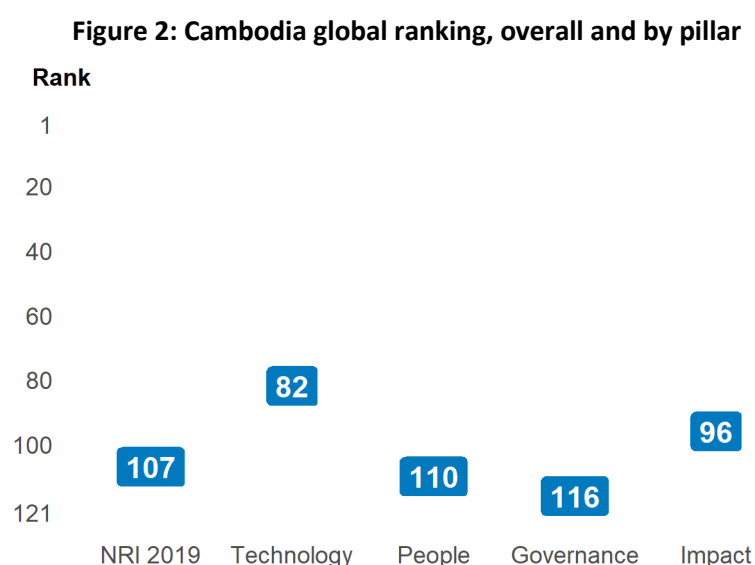
Cambodia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Cambodia

Cambodia ranks 107th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

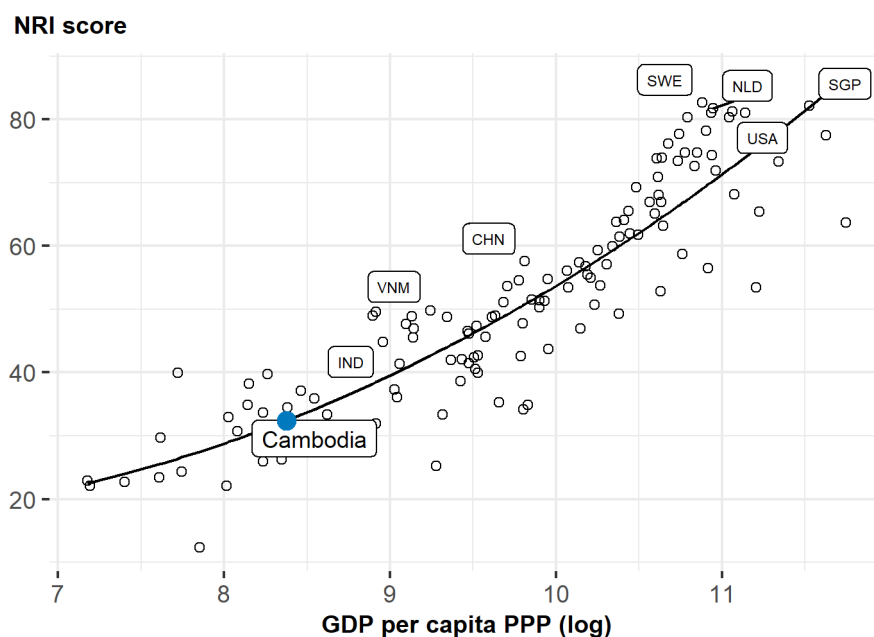
Table 1: Cambodia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	60	Inclusion	103
Future Technologies	67	Governments	113
Access	75	Regulation	113
Individuals	98	Businesses	118
SDG Contribution	99	Trust	119
Content	101	Economy	119

NRI score and income

Figure 3 shows the position of Cambodia 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, Cambodia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Cambodia belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

Cambodia is ranked 19th 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: Technology. At the sub-pillar level, it outperforms lower-middle-income countries in three of the twelve sub-pillars: Access, Future Technology and Quality of Life.

Asia & Pacific

Cambodia is ranked 20th 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 Cambodia against its income group and region, overall and by pillar



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

Dimension	Cambodia	Lower-middle-income countries	Asia & Pacific
NRI	32.29	37.18	52.44
Technology	36.24	32.15	48.56
People	21.28	30.04	44.85
Governance	32.92	46.17	61.84
Impact	38.71	40.35	54.50

Strongest and weakest indicators

The indicators where Cambodia performs particularly well include Freedom to make life choices, Gender gap in internet use, and Fixed-broadband subscriptions (Table 3). By contrast, the economy's weakest indicators include Medium and high-tech industry, E-Participation, Rule of law, and E-commerce legislation.

Table 3: Top-ranked and bottom-ranked indicators of Cambodia

Strongest indicators	Rank	Weakest indicators	Rank
Freedom to make life choices	2	Professionals	106
Gender gap in internet use	20	Use of clean fuels and technology	106
Fixed-broadband subscriptions	41	Ease of doing business	111
Company investment in emerging technology	54	Cybersecurity	113
Active mobile-broadband subscriptions	55	Technicians and associate professionals	114
ICT skills	57	Government online services	116
Extent of staff training	65	Rule of law	117
Use of virtual social networks	69	E-commerce legislation	117
Legal framework's adaptability to digital business models	69	E-Participation	118
International Internet bandwidth	72	Medium and high-tech industry	119

NRI 2019 At-A-Glance: Cambodia

Network Readiness Index

Rank: 107 (out of 121)

Score: 32.29

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	82	36.24	C. Governance pillar	116	32.92
1st sub-pillar: Access	75	58.00	1st sub-pillar: Trust	119	20.23
2nd sub-pillar: Content	101	21.37	2nd sub-pillar: Regulation	113	34.59
3rd sub-pillar: Future Technologies	67	29.33	3rd sub-pillar: Inclusion	103	43.93
B. People pillar	110	21.28	D. Impact pillar	96	38.71
1st sub-pillar: Individuals	98	34.07	1st sub-pillar: Economy	119	2.16
2nd sub-pillar: Businesses	118	9.70	2nd sub-pillar: Quality of Life	60	62.03
3rd sub-pillar: Governments	113	20.06	3rd sub-pillar: SDG Contribution	99	51.95

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	87	49.89	3.1.1 Rule of law	117	27.91
1.1.2 Handset prices	100	29.07	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	85	35.99	3.1.3 Secure Internet servers	100	37.46
1.1.4 4G mobile network coverage	78	80.30	3.1.4 Cybersecurity	113	15.57
1.1.5 Fixed-broadband subscriptions	41	85.21	3.1.5 Online trust and safety	88	0.00
1.1.6 International Internet bandwidth	72	67.57	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	98	40.29
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	111	41.76
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	69	40.83
1.2.2 Mobile apps development	91	46.55	3.2.4 E-commerce legislation	117	0.00
1.2.3 Intellectual property receipts	85	0.06	3.2.5 Social safety net protection	104	21.71
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	104	62.93
1.3.1 Availability of latest technologies	86	41.39	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	54	39.10	3.3.1 E-Participation	118	6.37
1.3.3 Government procurement of advanced technology products	72	36.85	3.3.2 Socioeconomic gap in use of digital payments	84	50.34
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	77	43.24
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	20	66.71
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	89	52.97
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	95	33.61	4.1.1 Medium and high-tech industry	119	0.00
2.1.2 Active mobile-broadband subscriptions	55	31.48	4.1.2 High-tech exports	99	3.51
2.1.3 Use of virtual social networks	69	50.10	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	97	9.07	4.1.4 Labour productivity per employee	99	2.96
2.1.5 Adult literacy rate	76	69.85	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	57	10.30	4.2.1 Happiness	87	43.00
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	2	99.51
2.2.1 Firms with website	103	7.27	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	98	3.88	4.2.4 Healthy life expectancy at birth	97	43.59
2.2.3 Professionals	106	6.95	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	114	3.28	4.3.1 Access to basic services	103	58.94
2.2.5 Extent of staff training	65	36.44	4.3.2 Pollution	78	79.40
2.2.6 R&D expenditure by businesses	81	0.40	4.3.3 Road safety	78	52.81
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	116	16.93	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	106	16.67
2.3.3 ICT use and government efficiency	76	39.19			
2.3.4 R&D expenditure by governments and higher education	101	4.07			

* Confidential data

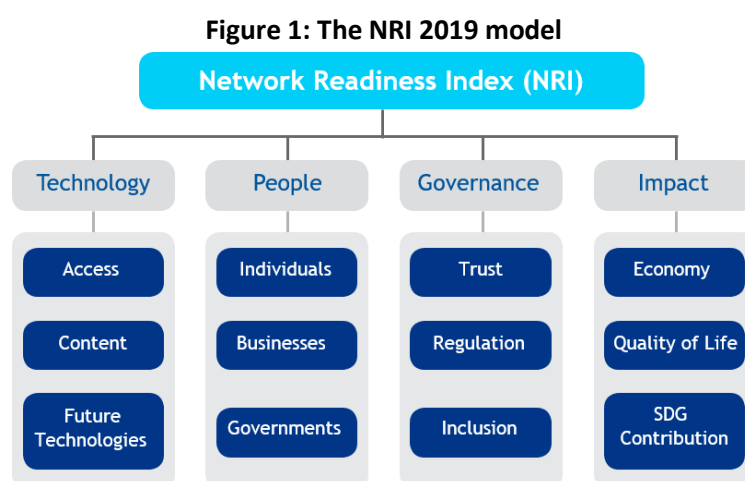
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Network Readiness Index 2019

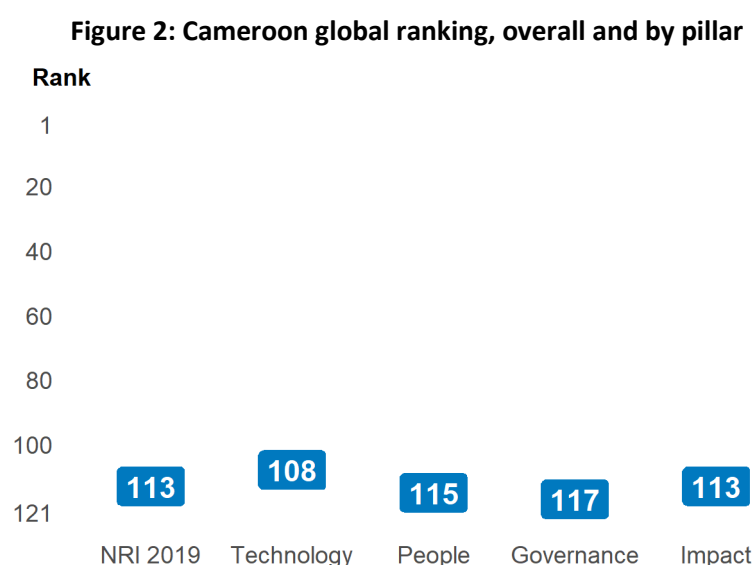
Cameroon

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Cameroon

Cameroon ranks 113th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

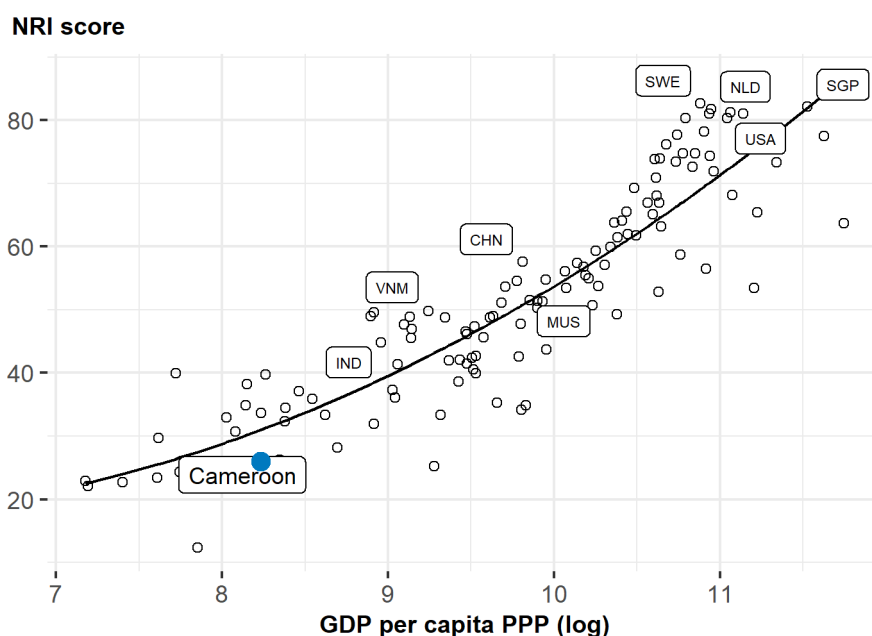
Table 1: Cameroon rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	76	Businesses	111
Access	93	Economy	111
Quality of Life	105	SDG Contribution	114
Governments	107	Content	116
Regulation	107	Trust	117
Individuals	110	Inclusion	117

NRI score and income

Figure 3 shows the position of Cameroon 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, Cameroon 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Cameroon belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region — Africa — is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries

Cameroon is ranked 23rd in the group of lower-middle-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 outperforms lower-middle-income countries in one of the twelve sub-pillars: Future Technology.

Africa

Cameroon is ranked 13th within Africa (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 Africa in two of the twelve sub-pillars: Access and Quality of Life.

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



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

Dimension	Cameroon	Lower-middle-income countries	Africa
NRI	25.94	37.18	31.07
Technology	25.80	32.15	26.03
People	18.82	30.04	23.76
Governance	32.63	46.17	45.32
Impact	26.50	40.35	29.15

Strongest and weakest indicators

The indicators where Cameroon performs particularly well include Maths proficiency in schools, Computer software spending, and Reading proficiency in schools (Table 3). By contrast, the economy's weakest indicators include Secure Internet servers, Digital participation and content creation, International Internet bandwidth, Ease of doing business, and Healthy life expectancy at birth.

Table 3: Top-ranked and bottom-ranked indicators of Cameroon

Strongest indicators	Rank	Weakest indicators	Rank
Maths proficiency in schools	37	Active mobile-broadband subscriptions	113
Computer software spending	59	Access to basic services	113
Reading proficiency in schools	64	Road safety	113
E-commerce legislation	66	Pollution	115
Freedom to make life choices	67	Rule of law	116
Government procurement of advanced technology products	71	International Internet bandwidth	117
Handset prices	73	Ease of doing business	117
Legal framework's adaptability to digital business models	77	Healthy life expectancy at birth	117
High-tech exports	79	Digital participation and content creation	118
Adult literacy rate	80	Secure Internet servers	119

NRI 2019 At-A-Glance: Cameroon

Network Readiness Index

Rank: 113 (out of 121)

Score: 25.94

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	108	25.80	C. Governance pillar	117	32.63
1st sub-pillar: Access	93	42.02	1st sub-pillar: Trust	117	25.60
2nd sub-pillar: Content	116	7.60	2nd sub-pillar: Regulation	107	43.31
3rd sub-pillar: Future Technologies	76	27.79	3rd sub-pillar: Inclusion	117	28.99
B. People pillar	115	18.82	D. Impact pillar	113	26.50
1st sub-pillar: Individuals	110	21.42	1st sub-pillar: Economy	111	7.06
2nd sub-pillar: Businesses	111	12.11	2nd sub-pillar: Quality of Life	105	40.88
3rd sub-pillar: Governments	107	22.94	3rd sub-pillar: SDG Contribution	114	31.56

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	100	39.53	3.1.1 Rule of law	116	28.71
1.1.2 Handset prices	73	41.76	3.1.2 Software piracy rate	83	12.16
1.1.3 Internet access	105	16.46	3.1.3 Secure Internet servers	119	13.68
1.1.4 4G mobile network coverage	92	65.48	3.1.4 Cybersecurity	88	45.29
1.1.5 Fixed-broadband subscriptions	NA	NA	3.1.5 Online trust and safety	85	28.16
1.1.6 International Internet bandwidth	117	46.87	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	110	33.81
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	117	28.06
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	77	38.28
1.2.2 Mobile apps development	111	25.74	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	83	0.07	3.2.5 Social safety net protection	101	23.31
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	105	61.39
1.3.1 Availability of latest technologies	109	28.41	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	83	27.59	3.3.1 E-Participation	110	23.56
1.3.3 Government procurement of advanced technology products	71	36.99	3.3.2 Socioeconomic gap in use of digital payments	101	40.99
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	103	24.45
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	84	14.60
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	104	41.37
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	110	14.92	4.1.1 Medium and high-tech industry	101	9.44
2.1.2 Active mobile-broadband subscriptions	113	7.24	4.1.2 High-tech exports	79	9.30
2.1.3 Use of virtual social networks	108	11.64	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	99	8.79	4.1.4 Labour productivity per employee	103	2.43
2.1.5 Adult literacy rate	80	64.49	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	80	45.69
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	67	66.62
2.2.1 Firms with website	104	5.19	4.2.3 Income inequality	92	43.16
2.2.2 Internet shopping	102	3.51	4.2.4 Healthy life expectancy at birth	117	8.06
2.2.3 Professionals	100	11.32	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	101	11.76	4.3.1 Access to basic services	113	33.69
2.2.5 Extent of staff training	93	28.79	4.3.2 Pollution	115	32.81
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	113	14.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	64	29.06
2.3.1 Government online services	104	40.00	4.3.5 Maths proficiency in schools	37	57.21
2.3.2 Publication and use of open data	95	5.15	4.3.6 Use of clean fuels and technology	104	22.22
2.3.3 ICT use and government efficiency	100	23.67			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

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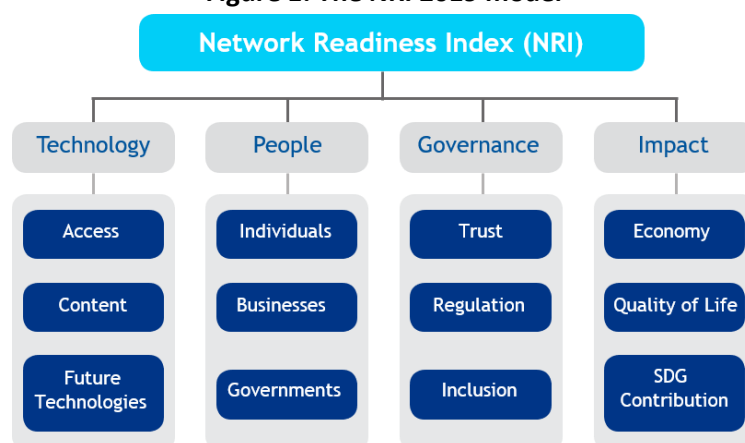
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Network Readiness Index 2019

Canada

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

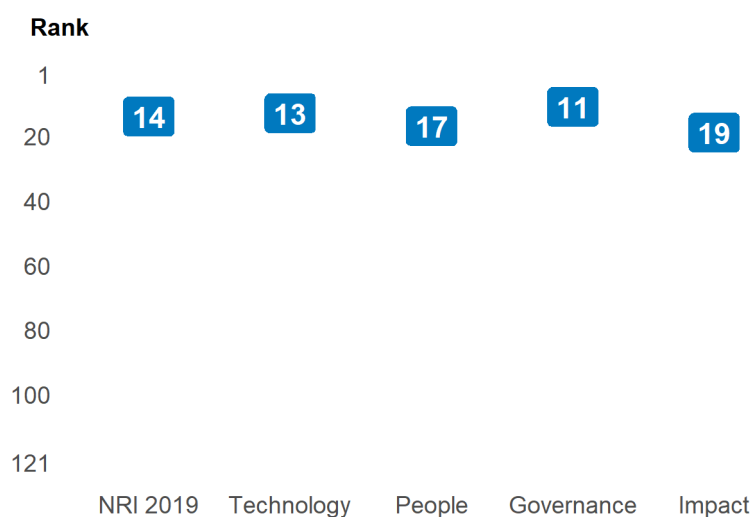
Figure 1: The NRI 2019 model



Global NRI position of Canada

Canada ranks 14th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Canada global ranking, overall and by pillar



Performance at sub-pillar level

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

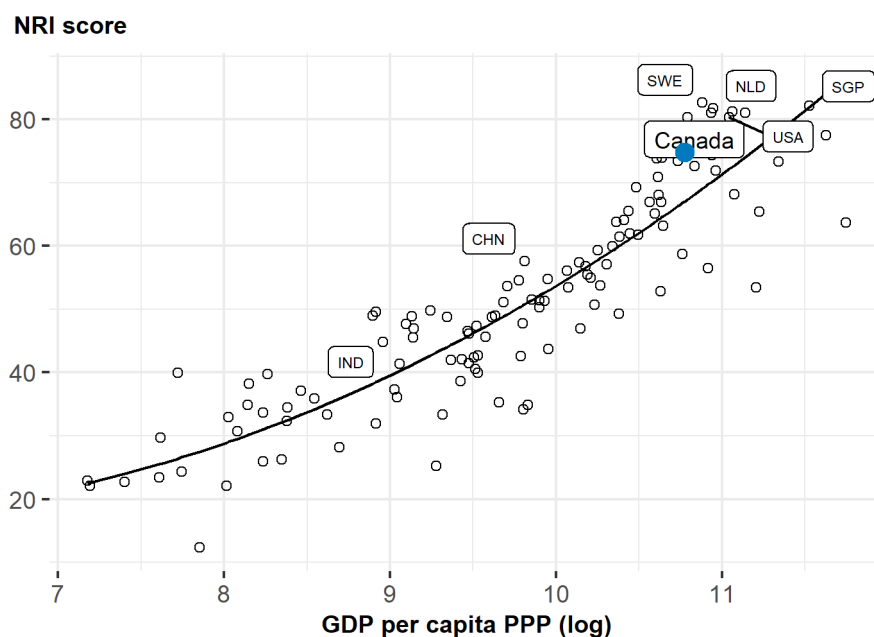
Table 1: Canada rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Inclusion	3	Future Technologies	17
Governments	10	Businesses	18
Quality of Life	10	SDG Contribution	27
Content	13	Access	28
Trust	14	Economy	29
Regulation	15	Individuals	47

NRI score and income

Figure 3 shows the position of Canada 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, Canada 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Canada belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

High-income countries

Canada is ranked 14th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in nine of the twelve sub-pillars: Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

The Americas

Canada is ranked 2nd within The Americas (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

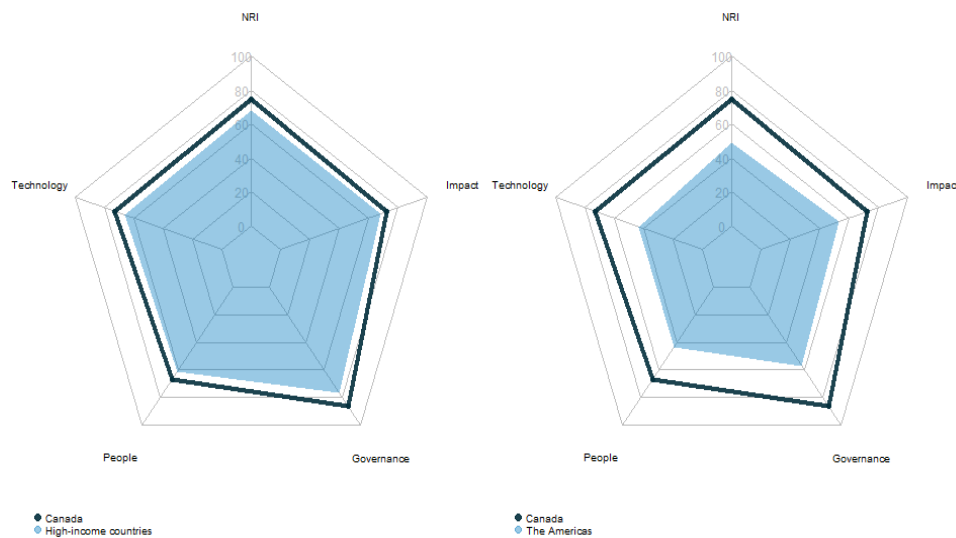


Table 2: Canada scores vs. averages of its income group and region, overall and by pillar

Dimension	Canada	High-income countries	The Americas
NRI	74.72	68.12	49.08
Technology	73.13	66.07	43.12
People	67.20	61.07	43.32
Governance	86.39	77.07	57.13
Impact	72.14	68.29	52.73

Strongest and weakest indicators

The indicators where Canada performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Publication and use of open data (Table 3). By contrast, the economy's weakest indicators include Active mobile-broadband subscriptions, Government procurement of advanced technology products, Online trust and safety, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of Canada

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Access to basic services	33
Use of clean fuels and technology	1	Fixed-broadband subscriptions	39
Publication and use of open data	2	Mobile tariffs	40
Socioeconomic gap in use of digital payments	3	Income inequality	43
Computer software spending	4	International Internet bandwidth	46
Freedom to make life choices	4	Medium and high-tech industry	47
Pollution	5	Online trust and safety	56
Healthy life expectancy at birth	7	ICT regulatory environment	56
Digital participation and content creation	8	Government procurement of advanced technology products	61
Internet shopping	9	Active mobile-broadband subscriptions	63

NRI 2019 At-A-Glance: Canada

Network Readiness Index

Rank: 14 (out of 121)

Score: 74.72

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	13	73.13	C. Governance pillar	11	86.39
1st sub-pillar: Access	28	81.47	1st sub-pillar: Trust	14	84.97
2nd sub-pillar: Content	13	76.29	2nd sub-pillar: Regulation	15	86.09
3rd sub-pillar: Future Technologies	17	61.63	3rd sub-pillar: Inclusion	3	88.12
B. People pillar	17	67.20	D. Impact pillar	19	72.14
1st sub-pillar: Individuals	47	59.06	1st sub-pillar: Economy	29	36.95
2nd sub-pillar: Businesses	18	63.12	2nd sub-pillar: Quality of Life	10	86.93
3rd sub-pillar: Governments	10	79.42	3rd sub-pillar: SDG Contribution	27	92.53

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	40	72.45	3.1.1 Rule of law	12	93.72
1.1.2 Handset prices	17	69.66	3.1.2 Software piracy rate	13	90.54
1.1.3 Internet access	16	90.65	3.1.3 Secure Internet servers	16	88.22
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	9	95.72
1.1.5 Fixed-broadband subscriptions	39	86.69	3.1.5 Online trust and safety	56	56.62
1.1.6 International Internet bandwidth	46	70.35	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	14	88.09
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	22	87.40
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	22	68.98
1.2.2 Mobile apps development	20	84.15	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	20	5.29	3.2.5 Social safety net protection	13	85.80
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	56	86.30
1.3.1 Availability of latest technologies	14	87.70	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	20	65.56	3.3.1 E-Participation	27	89.81
1.3.3 Government procurement of advanced technology products	61	41.43	3.3.2 Socioeconomic gap in use of digital payments	3	99.49
1.3.4 ICT PCT patent applications	15	60.60	3.3.3 Availability of local online content	16	86.08
1.3.5 Computer software spending	4	63.64	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	14	50.86	3.3.5 Rural gap in use of digital payments	15	77.09
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	14	90.37	4.1.1 Medium and high-tech industry	47	38.92
2.1.2 Active mobile-broadband subscriptions	63	28.98	4.1.2 High-tech exports	29	29.79
2.1.3 Use of virtual social networks	32	66.74	4.1.3 PCT patent applications	20	23.67
2.1.4 Tertiary enrolment	31	50.15	4.1.4 Labour productivity per employee	22	55.42
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	13	85.78
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	4	96.61
2.2.1 Firms with website	19	77.76	4.2.3 Income inequality	43	76.32
2.2.2 Internet shopping	9	87.95	4.2.4 Healthy life expectancy at birth	7	89.01
2.2.3 Professionals	27	48.30	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	16	73.53	4.3.1 Access to basic services	33	98.95
2.2.5 Extent of staff training	19	70.38	4.3.2 Pollution	5	99.16
2.2.6 R&D expenditure by businesses	24	20.82	4.3.3 Road safety	19	90.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	17	96.48
2.3.1 Government online services	17	92.31	4.3.5 Maths proficiency in schools	24	70.29
2.3.2 Publication and use of open data	2	89.54	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	25	66.81			
2.3.4 R&D expenditure by governments and higher education	14	69.02			

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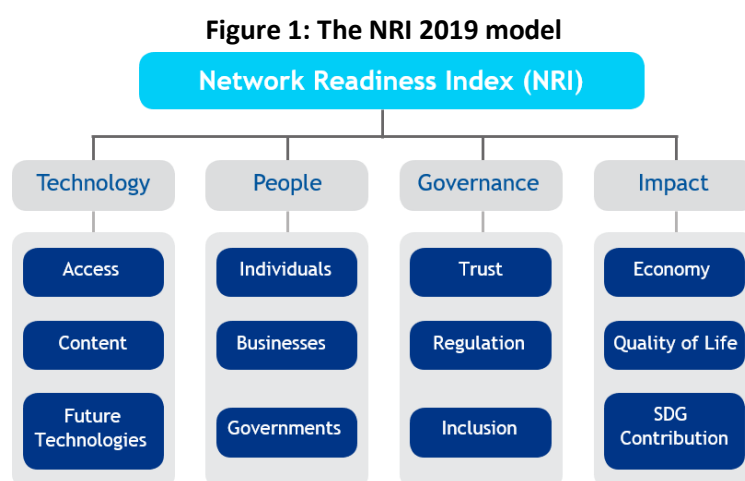
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Network Readiness Index 2019

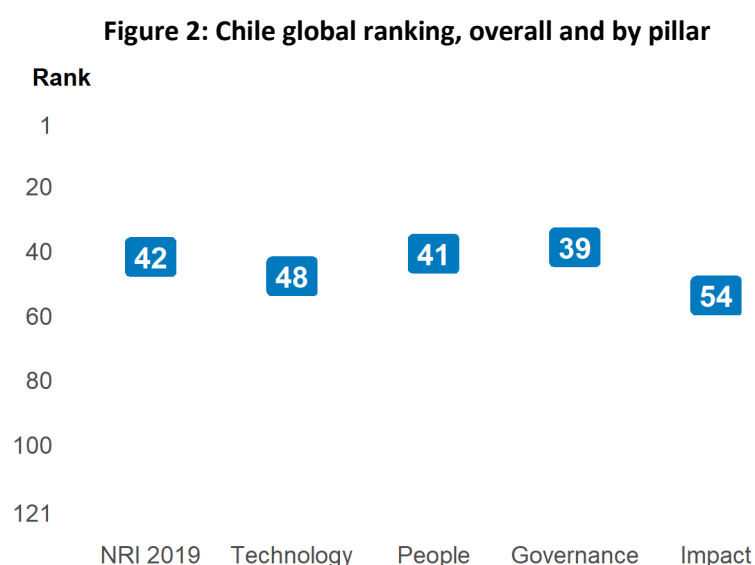
Chile

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Chile

Chile ranks 42nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

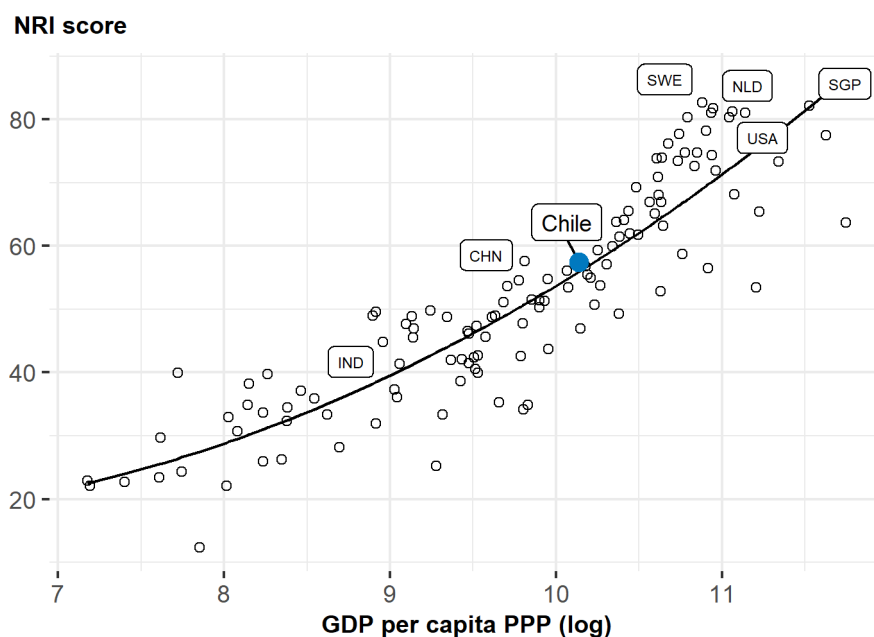
Table 1: Chile rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	21	Governments	45
Regulation	39	Inclusion	47
Businesses	41	Content	53
SDG Contribution	41	Quality of Life	58
Trust	42	Future Technologies	69
Access	43	Economy	70

NRI score and income

Figure 3 shows the position of Chile 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, Chile 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Chile belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

High-income countries

Chile is ranked 40th 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 outperforms high-income countries in one of the twelve sub-pillars: Individuals.

The Americas

Chile is ranked 3rd within The Americas (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in The Americas in ten of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion and SDG Contribution.

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

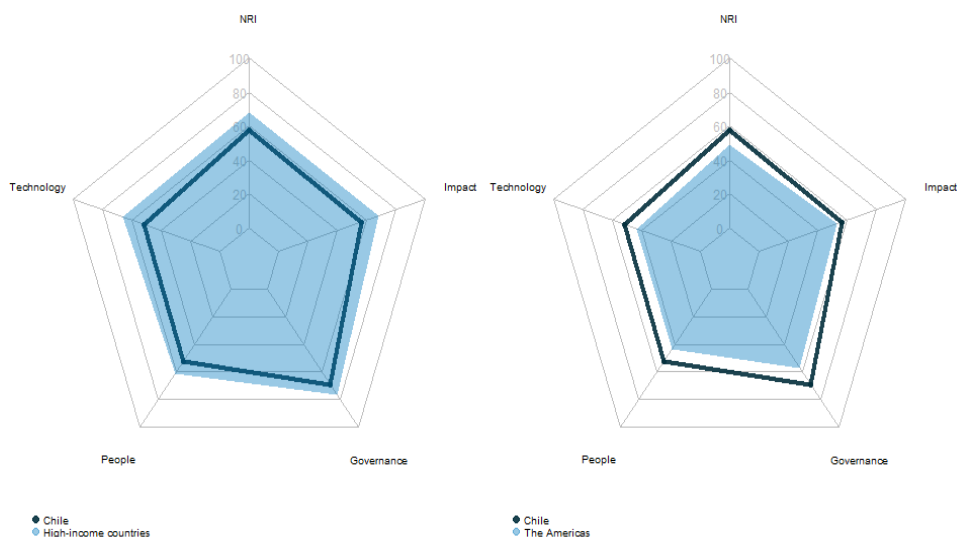


Table 2: Chile scores vs. averages of its income group and region, overall and by pillar

Dimension	Chile	High-income countries	The Americas
NRI	57.38	68.12	49.08
Technology	51.42	66.07	43.12
People	52.69	61.07	43.32
Governance	69.30	77.07	57.13
Impact	56.09	68.29	52.73

Strongest and weakest indicators

The indicators where Chile performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Tertiary enrolment (Table 3). By contrast, the economy's weakest indicators include Government procurement of advanced technology products, Income inequality, and Medium and high-tech industry.

Table 3: Top-ranked and bottom-ranked indicators of Chile

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Pollution	68
Use of clean fuels and technology	1	4G mobile network coverage	71
Tertiary enrolment	6	R&D expenditure by governments and higher education	76
Maths proficiency in schools	6	Rural gap in use of digital payments	76
Online trust and safety	11	Freedom to make life choices	77
Access to basic services	11	ICT regulatory environment	80
Use of virtual social networks	13	Cybersecurity	81
Firms with website	18	Medium and high-tech industry	83
Regulatory quality	20	Income inequality	92
Reading proficiency in schools	21	Government procurement of advanced technology products	96

NRI 2019 At-A-Glance: Chile

Network Readiness Index

Rank: 42 (out of 121)

Score: 57.38

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	48	51.42	C. Governance pillar	39	69.30
1st sub-pillar: Access	43	76.25	1st sub-pillar: Trust	42	66.68
2nd sub-pillar: Content	53	49.18	2nd sub-pillar: Regulation	39	73.17
3rd sub-pillar: Future Technologies	69	28.84	3rd sub-pillar: Inclusion	47	68.05
B. People pillar	41	52.69	D. Impact pillar	54	56.09
1st sub-pillar: Individuals	21	67.82	1st sub-pillar: Economy	70	17.63
2nd sub-pillar: Businesses	41	40.30	2nd sub-pillar: Quality of Life	58	62.48
3rd sub-pillar: Governments	45	49.94	3rd sub-pillar: SDG Contribution	41	88.17

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	65	63.29	3.1.1 Rule of law	25	78.77
1.1.2 Handset prices	25	65.32	3.1.2 Software piracy rate	48	45.95
1.1.3 Internet access	26	86.71	3.1.3 Secure Internet servers	39	76.76
1.1.4 4G mobile network coverage	71	88.00	3.1.4 Cybersecurity	81	49.45
1.1.5 Fixed-broadband subscriptions	46	80.46	3.1.5 Online trust and safety	11	82.50
1.1.6 International Internet bandwidth	26	73.74	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	20	81.00
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	55	74.91
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	36	55.61
1.2.2 Mobile apps development	60	63.16	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	66	0.35	3.2.5 Social safety net protection	49	48.71
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	80	78.77
1.3.1 Availability of latest technologies	28	74.88	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	68	33.21	3.3.1 E-Participation	46	79.61
1.3.3 Government procurement of advanced technology products	96	27.74	3.3.2 Socioeconomic gap in use of digital payments	51	75.11
1.3.4 ICT PCT patent applications	49	9.24	3.3.3 Availability of local online content	36	66.95
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	48	59.87
1.3.6 Robot density	57	0.70	3.3.5 Rural gap in use of digital payments	76	58.69
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	31	80.72	4.1.1 Medium and high-tech industry	83	22.58
2.1.2 Active mobile-broadband subscriptions	41	35.07	4.1.2 High-tech exports	67	12.09
2.1.3 Use of virtual social networks	13	77.13	4.1.3 PCT patent applications	43	2.60
2.1.4 Tertiary enrolment	6	64.55	4.1.4 Labour productivity per employee	53	33.25
2.1.5 Adult literacy rate	39	94.46	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	29	55.02	4.2.1 Happiness	29	70.38
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	77	60.19
2.2.1 Firms with website	18	78.02	4.2.3 Income inequality	92	43.16
2.2.2 Internet shopping	46	29.38	4.2.4 Healthy life expectancy at birth	30	76.19
2.2.3 Professionals	52	31.42	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	41	50.30	4.3.1 Access to basic services	11	99.89
2.2.5 Extent of staff training	47	49.15	4.3.2 Pollution	68	82.73
2.2.6 R&D expenditure by businesses	57	3.54	4.3.3 Road safety	52	69.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	21	90.74
2.3.1 Government online services	37	81.54	4.3.5 Maths proficiency in schools	6	86.28
2.3.2 Publication and use of open data	27	47.41	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	43	53.66			
2.3.4 R&D expenditure by governments and higher education	76	17.14			

* Confidential data

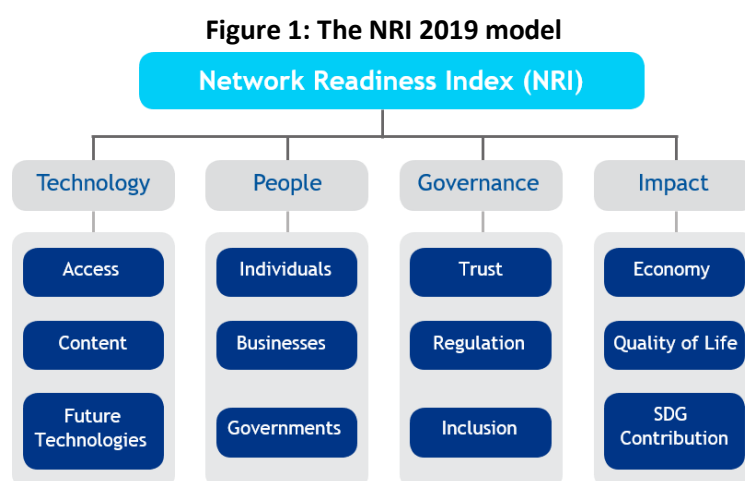
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Network Readiness Index 2019

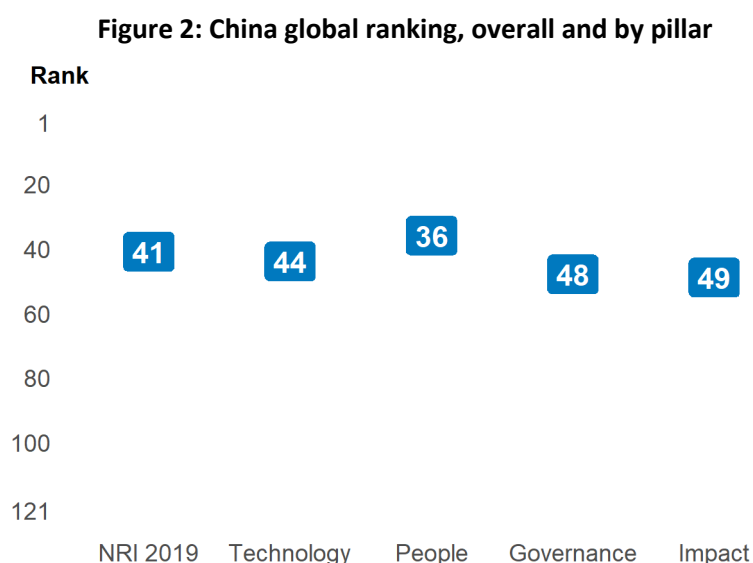
China

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of China

China ranks 41st out of the 121 economies included in the NRI 2019 (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 China relate to Businesses, Future Technologies and Economy, among others (Table 1). More could be done, though, to improve the economy's performances in the Regulation, Content and SDG Contribution sub-pillars.

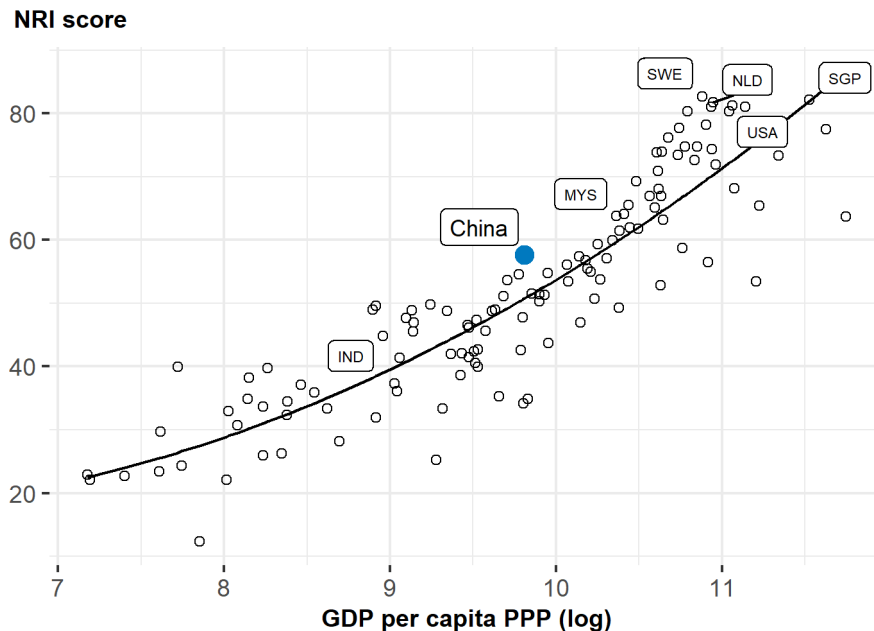
Table 1: China rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	25	Quality of Life	48
Future Technologies	26	Trust	51
Economy	32	Individuals	52
Access	42	Regulation	52
Governments	47	Content	78
Inclusion	48	SDG Contribution	78

NRI score and income

Figure 3 shows the position of China 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, China 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), IND = India (79). USA is ranked 8th. China belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Upper-middle-income countries

China is ranked 2nd 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 ten of the twelve sub-pillars: Access, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and Quality of Life.

Asia & Pacific

China is ranked 8th within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Asia & Pacific in ten of the twelve sub-pillars: Access, Future Technology, Individuals, Businesses, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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

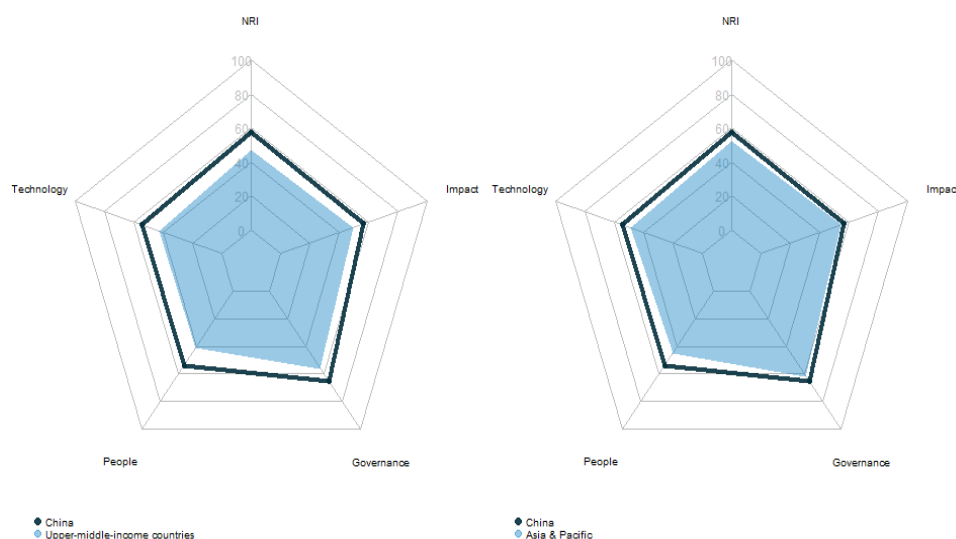


Table 2: China scores vs. averages of its income group and region, overall and by pillar

Dimension	China	Upper-middle-income countries	Asia & Pacific
NRI	57.63	47.40	52.44
Technology	54.46	42.66	48.56
People	53.89	41.07	44.85
Governance	65.42	56.24	61.84
Impact	56.73	49.62	54.50

Strongest and weakest indicators

The indicators where China performs particularly well include E-commerce legislation, Fixed-broadband subscriptions, and Maths proficiency in schools (Table 3). By contrast, the economy's weakest indicators include ICT regulatory environment, Pollution, and Use of clean fuels and technology.

Table 3: Top-ranked and bottom-ranked indicators of China

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Regulatory quality	80
Fixed-broadband subscriptions	7	International Internet bandwidth	81
Maths proficiency in schools	7	Digital participation and content creation	82
Online trust and safety	8	Road safety	83
High-tech exports	8	Happiness	86
Government procurement of advanced technology products	10	Internet users	87
R&D expenditure by businesses	12	Access to basic services	87
4G mobile network coverage	21	Use of clean fuels and technology	91
Computer software spending	21	Pollution	110
Robot density	21	ICT regulatory environment	114

NRI 2019 At-A-Glance: China

Network Readiness Index

Rank: 41 (out of 121)

Score: 57.63

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	44	54.46	C. Governance pillar	48	65.42
1st sub-pillar: Access	42	77.36	1st sub-pillar: Trust	51	60.83
2nd sub-pillar: Content	78	35.37	2nd sub-pillar: Regulation	52	67.52
3rd sub-pillar: Future Technologies	26	50.66	3rd sub-pillar: Inclusion	48	67.92
B. People pillar	36	53.89	D. Impact pillar	49	56.73
1st sub-pillar: Individuals	52	57.77	1st sub-pillar: Economy	32	34.90
2nd sub-pillar: Businesses	25	54.85	2nd sub-pillar: Quality of Life	48	66.22
3rd sub-pillar: Governments	47	49.06	3rd sub-pillar: SDG Contribution	78	69.06

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	26	79.82	3.1.1 Rule of law	69	48.74
1.1.2 Handset prices	63	46.73	3.1.2 Software piracy rate	65	31.08
1.1.3 Internet access	75	56.86	3.1.3 Secure Internet servers	68	52.05
1.1.4 4G mobile network coverage	21	99.40	3.1.4 Cybersecurity	29	88.71
1.1.5 Fixed-broadband subscriptions	7	98.47	3.1.5 Online trust and safety	8	83.56
1.1.6 International Internet bandwidth	81	63.98	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	29	96.23	3.2.1 Regulatory quality	80	48.44
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	30	84.37
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	23	68.91
1.2.2 Mobile apps development	68	58.93	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	44	0.86	3.2.5 Social safety net protection	40	59.37
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	114	44.02
1.3.1 Availability of latest technologies	75	44.95	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	33	56.31	3.3.1 E-Participation	29	89.17
1.3.3 Government procurement of advanced technology products	10	74.25	3.3.2 Socioeconomic gap in use of digital payments	76	58.25
1.3.4 ICT PCT patent applications	22	52.42	3.3.3 Availability of local online content	49	60.03
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	21	39.65	3.3.5 Rural gap in use of digital payments	67	64.25
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	87	49.53	4.1.1 Medium and high-tech industry	26	52.90
2.1.2 Active mobile-broadband subscriptions	35	36.64	4.1.2 High-tech exports	8	58.53
2.1.3 Use of virtual social networks	21	70.89	4.1.3 PCT patent applications	28	8.48
2.1.4 Tertiary enrolment	57	36.66	4.1.4 Labour productivity per employee	69	19.71
2.1.5 Adult literacy rate	38	95.14	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	86	43.20
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	30	84.93
2.2.1 Firms with website	45	61.66	4.2.3 Income inequality	68	64.21
2.2.2 Internet shopping	28	58.06	4.2.4 Healthy life expectancy at birth	35	72.53
2.2.3 Professionals	NA	NA	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	NA	NA	4.3.1 Access to basic services	87	84.47
2.2.5 Extent of staff training	33	57.78	4.3.2 Pollution	110	50.99
2.2.6 R&D expenditure by businesses	12	41.92	4.3.3 Road safety	83	51.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	30	82.28
2.3.1 Government online services	34	84.61	4.3.5 Maths proficiency in schools	7	86.18
2.3.2 Publication and use of open data	69	19.64	4.3.6 Use of clean fuels and technology	91	58.89
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	37	42.91			

* Confidential data

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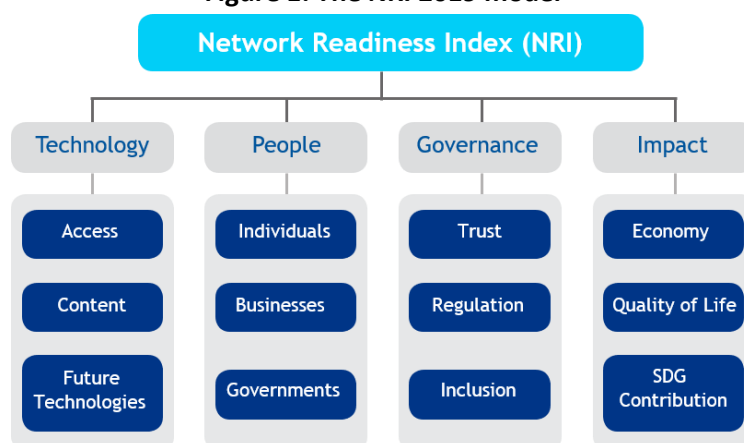
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Network Readiness Index 2019

Colombia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

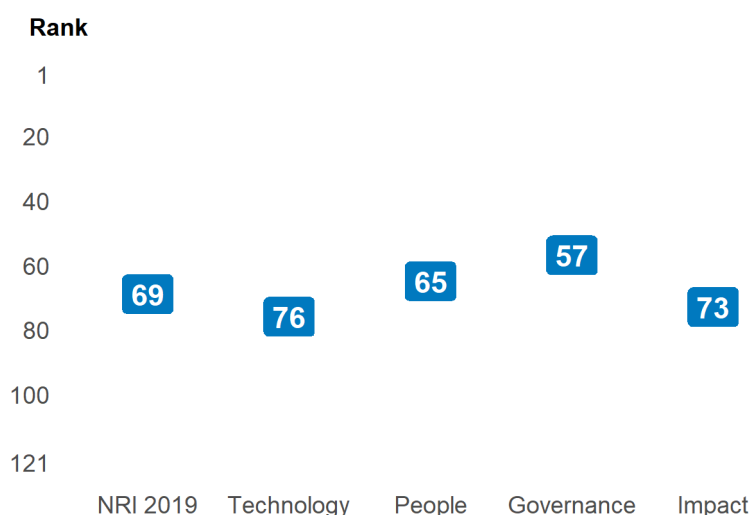
Figure 1: The NRI 2019 model



Global NRI position of Colombia

Colombia ranks 69th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Colombia global ranking, overall and by pillar



Performance at sub-pillar level

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

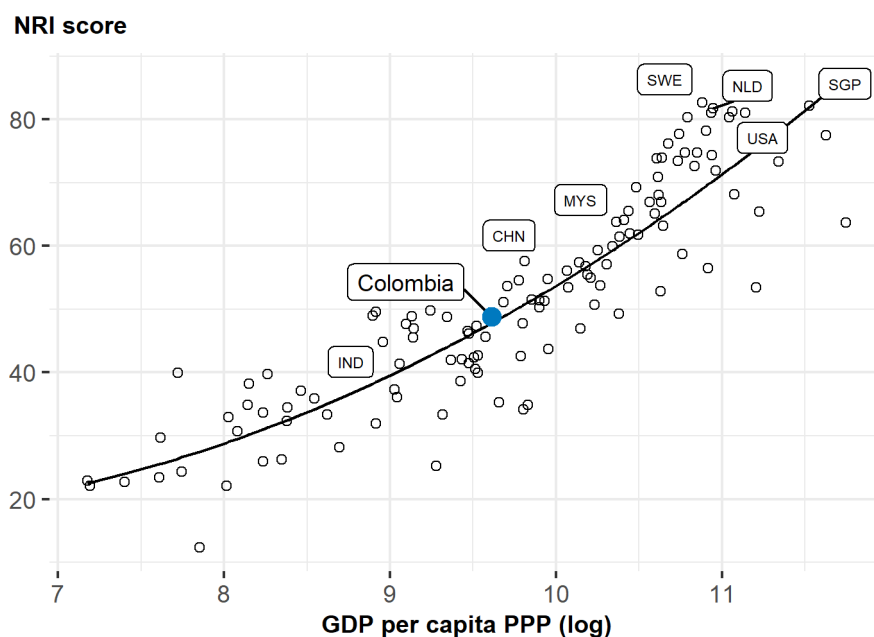
Table 1: Colombia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	50	Quality of Life	72
Trust	55	Access	74
Regulation	57	Individuals	74
SDG Contribution	63	Economy	77
Inclusion	65	Businesses	80
Content	66	Future Technologies	93

NRI score and income

Figure 3 shows the position of Colombia 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, Colombia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Colombia belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Colombia is ranked 19th 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 three of the four pillars: Score, People, Governance and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in seven of the twelve sub-pillars: Content, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

The Americas

Colombia is ranked 10th within The Americas (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Governance. With regard to sub-pillars, it outperforms the average in The Americas in five of the twelve sub-pillars: Access, Governments, Trust, Regulation and Inclusion.

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



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

Dimension	Colombia	Upper-middle-income countries	The Americas
NRI	48.77	47.40	49.08
Technology	41.51	42.66	43.12
People	41.72	41.07	43.32
Governance	61.94	56.24	57.13
Impact	49.91	49.62	52.73

Strongest and weakest indicators

The indicators where Colombia performs particularly well include E-commerce legislation, Gender gap in internet use, and International Internet bandwidth (Table 3). By contrast, the economy's weakest indicators include Professionals, Rural gap in use of digital payments, and Income inequality.

Table 3: Top-ranked and bottom-ranked indicators of Colombia

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Extent of staff training	81
Gender gap in internet use	15	Mobile apps development	84
International Internet bandwidth	16	Road safety	84
Online trust and safety	16	Rule of law	85
E-Participation	23	Mobile tariffs	88
Publication and use of open data	24	Active mobile-broadband subscriptions	93
Use of virtual social networks	30	R&D expenditure by governments and higher education	97
Government online services	30	Income inequality	98
Reading proficiency in schools	37	Rural gap in use of digital payments	100
4G mobile network coverage	38	Professionals	111

NRI 2019 At-A-Glance: Colombia

Network Readiness Index

Rank: 69 (out of 121)

Score: 48.77

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	76	41.51	C. Governance pillar	57	61.94
1st sub-pillar: Access	74	58.72	1st sub-pillar: Trust	55	58.59
2nd sub-pillar: Content	66	43.21	2nd sub-pillar: Regulation	57	65.47
3rd sub-pillar: Future Technologies	93	22.61	3rd sub-pillar: Inclusion	65	61.76
B. People pillar	65	41.72	D. Impact pillar	73	49.91
1st sub-pillar: Individuals	74	51.81	1st sub-pillar: Economy	77	15.39
2nd sub-pillar: Businesses	80	25.07	2nd sub-pillar: Quality of Life	72	59.31
3rd sub-pillar: Governments	50	48.29	3rd sub-pillar: SDG Contribution	63	75.05

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	88	49.55	3.1.1 Rule of law	85	44.03
1.1.2 Handset prices	56	49.24	3.1.2 Software piracy rate	40	55.41
1.1.3 Internet access	80	46.60	3.1.3 Secure Internet servers	64	55.27
1.1.4 4G mobile network coverage	38	98.00	3.1.4 Cybersecurity	74	59.87
1.1.5 Fixed-broadband subscriptions	67	53.44	3.1.5 Online trust and safety	16	78.39
1.1.6 International Internet bandwidth	16	75.07	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	48	39.14	3.2.1 Regulatory quality	53	58.63
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	61	70.45
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	67	42.21
1.2.2 Mobile apps development	84	49.29	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	47	0.80	3.2.5 Social safety net protection	64	42.74
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	80	78.77
1.3.1 Availability of latest technologies	78	43.45	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	66	33.67	3.3.1 E-Participation	23	91.08
1.3.3 Government procurement of advanced technology products	70	37.93	3.3.2 Socioeconomic gap in use of digital payments	79	55.86
1.3.4 ICT PCT patent applications	65	2.20	3.3.3 Availability of local online content	72	48.63
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	15	67.56
1.3.6 Robot density	62	0.19	3.3.5 Rural gap in use of digital payments	100	45.66
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	77	58.38	4.1.1 Medium and high-tech industry	65	28.92
2.1.2 Active mobile-broadband subscriptions	93	18.98	4.1.2 High-tech exports	60	13.76
2.1.3 Use of virtual social networks	30	67.78	4.1.3 PCT patent applications	60	0.57
2.1.4 Tertiary enrolment	49	40.14	4.1.4 Labour productivity per employee	73	18.29
2.1.5 Adult literacy rate	48	92.43	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	48	33.11	4.2.1 Happiness	51	60.95
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	52	74.60
2.2.1 Firms with website	42	63.04	4.2.3 Income inequality	98	35.00
2.2.2 Internet shopping	72	10.78	4.2.4 Healthy life expectancy at birth	50	66.67
2.2.3 Professionals	111	3.63	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	58	37.93	4.3.1 Access to basic services	70	91.38
2.2.5 Extent of staff training	81	31.98	4.3.2 Pollution	39	89.26
2.2.6 R&D expenditure by businesses	60	3.05	4.3.3 Road safety	84	50.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	37	68.13
2.3.1 Government online services	30	86.92	4.3.5 Maths proficiency in schools	40	52.03
2.3.2 Publication and use of open data	24	51.65	4.3.6 Use of clean fuels and technology	66	98.89
2.3.3 ICT use and government efficiency	51	48.83			
2.3.4 R&D expenditure by governments and higher education	97	5.78			

* Confidential data

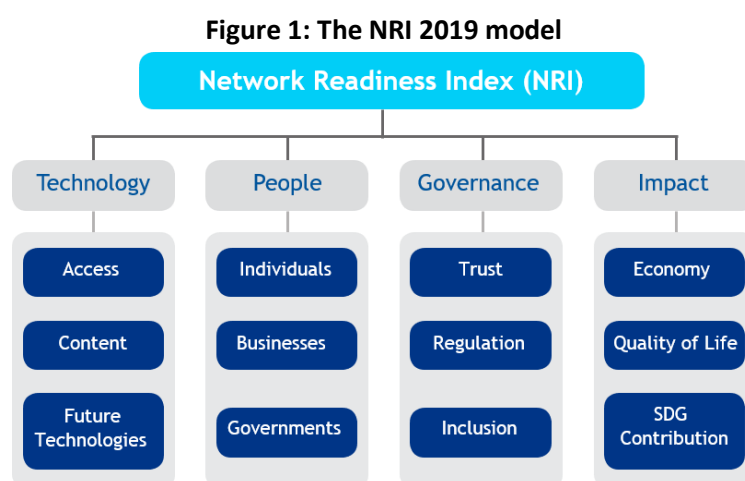
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Network Readiness Index 2019

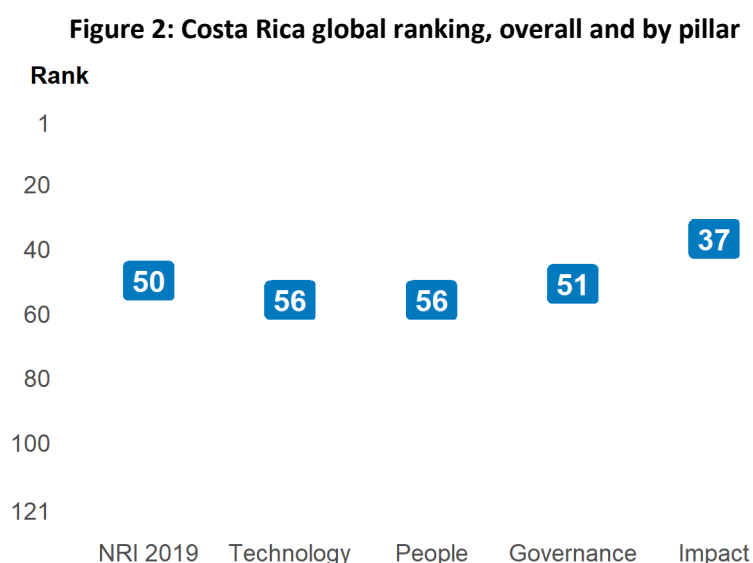
Costa Rica

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Costa Rica

Costa Rica ranks 50th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology and People.



Performance at sub-pillar level

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

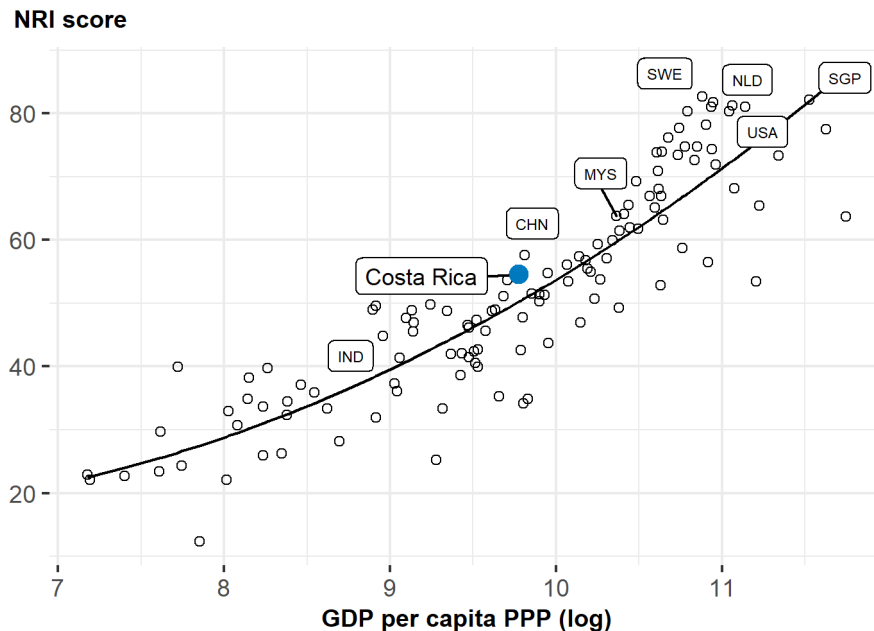
Table 1: Costa Rica rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	25	Inclusion	52
Individuals	31	Future Technologies	54
Regulation	42	Economy	61
SDG Contribution	48	Access	66
Content	50	Trust	68
Businesses	51	Governments	82

NRI score and income

Figure 3 shows the position of Costa Rica 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, Costa Rica 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Costa Rica belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Costa Rica is ranked 6th 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 Technology, Individuals, Businesses, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

The Americas

Costa Rica is ranked 5th within The Americas (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in The Americas in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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

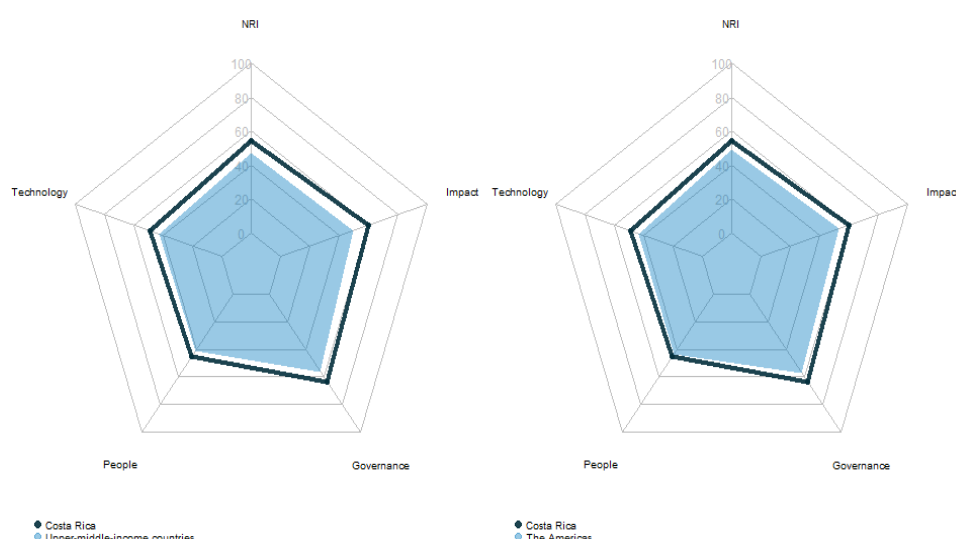


Table 2: Costa Rica scores vs. averages of its income group and region, overall and by pillar

Dimension	Costa Rica	Upper-middle-income countries	The Americas
NRI	54.59	47.40	49.08
Technology	48.74	42.66	43.12
People	45.44	41.07	43.32
Governance	63.98	56.24	57.13
Impact	60.18	49.62	52.73

Strongest and weakest indicators

The indicators where Costa Rica performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Gender gap in internet use (Table 3). By contrast, the economy's weakest indicators include Cybersecurity, Government procurement of advanced technology products, and Income inequality.

Table 3: Top-ranked and bottom-ranked indicators of Costa Rica

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Publication and use of open data	68
Use of clean fuels and technology	1	Government online services	73
Gender gap in internet use	8	Road safety	73
Freedom to make life choices	8	Intellectual property receipts	74
Online trust and safety	10	Medium and high-tech industry	76
Happiness	14	Fixed-broadband subscriptions	86
Maths proficiency in schools	17	Rural gap in use of digital payments	91
Use of virtual social networks	18	Income inequality	94
High-tech exports	23	Government procurement of advanced technology products	101
Social safety net protection	28	Cybersecurity	106

NRI 2019 At-A-Glance: Costa Rica

Network Readiness Index

Rank: 50 (out of 121)

Score: 54.59

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	56	48.74	C. Governance pillar	51	63.98
1st sub-pillar: Access	66	63.42	1st sub-pillar: Trust	68	54.32
2nd sub-pillar: Content	50	50.23	2nd sub-pillar: Regulation	42	71.44
3rd sub-pillar: Future Technologies	54	32.59	3rd sub-pillar: Inclusion	52	66.19
B. People pillar	56	45.44	D. Impact pillar	37	60.18
1st sub-pillar: Individuals	31	63.53	1st sub-pillar: Economy	61	21.51
2nd sub-pillar: Businesses	51	33.76	2nd sub-pillar: Quality of Life	25	75.01
3rd sub-pillar: Governments	82	39.03	3rd sub-pillar: SDG Contribution	48	84.03

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	35	74.54	3.1.1 Rule of law	41	64.25
1.1.2 Handset prices	51	52.49	3.1.2 Software piracy rate	54	41.89
1.1.3 Internet access	57	71.28	3.1.3 Secure Internet servers	62	60.53
1.1.4 4G mobile network coverage	68	89.90	3.1.4 Cybersecurity	106	22.15
1.1.5 Fixed-broadband subscriptions	86	23.71	3.1.5 Online trust and safety	10	82.80
1.1.6 International Internet bandwidth	31	72.94	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	39	59.08	3.2.1 Regulatory quality	47	61.97
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	67	69.00
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	65	42.59
1.2.2 Mobile apps development	50	66.32	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	74	0.18	3.2.5 Social safety net protection	28	69.36
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	60	85.72
1.3.1 Availability of latest technologies	45	62.32	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	48	44.01	3.3.1 E-Participation	57	73.89
1.3.3 Government procurement of advanced technology products	101	26.18	3.3.2 Socioeconomic gap in use of digital payments	57	70.91
1.3.4 ICT PCT patent applications	61	3.16	3.3.3 Availability of local online content	40	65.01
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	8	68.61
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	91	52.52
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	55	71.55	4.1.1 Medium and high-tech industry	76	26.40
2.1.2 Active mobile-broadband subscriptions	32	37.37	4.1.2 High-tech exports	23	35.09
2.1.3 Use of virtual social networks	18	71.93	4.1.3 PCT patent applications	50	1.01
2.1.4 Tertiary enrolment	50	40.05	4.1.4 Labour productivity per employee	63	23.52
2.1.5 Adult literacy rate	31	96.73	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	14	85.06
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	8	95.71
2.2.1 Firms with website	63	45.95	4.2.3 Income inequality	94	38.68
2.2.2 Internet shopping	55	23.13	4.2.4 Healthy life expectancy at birth	28	80.59
2.2.3 Professionals	49	31.96	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	51	42.30	4.3.1 Access to basic services	39	98.36
2.2.5 Extent of staff training	36	55.38	4.3.2 Pollution	47	88.57
2.2.6 R&D expenditure by businesses	54	3.81	4.3.3 Road safety	73	56.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	29	82.89
2.3.1 Government online services	73	63.85	4.3.5 Maths proficiency in schools	17	78.11
2.3.2 Publication and use of open data	68	19.87	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	58	45.34			
2.3.4 R&D expenditure by governments and higher education	58	27.07			

* Confidential data

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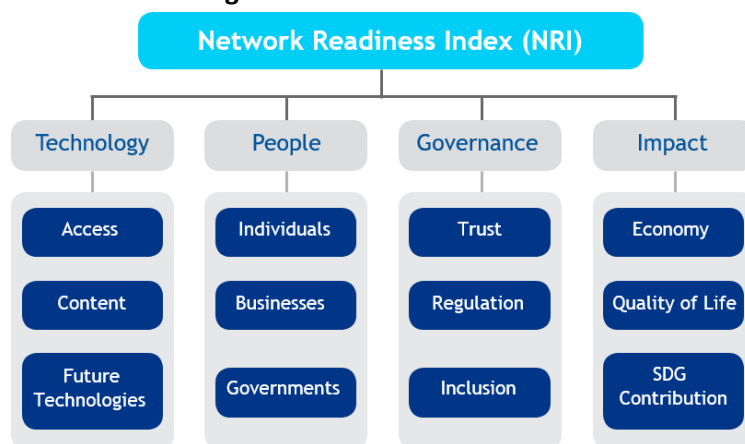
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Network Readiness Index 2019

Croatia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

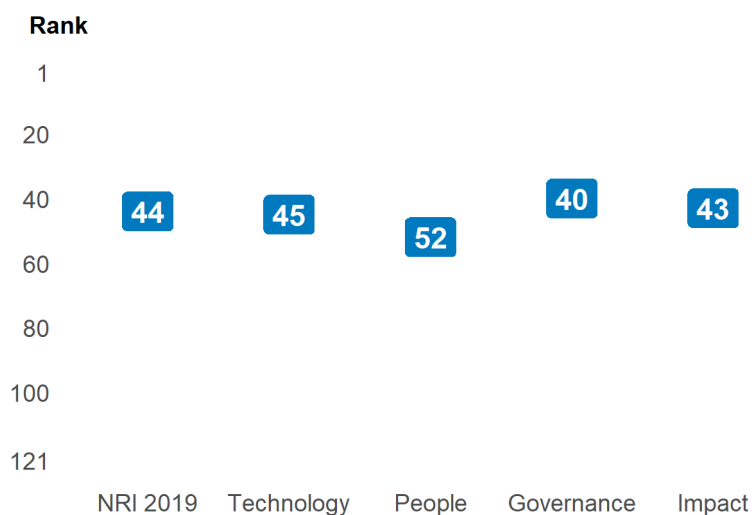
Figure 1: The NRI 2019 model



Global NRI position of Croatia

Croatia ranks 44th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Croatia global ranking, overall and by pillar



Performance at sub-pillar level

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

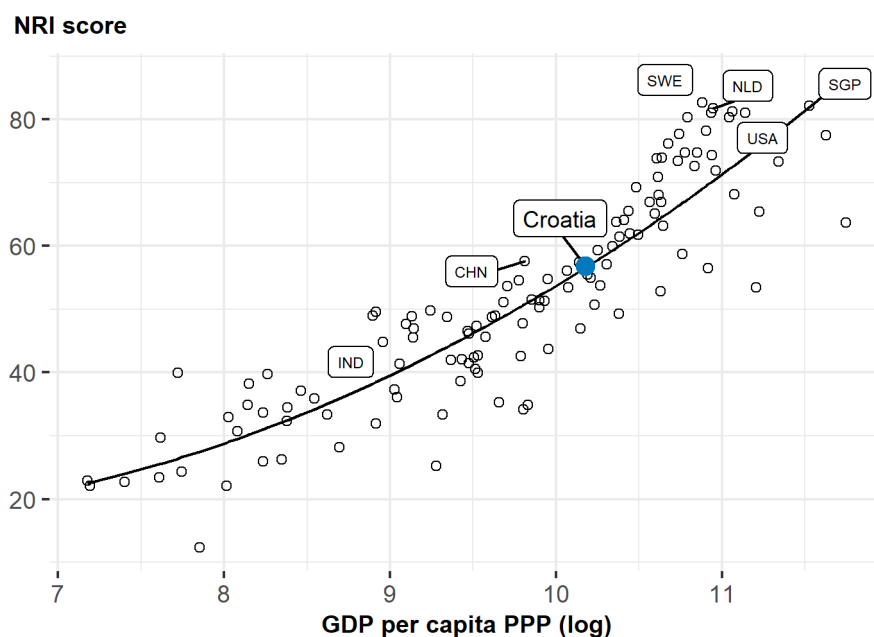
Table 1: Croatia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	30	Individuals	51
Content	31	Economy	53
Trust	34	Regulation	61
Businesses	43	Quality of Life	63
Inclusion	44	Governments	70
Access	49	Future Technologies	107

NRI score and income

Figure 3 shows the position of Croatia 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, Croatia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Croatia belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Croatia is ranked 42nd 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 outperforms high-income countries in one of the twelve sub-pillars: SDG Contribution.

Europe

Croatia 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 one of the twelve sub-pillars: SDG Contribution.

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

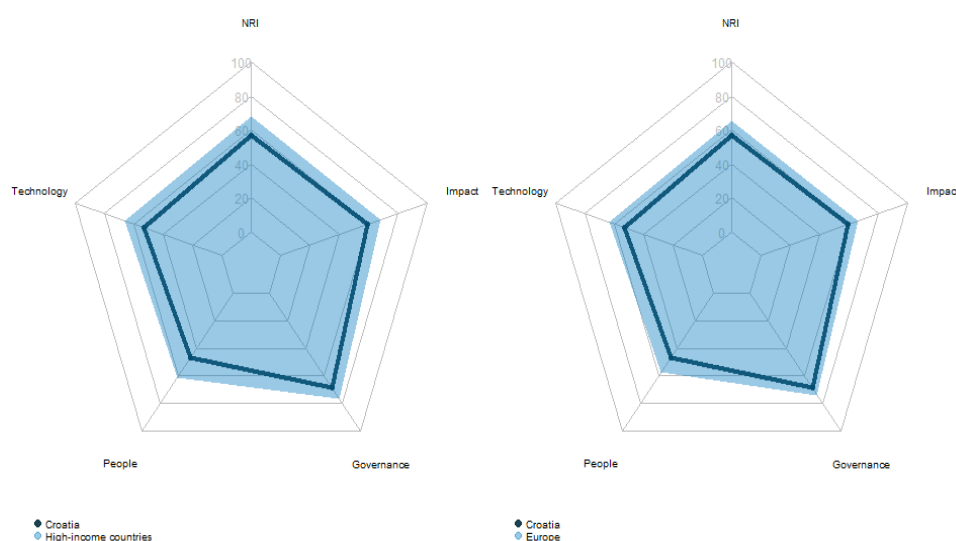


Table 2: Croatia scores vs. averages of its income group and region, overall and by pillar

Dimension	Croatia	High-income countries	Europe
NRI	56.75	68.12	65.20
Technology	52.75	66.07	63.08
People	46.45	61.07	57.50
Governance	68.82	77.07	73.99
Impact	58.97	68.29	66.24

Strongest and weakest indicators

The indicators where Croatia performs particularly well include E-commerce legislation, Rural gap in use of digital payments, and ICT regulatory environment (Table 3). By contrast, the economy's weakest indicators include Government procurement of advanced technology products, Extent of staff training, and Legal framework's adaptability to digital business models.

Table 3: Top-ranked and bottom-ranked indicators of Croatia

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Government online services	72
Rural gap in use of digital payments	5	Computer software spending	77
ICT regulatory environment	11	Use of virtual social networks	78
Adult literacy rate	16	ICT use and government efficiency	87
International Internet bandwidth	19	Social safety net protection	92
Secure Internet servers	20	Company investment in emerging technology	101
Income inequality	21	Freedom to make life choices	103
Technicians and associate professionals	22	Legal framework's adaptability to digital business models	107
Digital participation and content creation	24	Extent of staff training	115
Cybersecurity	26	Government procurement of advanced technology products	117

NRI 2019 At-A-Glance: Croatia

Network Readiness Index

Rank: 44 (out of 121)

Score: 56.75

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	45	52.75	C. Governance pillar	40	68.82
1st sub-pillar: Access	49	74.54	1st sub-pillar: Trust	34	71.94
2nd sub-pillar: Content	31	64.76	2nd sub-pillar: Regulation	61	64.47
3rd sub-pillar: Future Technologies	107	18.95	3rd sub-pillar: Inclusion	44	70.04
B. People pillar	52	46.45	D. Impact pillar	43	58.97
1st sub-pillar: Individuals	51	58.13	1st sub-pillar: Economy	53	23.82
2nd sub-pillar: Businesses	43	39.63	2nd sub-pillar: Quality of Life	63	61.69
3rd sub-pillar: Governments	70	41.58	3rd sub-pillar: SDG Contribution	30	91.40

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	44	70.84	3.1.1 Rule of law	48	60.74
1.1.2 Handset prices	61	46.85	3.1.2 Software piracy rate	43	52.70
1.1.3 Internet access	42	80.28	3.1.3 Secure Internet servers	20	84.30
1.1.4 4G mobile network coverage	35	98.50	3.1.4 Cybersecurity	26	90.02
1.1.5 Fixed-broadband subscriptions	52	76.31	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	19	74.44	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	49	61.27
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	49	76.75
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	107	23.45
1.2.2 Mobile apps development	41	72.10	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	38	1.07	3.2.5 Social safety net protection	92	29.21
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	11	96.14
1.3.1 Availability of latest technologies	63	53.04	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	101	19.02	3.3.1 E-Participation	57	73.89
1.3.3 Government procurement of advanced technology products	117	12.92	3.3.2 Socioeconomic gap in use of digital payments	28	86.57
1.3.4 ICT PCT patent applications	40	17.65	3.3.3 Availability of local online content	67	51.20
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	59	58.08
1.3.6 Robot density	46	2.01	3.3.5 Rural gap in use of digital payments	5	80.46
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	58	69.99	4.1.1 Medium and high-tech industry	46	39.18
2.1.2 Active mobile-broadband subscriptions	59	30.10	4.1.2 High-tech exports	53	16.85
2.1.3 Use of virtual social networks	78	46.99	4.1.3 PCT patent applications	41	2.70
2.1.4 Tertiary enrolment	36	48.39	4.1.4 Labour productivity per employee	48	36.54
2.1.5 Adult literacy rate	16	98.68	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	31	54.62	4.2.1 Happiness	67	51.63
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	103	37.57
2.2.1 Firms with website	34	66.98	4.2.3 Income inequality	21	83.95
2.2.2 Internet shopping	38	37.96	4.2.4 Healthy life expectancy at birth	33	73.63
2.2.3 Professionals	33	45.65	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	22	62.68	4.3.1 Access to basic services	46	97.44
2.2.5 Extent of staff training	115	13.81	4.3.2 Pollution	52	87.25
2.2.6 R&D expenditure by businesses	40	10.68	4.3.3 Road safety	35	83.12
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	72	64.62	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	57	26.75	4.3.6 Use of clean fuels and technology	68	97.78
2.3.3 ICT use and government efficiency	87	34.63			
2.3.4 R&D expenditure by governments and higher education	40	40.31			

* Confidential data

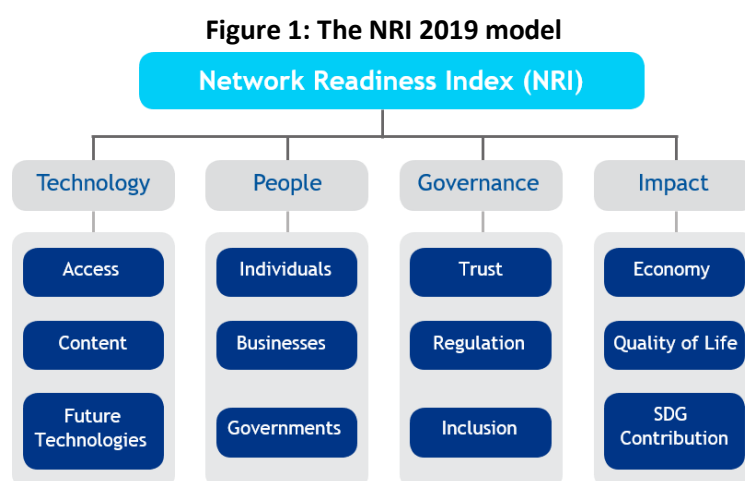
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Network Readiness Index 2019

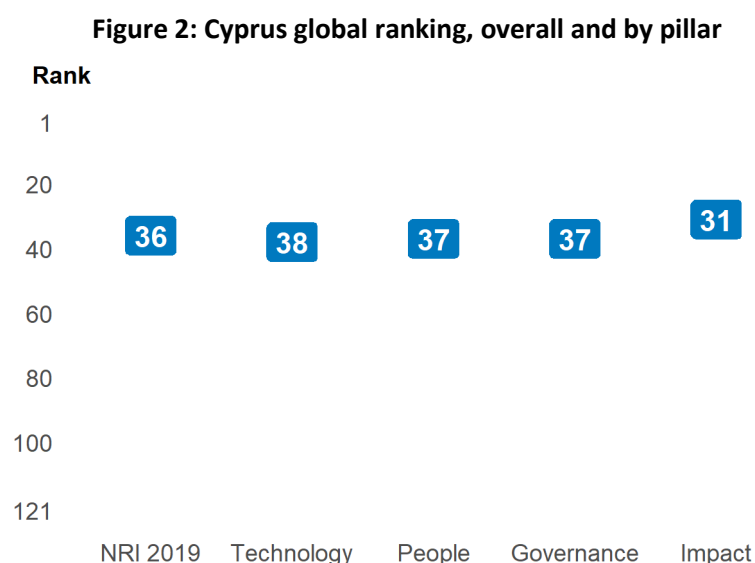
Cyprus

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Cyprus

Cyprus ranks 36th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

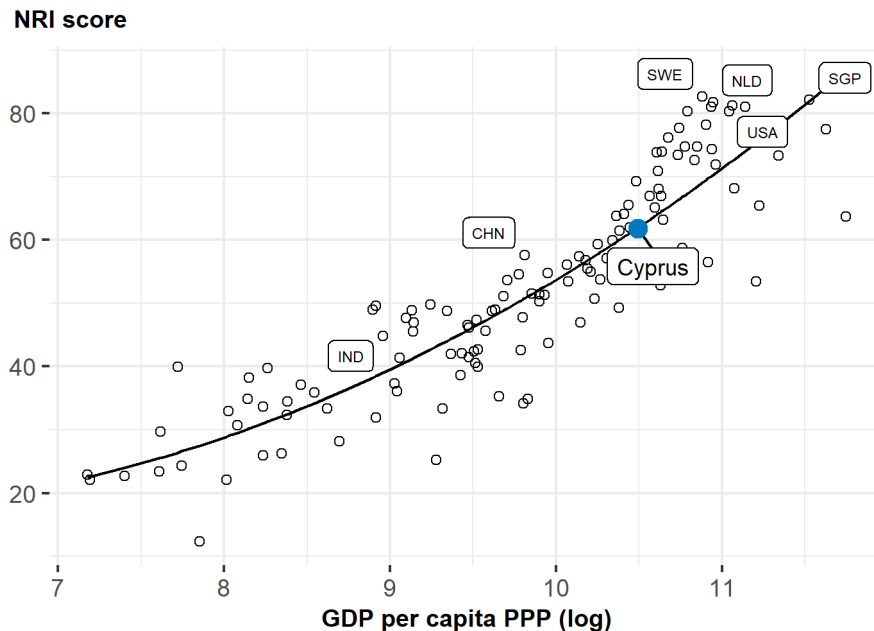
Table 1: Cyprus rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	17	Economy	39
Content	25	Trust	40
Quality of Life	29	Regulation	41
SDG Contribution	33	Access	47
Businesses	36	Governments	52
Inclusion	38	Future Technologies	62

NRI score and income

Figure 3 shows the position of Cyprus 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, Cyprus 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Cyprus belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Cyprus is ranked 35th 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 outperforms high-income countries in three of the twelve sub-pillars: Content, Individuals and SDG Contribution.

Europe

Cyprus is ranked 25th 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 four of the twelve sub-pillars: Content, Individuals, Inclusion and Quality of Life.

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



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

Dimension	Cyprus	High-income countries	Europe
NRI	61.78	68.12	65.20
Technology	57.40	66.07	63.08
People	53.66	61.07	57.50
Governance	71.26	77.07	73.99
Impact	64.78	68.29	66.24

Strongest and weakest indicators

The indicators where Cyprus performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Use of virtual social networks (Table 3). By contrast, the economy's weakest indicators include Company investment in emerging technology, Intellectual property receipts, Mobile tariffs, and Government procurement of advanced technology products.

Table 3: Top-ranked and bottom-ranked indicators of Cyprus

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	R&D expenditure by governments and higher education	61
Use of clean fuels and technology	1	Medium and high-tech industry	61
Use of virtual social networks	6	Availability of latest technologies	64
Healthy life expectancy at birth	6	Legal framework's adaptability to digital business models	66
International Internet bandwidth	10	ICT use and government efficiency	71
Mobile apps development	12	Freedom to make life choices	73
Road safety	14	Mobile tariffs	75
Gender gap in internet use	16	Government procurement of advanced technology products	75
High-tech exports	19	Intellectual property receipts	81
Maths proficiency in schools	20	Company investment in emerging technology	87

NRI 2019 At-A-Glance: Cyprus

Network Readiness Index

Rank: 36 (out of 121)

Score: 61.78

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	38	57.40	C. Governance pillar	37	71.26
1st sub-pillar: Access	47	74.89	1st sub-pillar: Trust	40	68.87
2nd sub-pillar: Content	25	66.88	2nd sub-pillar: Regulation	41	71.96
3rd sub-pillar: Future Technologies	62	30.43	3rd sub-pillar: Inclusion	38	72.96
B. People pillar	37	53.66	D. Impact pillar	31	64.78
1st sub-pillar: Individuals	17	68.58	1st sub-pillar: Economy	39	29.97
2nd sub-pillar: Businesses	36	44.85	2nd sub-pillar: Quality of Life	29	73.56
3rd sub-pillar: Governments	52	47.55	3rd sub-pillar: SDG Contribution	33	90.81

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	75	57.37	3.1.1 Rule of law	35	70.52
1.1.2 Handset prices	43	56.98	3.1.2 Software piracy rate	34	60.81
1.1.3 Internet access	31	85.25	3.1.3 Secure Internet servers	42	74.74
1.1.4 4G mobile network coverage	43	97.53	3.1.4 Cybersecurity	57	69.41
1.1.5 Fixed-broadband subscriptions	56	72.66	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	10	79.58	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	32	73.82
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	52	76.27
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	66	42.24
1.2.2 Mobile apps development	12	88.01	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	81	0.08	3.2.5 Social safety net protection	45	52.93
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	55	86.49
1.3.1 Availability of latest technologies	64	52.61	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	87	25.56	3.3.1 E-Participation	46	79.61
1.3.3 Government procurement of advanced technology products	75	34.67	3.3.2 Socioeconomic gap in use of digital payments	37	82.14
1.3.4 ICT PCT patent applications	32	21.12	3.3.3 Availability of local online content	38	65.70
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	16	67.33
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	53	70.01
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	29	83.06	4.1.1 Medium and high-tech industry	61	32.27
2.1.2 Active mobile-broadband subscriptions	21	43.11	4.1.2 High-tech exports	19	37.63
2.1.3 Use of virtual social networks	6	84.41	4.1.3 PCT patent applications	42	2.62
2.1.4 Tertiary enrolment	45	43.66	4.1.4 Labour productivity per employee	29	47.36
2.1.5 Adult literacy rate	23	97.99	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	23	59.28	4.2.1 Happiness	36	67.05
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	73	61.51
2.2.1 Firms with website	32	68.67	4.2.3 Income inequality	43	76.32
2.2.2 Internet shopping	36	41.45	4.2.4 Healthy life expectancy at birth	6	89.38
2.2.3 Professionals	25	48.79	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	34	55.60	4.3.1 Access to basic services	28	99.19
2.2.5 Extent of staff training	46	49.32	4.3.2 Pollution	51	87.52
2.2.6 R&D expenditure by businesses	52	5.24	4.3.3 Road safety	14	92.50
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	51	76.15	4.3.5 Maths proficiency in schools	20	74.82
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	71	40.77			
2.3.4 R&D expenditure by governments and higher education	61	25.74			

* Confidential data

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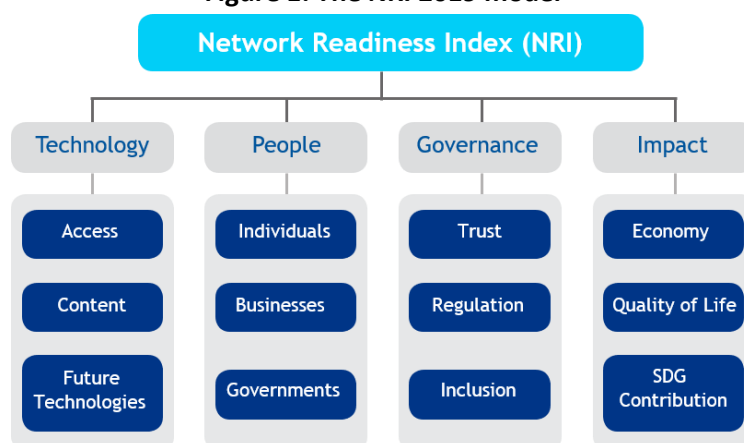
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Network Readiness Index 2019

Czech Republic

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

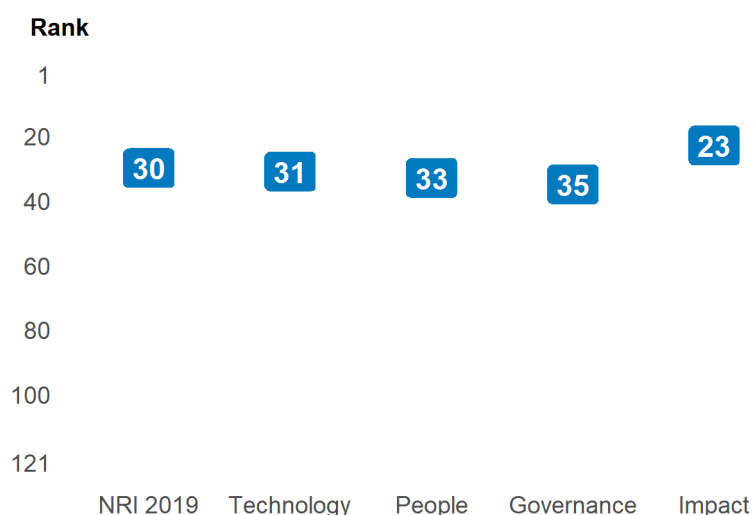
Figure 1: The NRI 2019 model



Global NRI position of Czech Republic

Czech Republic ranks 30th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Czech Republic global ranking, overall and by pillar



Performance at sub-pillar level

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

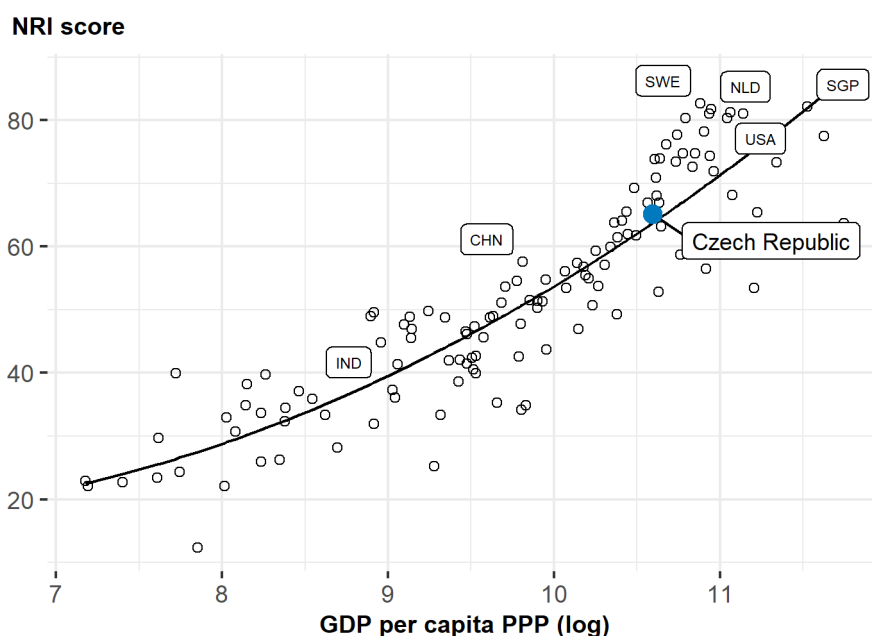
Table 1: Czech Republic rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	20	Access	33
Businesses	22	Trust	35
Content	23	Future Technologies	37
SDG Contribution	25	Governments	44
Economy	27	Inclusion	45
Regulation	28	Individuals	66

NRI score and income

Figure 3 shows the position of Czech Republic 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, Czech Republic 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Czech Republic belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Czech Republic is ranked 30th 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: Content, Businesses, Quality of Life and SDG Contribution.

Europe

Czech Republic is ranked 21st within Europe (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Impact. With regard to sub-pillars, it outperforms the average in Europe in seven of the twelve sub-pillars: Access, Content, Businesses, Regulation, Economy, Quality of Life and SDG Contribution.

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



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

Dimension	Czech Republic	High-income countries	Europe
NRI	65.09	68.12	65.20
Technology	63.00	66.07	63.08
People	54.89	61.07	57.50
Governance	72.48	77.07	73.99
Impact	69.97	68.29	66.24

Strongest and weakest indicators

The indicators where Czech Republic performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Income inequality (Table 3). By contrast, the economy's weakest indicators include ICT use and government efficiency, E-Participation, and Government procurement of advanced technology products.

Table 3: Top-ranked and bottom-ranked indicators of Czech Republic

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Gender gap in internet use	58
Use of clean fuels and technology	1	International Internet bandwidth	59
Income inequality	4	Use of virtual social networks	61
Secure Internet servers	11	Cybersecurity	72
Medium and high-tech industry	11	Online trust and safety	72
4G mobile network coverage	12	Freedom to make life choices	75
Reading proficiency in schools	12	Government online services	80
Firms with website	13	Government procurement of advanced technology products	84
Availability of local online content	13	ICT use and government efficiency	86
Technicians and associate professionals	14	E-Participation	86

NRI 2019 At-A-Glance: Czech Republic

Network Readiness Index

Rank: 30 (out of 121)

Score: 65.09

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	31	63.00	C. Governance pillar	35	72.48
1st sub-pillar: Access	33	80.12	1st sub-pillar: Trust	35	70.05
2nd sub-pillar: Content	23	68.23	2nd sub-pillar: Regulation	28	77.73
3rd sub-pillar: Future Technologies	37	40.67	3rd sub-pillar: Inclusion	45	69.65
B. People pillar	33	54.89	D. Impact pillar	23	69.97
1st sub-pillar: Individuals	66	54.86	1st sub-pillar: Economy	27	38.26
2nd sub-pillar: Businesses	22	59.44	2nd sub-pillar: Quality of Life	20	78.94
3rd sub-pillar: Governments	44	50.38	3rd sub-pillar: SDG Contribution	25	92.70

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	27	79.73	3.1.1 Rule of law	28	77.27
1.1.2 Handset prices	29	64.40	3.1.2 Software piracy rate	20	77.03
1.1.3 Internet access	45	79.18	3.1.3 Secure Internet servers	11	90.90
1.1.4 4G mobile network coverage	12	99.80	3.1.4 Cybersecurity	72	60.31
1.1.5 Fixed-broadband subscriptions	33	88.76	3.1.5 Online trust and safety	72	44.75
1.1.6 International Internet bandwidth	59	68.86	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	23	79.20
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	40	81.56
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	58	44.87
1.2.2 Mobile apps development	29	80.05	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	34	1.27	3.2.5 Social safety net protection	26	70.38
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	32	90.35
1.3.1 Availability of latest technologies	31	74.25	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	36	51.38	3.3.1 E-Participation	86	56.69
1.3.3 Government procurement of advanced technology products	84	31.71	3.3.2 Socioeconomic gap in use of digital payments	50	76.14
1.3.4 ICT PCT patent applications	37	19.35	3.3.3 Availability of local online content	13	87.28
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	58	58.09
1.3.6 Robot density	20	40.05	3.3.5 Rural gap in use of digital payments	52	70.07
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	37	78.89	4.1.1 Medium and high-tech industry	11	66.96
2.1.2 Active mobile-broadband subscriptions	45	33.64	4.1.2 High-tech exports	20	37.20
2.1.3 Use of virtual social networks	61	53.22	4.1.3 PCT patent applications	31	6.41
2.1.4 Tertiary enrolment	39	46.59	4.1.4 Labour productivity per employee	38	42.47
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	21	61.97	4.2.1 Happiness	16	82.84
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	75	60.56
2.2.1 Firms with website	13	83.33	4.2.3 Income inequality	4	97.63
2.2.2 Internet shopping	19	69.31	4.2.4 Healthy life expectancy at birth	32	74.73
2.2.3 Professionals	39	41.15	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	14	75.49	4.3.1 Access to basic services	23	99.35
2.2.5 Extent of staff training	32	58.74	4.3.2 Pollution	38	89.37
2.2.6 R&D expenditure by businesses	19	28.59	4.3.3 Road safety	21	90.00
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	12	97.80
2.3.1 Government online services	80	61.54	4.3.5 Maths proficiency in schools	16	79.70
2.3.2 Publication and use of open data	31	44.44	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	86	35.57			
2.3.4 R&D expenditure by governments and higher education	18	59.96			

* Confidential data

Sources

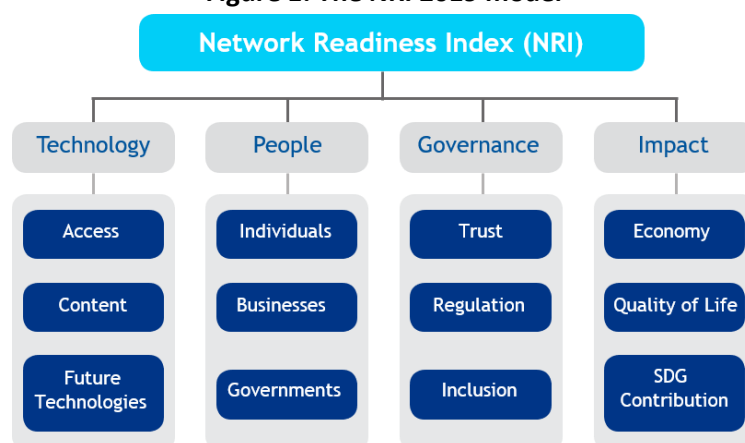
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Network Readiness Index 2019

Denmark

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

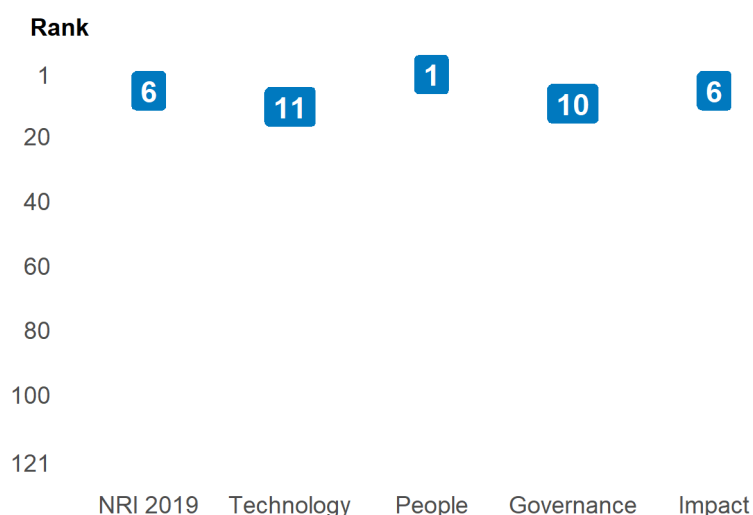
Figure 1: The NRI 2019 model



Global NRI position of Denmark

Denmark ranks 6th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Denmark global ranking, overall and by pillar



Performance at sub-pillar level

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

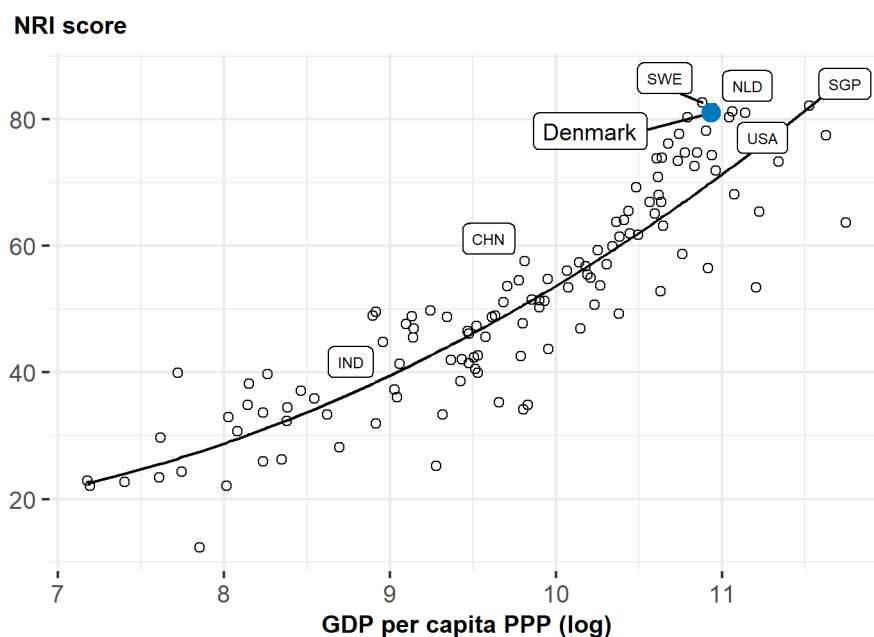
Table 1: Denmark rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	2	Regulation	9
Governments	3	Inclusion	10
Trust	4	Future Technologies	11
Individuals	5	Economy	11
Quality of Life	5	Access	13
Content	8	SDG Contribution	16

NRI score and income

Figure 3 shows the position of Denmark 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, Denmark 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Denmark belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Denmark is ranked 6th 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 each of the four pillars. At the sub-pillar level, it has a higher score than the average of high-income countries in all of them.

Europe

Denmark is ranked 5th within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

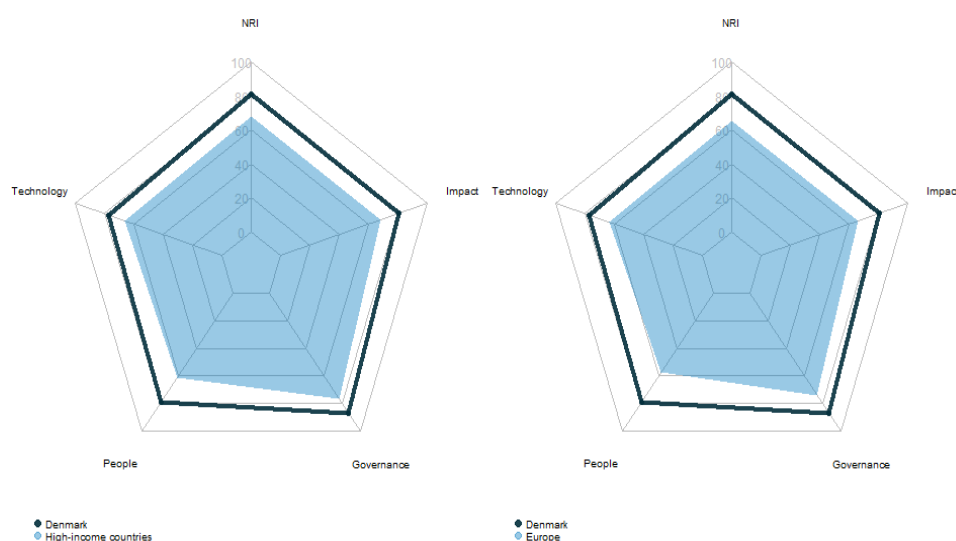


Table 2: Denmark scores vs. averages of its income group and region, overall and by pillar

Dimension	Denmark	High-income countries	Europe
NRI	81.08	68.12	65.20
Technology	77.22	66.07	63.08
People	79.54	61.07	57.50
Governance	87.28	77.07	73.99
Impact	80.27	68.29	66.24

Strongest and weakest indicators

The indicators where Denmark performs particularly well include 4G mobile network coverage, Internet access in schools, and Internet shopping (Table 3). By contrast, the economy's weakest indicators include Online trust and safety, ICT regulatory environment, and International Internet bandwidth.

Table 3: Top-ranked and bottom-ranked indicators of Denmark

Strongest indicators	Rank	Weakest indicators	Rank
4G mobile network coverage	1	Legal framework's adaptability to digital business models	24
Internet access in schools	1	Gender gap in internet use	24
Internet shopping	1	Healthy life expectancy at birth	24
Government online services	1	Availability of local online content	30
R&D expenditure by governments and higher education	1	Mobile tariffs	31
Secure Internet servers	1	High-tech exports	31
E-commerce legislation	1	Government procurement of advanced technology products	34
E-Participation	1	International Internet bandwidth	40
Use of clean fuels and technology	1	ICT regulatory environment	42
Firms with website	2	Online trust and safety	48

NRI 2019 At-A-Glance: Denmark

Network Readiness Index

Rank: 6 (out of 121)

Score: 81.08

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	11	77.22	C. Governance pillar	10	87.28
1st sub-pillar: Access	13	86.70	1st sub-pillar: Trust	4	88.94
2nd sub-pillar: Content	8	79.05	2nd sub-pillar: Regulation	9	89.71
3rd sub-pillar: Future Technologies	11	65.92	3rd sub-pillar: Inclusion	10	83.19
B. People pillar	1	79.54	D. Impact pillar	6	80.27
1st sub-pillar: Individuals	5	74.18	1st sub-pillar: Economy	11	54.39
2nd sub-pillar: Businesses	2	79.89	2nd sub-pillar: Quality of Life	5	91.33
3rd sub-pillar: Governments	3	84.55	3rd sub-pillar: SDG Contribution	16	95.09

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	31	77.33	3.1.1 Rule of law	8	95.14
1.1.2 Handset prices	20	67.49	3.1.2 Software piracy rate	8	93.24
1.1.3 Internet access	8	96.80	3.1.3 Secure Internet servers	1	100.00
1.1.4 4G mobile network coverage	1	100.00	3.1.4 Cybersecurity	23	91.34
1.1.5 Fixed-broadband subscriptions	22	93.95	3.1.5 Online trust and safety	48	64.99
1.1.6 International Internet bandwidth	40	71.32	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	13	88.35
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	4	97.39
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	24	64.53
1.2.2 Mobile apps development	7	91.56	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	12	12.24	3.2.5 Social safety net protection	2	99.20
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	42	88.81
1.3.1 Availability of latest technologies	18	85.34	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	14	74.95	3.3.1 E-Participation	1	100.00
1.3.3 Government procurement of advanced technology products	34	50.29	3.3.2 Socioeconomic gap in use of digital payments	2	99.79
1.3.4 ICT PCT patent applications	16	59.56	3.3.3 Availability of local online content	30	73.45
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	24	66.18
1.3.6 Robot density	7	70.85	3.3.5 Rural gap in use of digital payments	18	76.53
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	6	97.76	4.1.1 Medium and high-tech industry	8	69.29
2.1.2 Active mobile-broadband subscriptions	10	53.56	4.1.2 High-tech exports	31	26.49
2.1.3 Use of virtual social networks	21	70.89	4.1.3 PCT patent applications	7	63.10
2.1.4 Tertiary enrolment	18	58.77	4.1.4 Labour productivity per employee	18	58.66
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	5	89.90	4.2.1 Happiness	2	95.64
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	12	94.21
2.2.1 Firms with website	2	99.93	4.2.3 Income inequality	14	91.58
2.2.2 Internet shopping	1	100.00	4.2.4 Healthy life expectancy at birth	24	83.88
2.2.3 Professionals	4	70.36	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	12	76.22	4.3.1 Access to basic services	14	99.73
2.2.5 Extent of staff training	8	82.06	4.3.2 Pollution	14	95.04
2.2.6 R&D expenditure by businesses	9	50.75	4.3.3 Road safety	7	95.94
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	10	98.15
2.3.1 Government online services	1	100.00	4.3.5 Maths proficiency in schools	13	81.69
2.3.2 Publication and use of open data	13	70.52	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	24	67.70			
2.3.4 R&D expenditure by governments and higher education	1	100.00			

* Confidential data

Sources

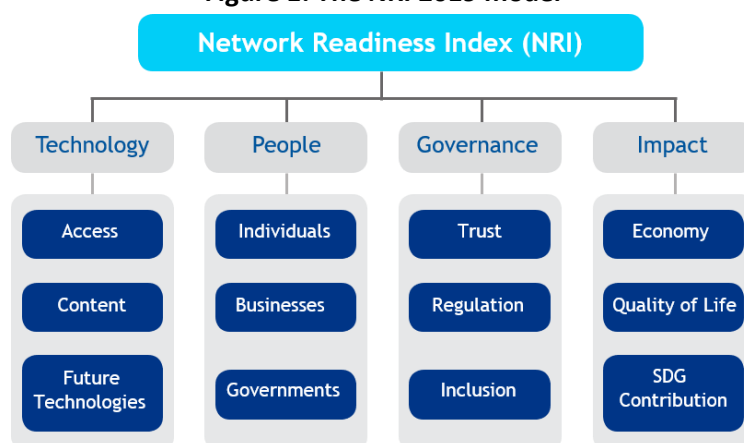
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Network Readiness Index 2019

Dominican Republic

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

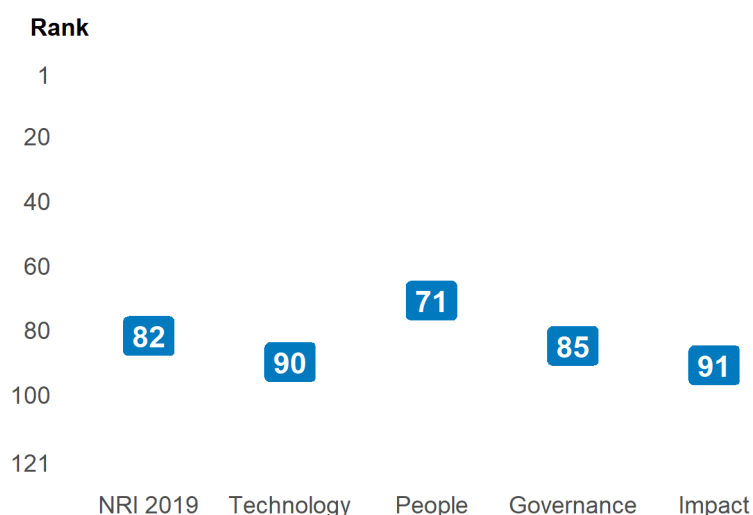
Figure 1: The NRI 2019 model



Global NRI position of Dominican Republic

Dominican Republic ranks 82nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Dominican Republic global ranking, overall and by pillar



Performance at sub-pillar level

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

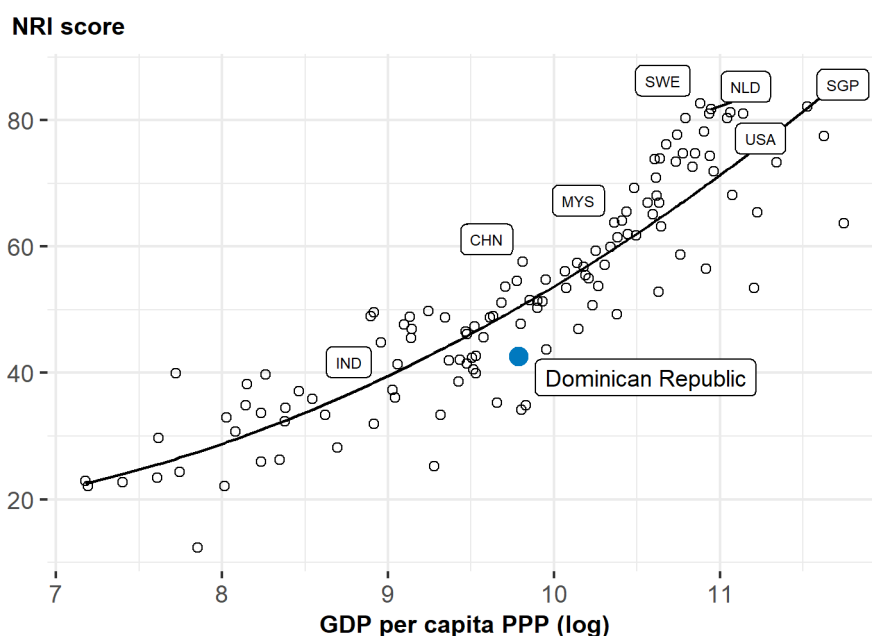
Table 1: Dominican Republic rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	54	Trust	85
Economy	65	Access	86
Quality of Life	77	Regulation	86
Individuals	78	Future Technologies	87
Inclusion	80	Content	88
Businesses	82	SDG Contribution	98

NRI score and income

Figure 3 shows the position of Dominican Republic 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, Dominican Republic 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Dominican Republic belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Dominican Republic is ranked 28th in the group of upper-middle-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 outperforms upper-middle-income countries in three of the twelve sub-pillars: Governments, Economy and Quality of Life.

The Americas

Dominican Republic is ranked 14th 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: Governments and Economy.

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



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

Dimension	Dominican Republic	Upper-middle-income countries	The Americas
NRI	42.59	47.40	49.08
Technology	33.79	42.66	43.12
People	40.85	41.07	43.32
Governance	52.38	56.24	57.13
Impact	43.34	49.62	52.73

Strongest and weakest indicators

The indicators where Dominican Republic performs particularly well include ICT regulatory environment, Gender gap in internet use, and Online trust and safety (Table 3). By contrast, the economy's weakest indicators include Road safety, Government procurement of advanced technology products, and Intellectual property receipts.

Table 3: Top-ranked and bottom-ranked indicators of Dominican Republic

Strongest indicators	Rank	Weakest indicators	Rank
ICT regulatory environment	8	Income inequality	91
Gender gap in internet use	13	Company investment in emerging technology	92
Online trust and safety	19	Mobile tariffs	93
Pollution	31	Secure Internet servers	94
Freedom to make life choices	44	Ease of doing business	95
Tertiary enrolment	47	Computer software spending	97
ICT skills	49	Legal framework's adaptability to digital business models	97
Internet users	51	Intellectual property receipts	98
Publication and use of open data	51	Government procurement of advanced technology products	109
Internet access in schools	54	Road safety	119

NRI 2019 At-A-Glance: Dominican Republic

Network Readiness Index

Rank: 82 (out of 121)

Score: 42.59

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	90	33.79	C. Governance pillar	85	52.38
1st sub-pillar: Access	86	48.69	1st sub-pillar: Trust	85	45.28
2nd sub-pillar: Content	88	28.57	2nd sub-pillar: Regulation	86	56.05
3rd sub-pillar: Future Technologies	87	24.12	3rd sub-pillar: Inclusion	80	55.80
B. People pillar	71	40.85	D. Impact pillar	91	43.34
1st sub-pillar: Individuals	78	51.10	1st sub-pillar: Economy	65	19.49
2nd sub-pillar: Businesses	82	24.18	2nd sub-pillar: Quality of Life	77	58.25
3rd sub-pillar: Governments	54	47.26	3rd sub-pillar: SDG Contribution	98	52.29

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	93	48.79	3.1.1 Rule of law	84	44.30
1.1.2 Handset prices	65	46.33	3.1.2 Software piracy rate	79	18.92
1.1.3 Internet access	91	27.05	3.1.3 Secure Internet servers	94	40.93
1.1.4 4G mobile network coverage	57	93.72	3.1.4 Cybersecurity	89	45.07
1.1.5 Fixed-broadband subscriptions	80	34.39	3.1.5 Online trust and safety	19	77.17
1.1.6 International Internet bandwidth	70	67.69	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	54	22.85	3.2.1 Regulatory quality	76	49.71
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	95	52.63
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	97	30.30
1.2.2 Mobile apps development	88	48.23	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	98	0.00	3.2.5 Social safety net protection	82	31.96
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	8	96.72
1.3.1 Availability of latest technologies	67	51.65	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	92	23.14	3.3.1 E-Participation	76	63.70
1.3.3 Government procurement of advanced technology products	109	21.70	3.3.2 Socioeconomic gap in use of digital payments	87	49.80
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	81	40.85
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	13	67.65
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	80	57.03
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	51	72.37	4.1.1 Medium and high-tech industry	NA	NA
2.1.2 Active mobile-broadband subscriptions	82	22.47	4.1.2 High-tech exports	54	16.23
2.1.3 Use of virtual social networks	60	54.26	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	47	43.52	4.1.4 Labour productivity per employee	65	22.75
2.1.5 Adult literacy rate	54	90.39	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	49	23.61	4.2.1 Happiness	72	49.49
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	44	78.28
2.2.1 Firms with website	80	30.38	4.2.3 Income inequality	91	45.53
2.2.2 Internet shopping	75	9.51	4.2.4 Healthy life expectancy at birth	80	59.71
2.2.3 Professionals	76	18.75	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	76	25.84	4.3.1 Access to basic services	82	87.19
2.2.5 Extent of staff training	66	36.42	4.3.2 Pollution	31	91.85
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	119	0.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	66	25.36
2.3.1 Government online services	77	62.31	4.3.5 Maths proficiency in schools	67	13.49
2.3.2 Publication and use of open data	51	32.21	4.3.6 Use of clean fuels and technology	70	95.56
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

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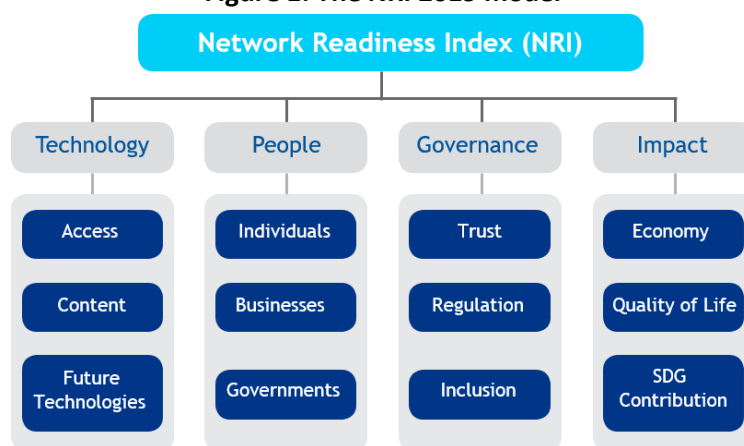
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Network Readiness Index 2019

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

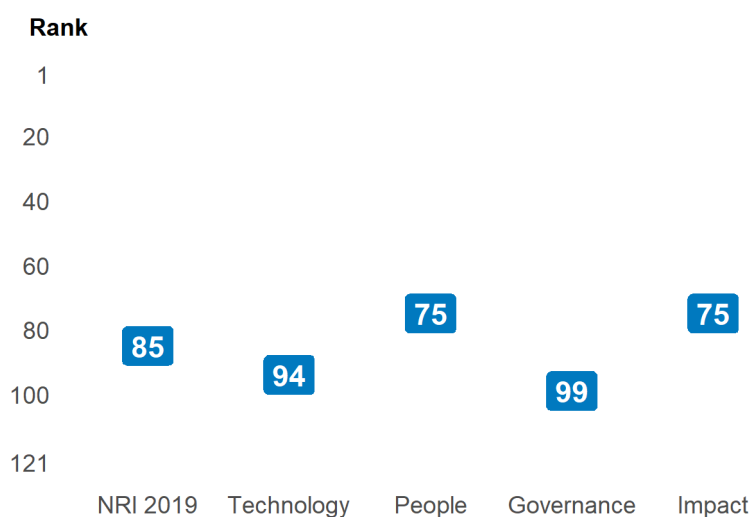
Figure 1: The NRI 2019 model



Global NRI position of Ecuador

Ecuador ranks 85th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People and 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 Quality of Life, SDG Contribution and Individuals, among others (Table 1). More could be done, though, to improve the economy's performances in the Economy, Trust and Future Technologies sub-pillars.

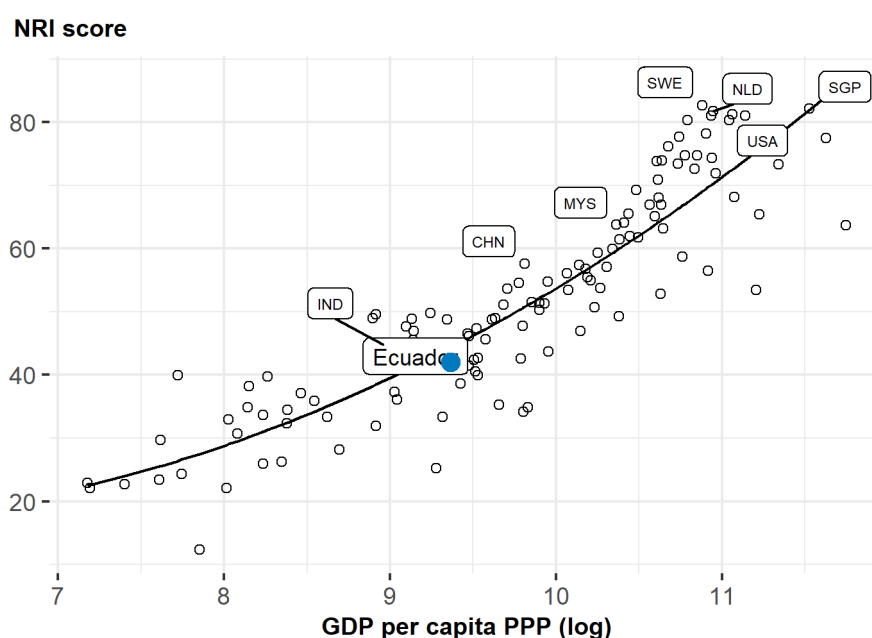
Table 1: Ecuador rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	51	Access	92
SDG Contribution	68	Regulation	92
Individuals	69	Inclusion	93
Businesses	76	Economy	93
Governments	80	Trust	96
Content	83	Future Technologies	102

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 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Ecuador belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Ecuador is ranked 30th in the group of upper-middle-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 outperforms upper-middle-income countries in two of the twelve sub-pillars: Individuals and Quality of Life.

The Americas

Ecuador is ranked 15th 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 one of the twelve sub-pillars: Quality of Life.

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	41.98	47.40	49.08
Technology	31.97	42.66	43.12
People	39.30	41.07	43.32
Governance	47.60	56.24	57.13
Impact	49.03	49.62	52.73

Strongest and weakest indicators

The indicators where Ecuador performs particularly well include Use of clean fuels and technology, Use of virtual social networks, and Firms with website (Table 3). By contrast, the economy's weakest indicators include International Internet bandwidth, Regulatory quality, and Socioeconomic gap in use of digital payments.

Table 3: Top-ranked and bottom-ranked indicators of Ecuador

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Rule of law	97
Use of virtual social networks	21	Mobile tariffs	98
Firms with website	21	Intellectual property receipts	98
Gender gap in internet use	33	Government procurement of advanced technology products	99
Pollution	37	Extent of staff training	101
Maths proficiency in schools	39	Company investment in emerging technology	104
Freedom to make life choices	42	Ease of doing business	104
Healthy life expectancy at birth	44	Socioeconomic gap in use of digital payments	110
Happiness	45	Regulatory quality	114
Reading proficiency in schools	47	International Internet bandwidth	116

NRI 2019 At-A-Glance: Ecuador

Network Readiness Index

Rank: 85 (out of 121)

Score: 41.98

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	94	31.97	C. Governance pillar	99	47.60
1st sub-pillar: Access	92	42.27	1st sub-pillar: Trust	96	40.12
2nd sub-pillar: Content	83	33.24	2nd sub-pillar: Regulation	92	53.34
3rd sub-pillar: Future Technologies	102	20.40	3rd sub-pillar: Inclusion	93	49.35
B. People pillar	75	39.30	D. Impact pillar	75	49.03
1st sub-pillar: Individuals	69	53.01	1st sub-pillar: Economy	93	9.63
2nd sub-pillar: Businesses	76	25.63	2nd sub-pillar: Quality of Life	51	65.16
3rd sub-pillar: Governments	80	39.26	3rd sub-pillar: SDG Contribution	68	72.32

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	98	44.80	3.1.1 Rule of law	97	38.96
1.1.2 Handset prices	89	34.65	3.1.2 Software piracy rate	70	28.38
1.1.3 Internet access	86	33.00	3.1.3 Secure Internet servers	79	47.61
1.1.4 4G mobile network coverage	86	70.87	3.1.4 Cybersecurity	96	38.16
1.1.5 Fixed-broadband subscriptions	85	24.75	3.1.5 Online trust and safety	70	47.49
1.1.6 International Internet bandwidth	116	49.93	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	50	37.91	3.2.1 Regulatory quality	114	31.81
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	104	48.62
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	92	31.62
1.2.2 Mobile apps development	78	52.03	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	98	0.00	3.2.5 Social safety net protection	53	46.66
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	56	86.30
1.3.1 Availability of latest technologies	90	39.67	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	104	16.84	3.3.1 E-Participation	78	63.06
1.3.3 Government procurement of advanced technology products	99	27.32	3.3.2 Socioeconomic gap in use of digital payments	110	32.57
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	90	35.46
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	33	63.21
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	92	52.47
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	83	52.83	4.1.1 Medium and high-tech industry	93	15.17
2.1.2 Active mobile-broadband subscriptions	90	19.95	4.1.2 High-tech exports	75	9.99
2.1.3 Use of virtual social networks	21	70.89	4.1.3 PCT patent applications	77	0.07
2.1.4 Tertiary enrolment	66	32.46	4.1.4 Labour productivity per employee	80	13.29
2.1.5 Adult literacy rate	59	88.92	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	45	63.96
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	42	78.91
2.2.1 Firms with website	21	77.50	4.2.3 Income inequality	89	48.16
2.2.2 Internet shopping	81	7.70	4.2.4 Healthy life expectancy at birth	44	69.60
2.2.3 Professionals	82	17.78	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	87	20.11	4.3.1 Access to basic services	79	88.12
2.2.5 Extent of staff training	101	25.92	4.3.2 Pollution	37	89.64
2.2.6 R&D expenditure by businesses	53	4.75	4.3.3 Road safety	88	41.88
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	47	62.02
2.3.1 Government online services	63	70.00	4.3.5 Maths proficiency in schools	39	52.24
2.3.2 Publication and use of open data	66	21.62	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	61	43.65			
2.3.4 R&D expenditure by governments and higher education	66	21.76			

* Confidential data

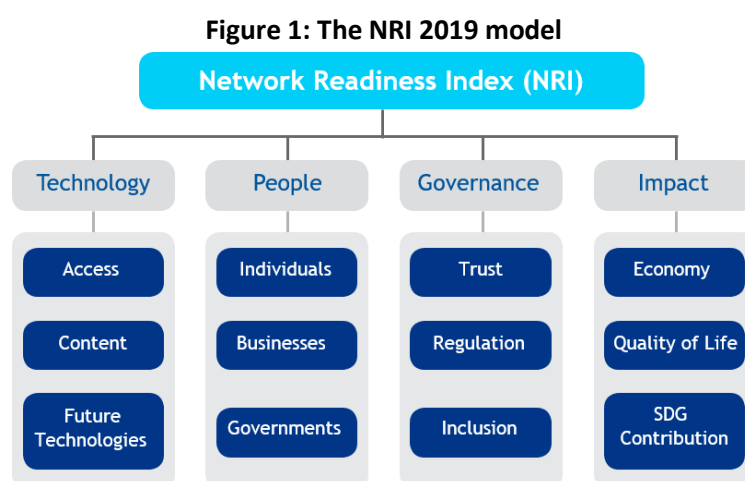
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Network Readiness Index 2019

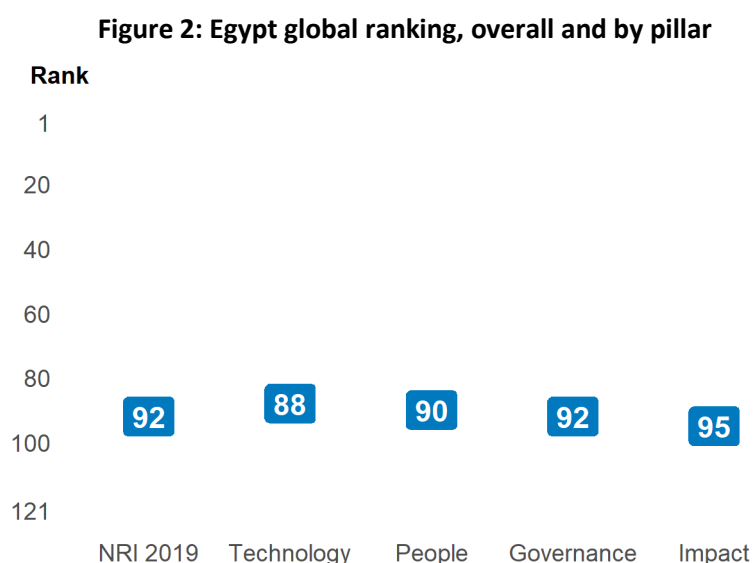
Egypt

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Egypt

Egypt ranks 92nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

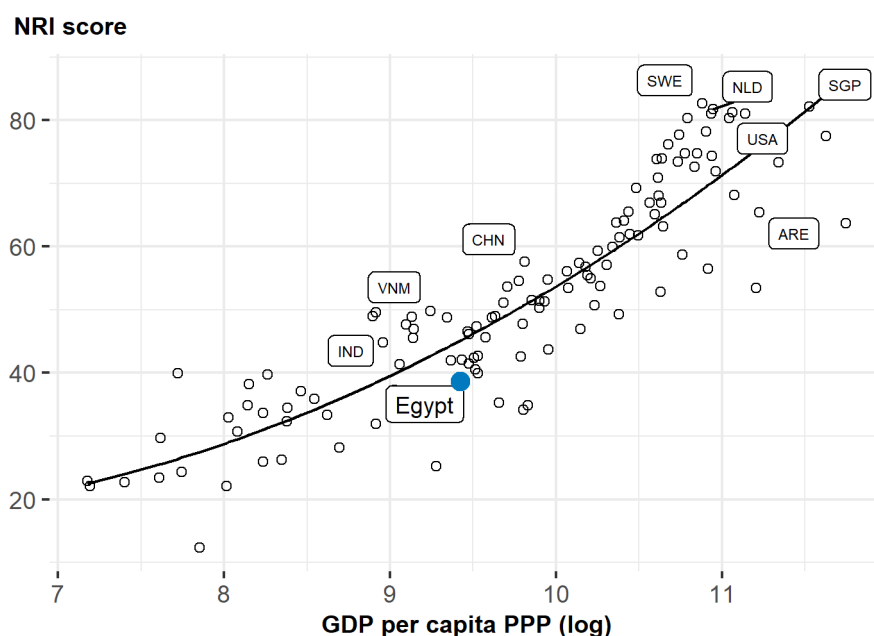
Table 1: Egypt rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Trust	73	SDG Contribution	90
Governments	78	Individuals	95
Access	79	Content	98
Future Technologies	85	Regulation	98
Economy	87	Inclusion	99
Businesses	88	Quality of Life	101

NRI score and income

Figure 3 shows the position of Egypt 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, Egypt 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Egypt belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

Lower-middle-income countries

Egypt is ranked 11th 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 three of the four pillars: Score, Technology, People and Governance. At the sub-pillar level, it outperforms lower-middle-income countries in six of the twelve sub-pillars: Access, Individuals, Businesses, Governments, Trust and SDG Contribution.

Arab States

Egypt is ranked 11th within Arab States (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 Arab States in one of the twelve sub-pillars: Trust.

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

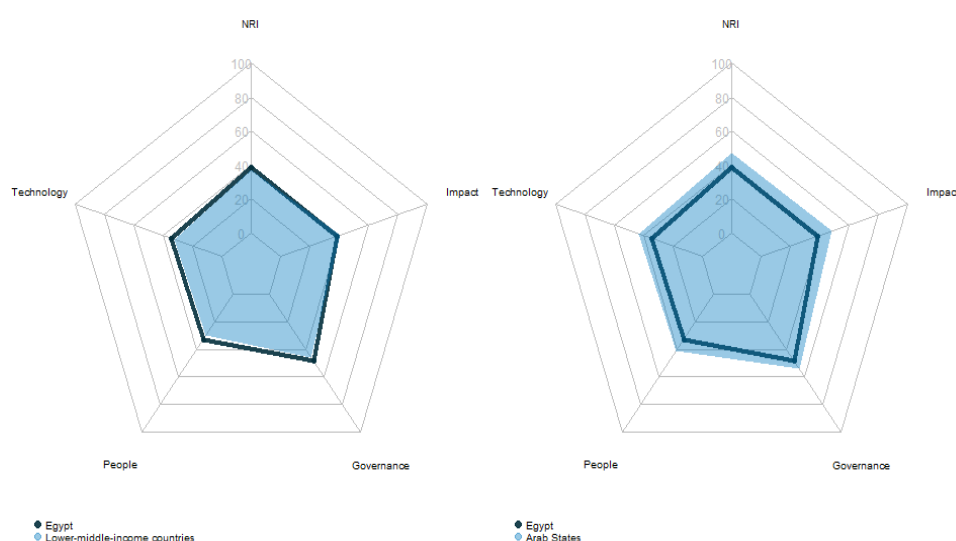


Table 2: Egypt scores vs. averages of its income group and region, overall and by pillar

Dimension	Egypt	Lower-middle-income countries	Arab States
NRI	38.58	37.18	46.82
Technology	34.35	32.15	43.54
People	32.68	30.04	41.30
Governance	48.54	46.17	54.28
Impact	38.74	40.35	48.18

Strongest and weakest indicators

The indicators where Egypt performs particularly well include Use of clean fuels and technology, Computer software spending, and Income inequality (Table 3). By contrast, the economy's weakest indicators include Pollution, Happiness, and Regulatory quality.

Table 3: Top-ranked and bottom-ranked indicators of Egypt

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Government online services	97
Computer software spending	21	E-commerce legislation	100
Income inequality	24	Freedom to make life choices	104
Cybersecurity	25	Socioeconomic gap in use of digital payments	106
R&D expenditure by governments and higher education	29	Internet shopping	107
Mobile tariffs	32	Secure Internet servers	108
Road safety	41	High-tech exports	108
Internet access in schools	43	Regulatory quality	112
ICT skills	47	Happiness	114
Access to basic services	53	Pollution	118

NRI 2019 At-A-Glance: Egypt

Network Readiness Index

Rank: 92 (out of 121)

Score: 38.58

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	88	34.35	C. Governance pillar	92	48.54
1st sub-pillar: Access	79	53.31	1st sub-pillar: Trust	73	51.07
2nd sub-pillar: Content	98	24.03	2nd sub-pillar: Regulation	98	49.36
3rd sub-pillar: Future Technologies	85	25.71	3rd sub-pillar: Inclusion	99	45.18
B. People pillar	90	32.68	D. Impact pillar	95	38.74
1st sub-pillar: Individuals	95	35.70	1st sub-pillar: Economy	87	11.78
2nd sub-pillar: Businesses	88	22.38	2nd sub-pillar: Quality of Life	101	45.49
3rd sub-pillar: Governments	78	39.95	3rd sub-pillar: SDG Contribution	90	58.95

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	32	77.03	3.1.1 Rule of law	87	43.93
1.1.2 Handset prices	91	34.14	3.1.2 Software piracy rate	55	40.54
1.1.3 Internet access	78	47.77	3.1.3 Secure Internet servers	108	30.25
1.1.4 4G mobile network coverage	69	89.00	3.1.4 Cybersecurity	25	90.24
1.1.5 Fixed-broadband subscriptions	93	14.60	3.1.5 Online trust and safety	65	50.38
1.1.6 International Internet bandwidth	85	63.29	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	43	47.37	3.2.1 Regulatory quality	112	32.32
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	94	52.75
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	78	38.16
1.2.2 Mobile apps development	95	41.69	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	65	42.06
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	75	80.89
1.3.1 Availability of latest technologies	84	41.56	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	73	31.72	3.3.1 E-Participation	95	47.77
1.3.3 Government procurement of advanced technology products	55	43.15	3.3.2 Socioeconomic gap in use of digital payments	106	37.66
1.3.4 ICT PCT patent applications	71	1.24	3.3.3 Availability of local online content	54	57.52
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	81	29.83
1.3.6 Robot density	61	0.22	3.3.5 Rural gap in use of digital payments	88	53.11
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	92	41.32	4.1.1 Medium and high-tech industry	90	17.62
2.1.2 Active mobile-broadband subscriptions	92	19.64	4.1.2 High-tech exports	108	1.64
2.1.3 Use of virtual social networks	87	38.67	4.1.3 PCT patent applications	74	0.11
2.1.4 Tertiary enrolment	76	25.29	4.1.4 Labour productivity per employee	56	27.74
2.1.5 Adult literacy rate	87	55.34	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	47	33.97	4.2.1 Happiness	114	19.75
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	104	35.44
2.2.1 Firms with website	66	42.97	4.2.3 Income inequality	24	82.11
2.2.2 Internet shopping	107	3.09	4.2.4 Healthy life expectancy at birth	96	44.69
2.2.3 Professionals	59	28.16	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	71	30.97	4.3.1 Access to basic services	53	95.58
2.2.5 Extent of staff training	96	28.26	4.3.2 Pollution	118	16.99
2.2.6 R&D expenditure by businesses	75	0.83	4.3.3 Road safety	41	78.12
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	71	4.07
2.3.1 Government online services	97	48.46	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	80	13.89	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	57	45.62			
2.3.4 R&D expenditure by governments and higher education	29	51.83			

* Confidential data

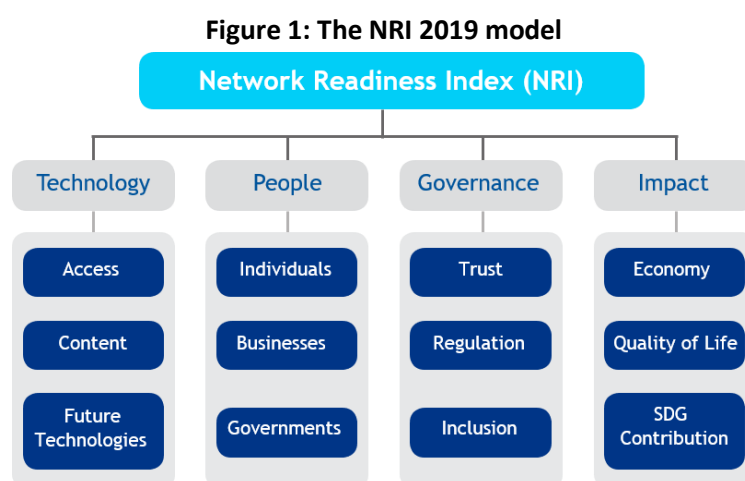
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Network Readiness Index 2019

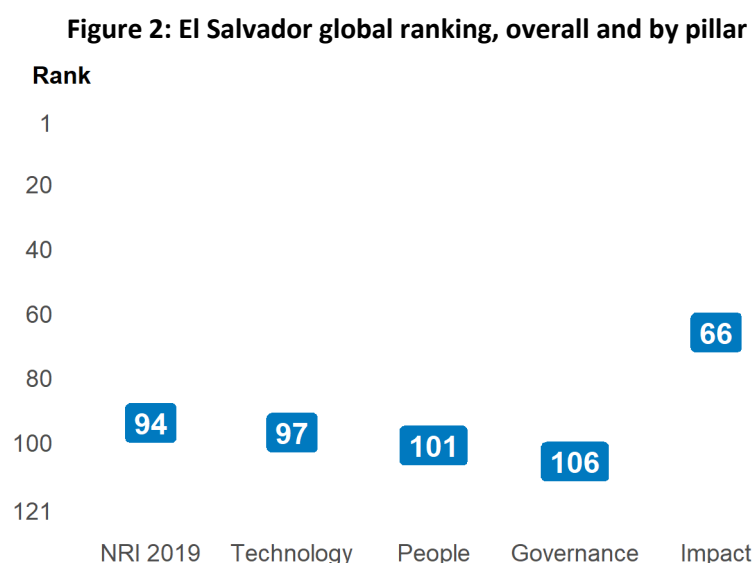
El Salvador

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of El Salvador

El Salvador ranks 94th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

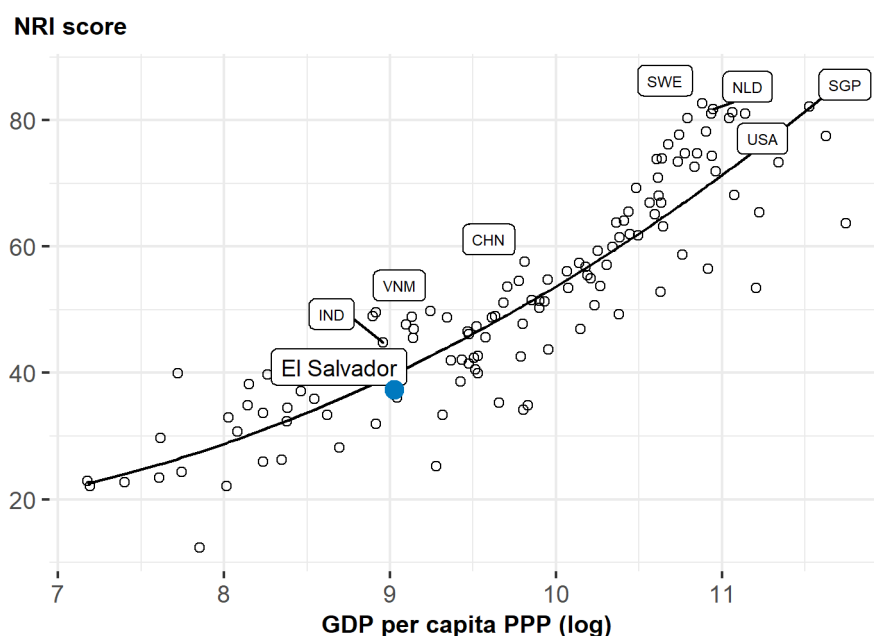
Table 1: El Salvador rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	45	Access	97
SDG Contribution	61	Businesses	103
Content	75	Regulation	104
Economy	86	Governments	106
Individuals	89	Trust	114
Inclusion	95	Future Technologies	117

NRI score and income

Figure 3 shows the position of El Salvador 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, El Salvador 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. El Salvador belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Lower-middle-income countries

El Salvador is ranked 13th 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: Score and Impact. At the sub-pillar level, it outperforms lower-middle-income countries in five of the twelve sub-pillars: Content, Individuals, Inclusion, Quality of Life and SDG Contribution.

The Americas

El Salvador is ranked 17th 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: Quality of Life and SDG Contribution.

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



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

Dimension	El Salvador	Lower-middle-income countries	The Americas
NRI	37.27	37.18	49.08
Technology	29.65	32.15	43.12
People	27.08	30.04	43.32
Governance	40.55	46.17	57.13
Impact	51.78	40.35	52.73

Strongest and weakest indicators

The indicators where El Salvador performs particularly well include International Internet bandwidth, Intellectual property receipts, and Happiness (Table 3). By contrast, the economy's weakest indicators include Cybersecurity, Government procurement of advanced technology products, Company investment in emerging technology, and Social safety net protection.

Table 3: Top-ranked and bottom-ranked indicators of El Salvador

Strongest indicators	Rank	Weakest indicators	Rank
International Internet bandwidth	22	Extent of staff training	104
Intellectual property receipts	25	ICT use and government efficiency	105
Happiness	37	Fixed-broadband subscriptions	106
Freedom to make life choices	45	Legal framework's adaptability to digital business models	106
Use of virtual social networks	49	Rule of law	108
Internet access in schools	51	Internet access	111
Adult literacy rate	64	Company investment in emerging technology	112
Income inequality	65	Social safety net protection	112
Gender gap in internet use	67	Government procurement of advanced technology products	115
R&D expenditure by businesses	68	Cybersecurity	117

NRI 2019 At-A-Glance: El Salvador

Network Readiness Index

Rank: 94 (out of 121)

Score: 37.27

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	97	29.65	C. Governance pillar	106	40.55
1st sub-pillar: Access	97	39.16	1st sub-pillar: Trust	114	27.69
2nd sub-pillar: Content	75	36.95	2nd sub-pillar: Regulation	104	45.85
3rd sub-pillar: Future Technologies	117	12.84	3rd sub-pillar: Inclusion	95	48.10
B. People pillar	101	27.08	D. Impact pillar	66	51.78
1st sub-pillar: Individuals	89	41.64	1st sub-pillar: Economy	86	11.95
2nd sub-pillar: Businesses	103	15.89	2nd sub-pillar: Quality of Life	45	67.78
3rd sub-pillar: Governments	106	23.72	3rd sub-pillar: SDG Contribution	61	75.60

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	99	39.95	3.1.1 Rule of law	108	34.52
1.1.2 Handset prices	69	43.74	3.1.2 Software piracy rate	83	12.16
1.1.3 Internet access	111	11.51	3.1.3 Secure Internet servers	99	38.41
1.1.4 4G mobile network coverage	90	68.00	3.1.4 Cybersecurity	117	11.51
1.1.5 Fixed-broadband subscriptions	106	1.06	3.1.5 Online trust and safety	75	41.86
1.1.6 International Internet bandwidth	22	74.08	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	51	35.77	3.2.1 Regulatory quality	70	50.56
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	83	61.94
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	106	23.83
1.2.2 Mobile apps development	80	51.39	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	25	3.44	3.2.5 Social safety net protection	112	16.37
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	89	72.40
1.3.1 Availability of latest technologies	93	37.24	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	112	12.04	3.3.1 E-Participation	79	60.51
1.3.3 Government procurement of advanced technology products	115	14.94	3.3.2 Socioeconomic gap in use of digital payments	100	41.00
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	94	33.24
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	67	54.81
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	94	50.94
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	102	26.73	4.1.1 Medium and high-tech industry	79	24.23
2.1.2 Active mobile-broadband subscriptions	88	20.41	4.1.2 High-tech exports	68	11.61
2.1.3 Use of virtual social networks	49	58.42	4.1.3 PCT patent applications	85	0.01
2.1.4 Tertiary enrolment	81	20.45	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	64	82.18	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	37	67.05
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	45	77.48
2.2.1 Firms with website	78	31.02	4.2.3 Income inequality	65	65.79
2.2.2 Internet shopping	97	3.91	4.2.4 Healthy life expectancy at birth	74	60.81
2.2.3 Professionals	86	16.29	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	92	17.64	4.3.1 Access to basic services	74	89.99
2.2.5 Extent of staff training	104	25.01	4.3.2 Pollution	75	80.03
2.2.6 R&D expenditure by businesses	68	1.48	4.3.3 Road safety	91	39.06
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	87	58.46	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	81	13.88	4.3.6 Use of clean fuels and technology	73	93.33
2.3.3 ICT use and government efficiency	105	15.73			
2.3.4 R&D expenditure by governments and higher education	92	6.81			

* Confidential data

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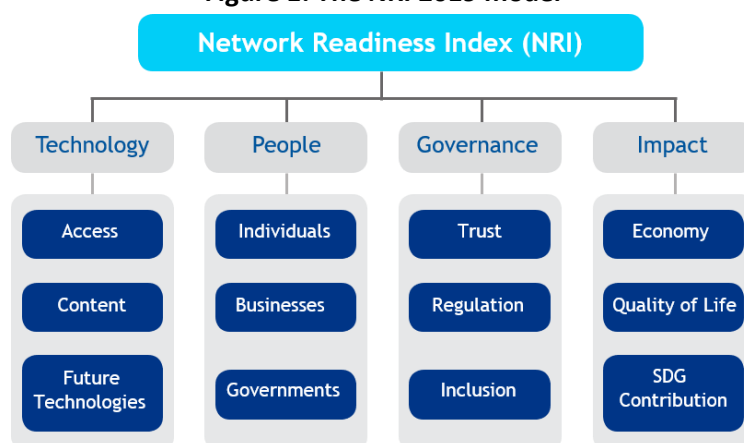
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Network Readiness Index 2019

Estonia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

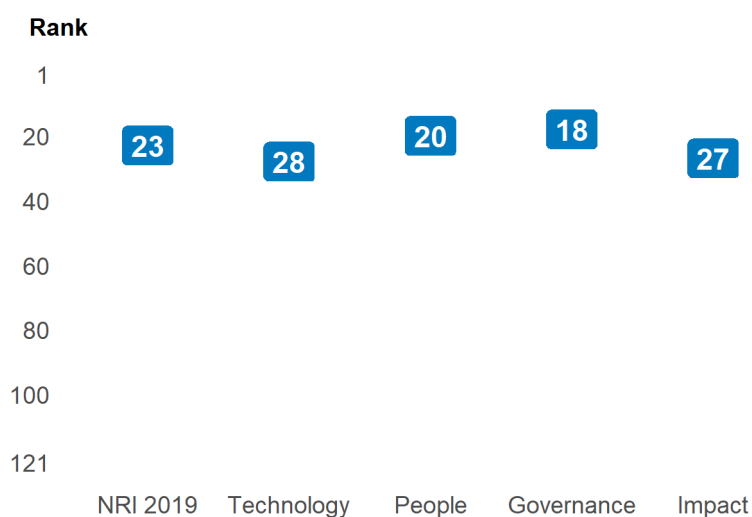
Figure 1: The NRI 2019 model



Global NRI position of Estonia

Estonia ranks 23rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Estonia global ranking, overall and by pillar



Performance at sub-pillar level

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

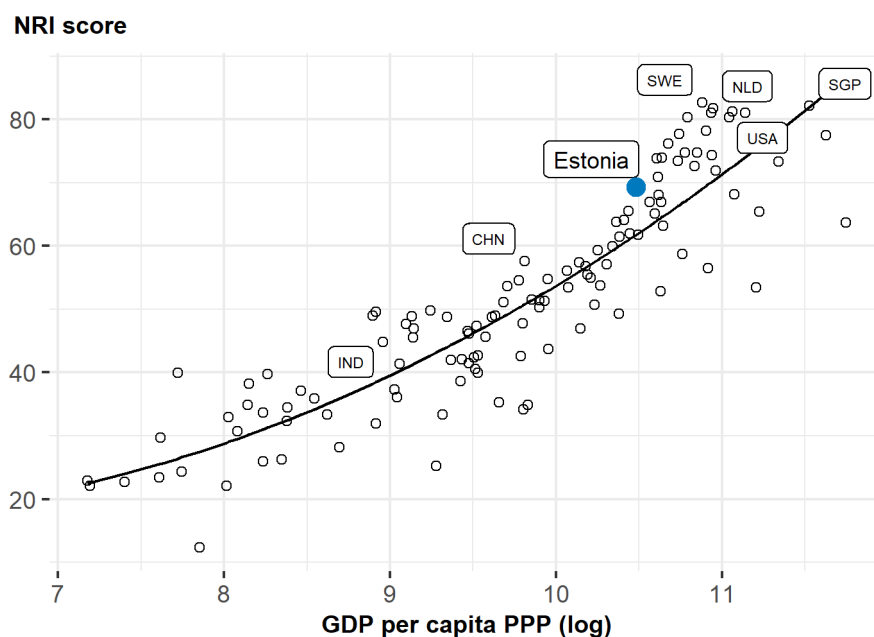
Table 1: Estonia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	7	Trust	22
Inclusion	11	Access	26
Individuals	13	Businesses	26
Content	15	Quality of Life	28
Governments	19	Future Technologies	41
Regulation	19	Economy	42

NRI score and income

Figure 3 shows the position of Estonia 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, Estonia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Estonia belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Estonia is ranked 23rd 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 two of the four pillars: Score, People and Governance. At the sub-pillar level, it outperforms high-income countries in nine of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion and SDG Contribution.

Europe

Estonia is ranked 16th 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 ten of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

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



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

Dimension	Estonia	High-income countries	Europe
NRI	69.30	68.12	65.20
Technology	64.34	66.07	63.08
People	64.70	61.07	57.50
Governance	81.63	77.07	73.99
Impact	66.54	68.29	66.24

Strongest and weakest indicators

The indicators where Estonia performs particularly well include Internet access in schools, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Computer software spending, Intellectual property receipts, and Online trust and safety.

Table 3: Top-ranked and bottom-ranked indicators of Estonia

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	ICT regulatory environment	45
E-commerce legislation	1	Handset prices	46
Use of clean fuels and technology	1	Social safety net protection	46
ICT use and government efficiency	2	Happiness	47
Adult literacy rate	3	Government procurement of advanced technology products	48
Active mobile-broadband subscriptions	5	Medium and high-tech industry	53
Cybersecurity	5	Use of virtual social networks	56
Legal framework's adaptability to digital business models	5	Online trust and safety	59
Pollution	6	Intellectual property receipts	65
Secure Internet servers	9	Computer software spending	77

NRI 2019 At-A-Glance: Estonia

Network Readiness Index

Rank: 23 (out of 121)

Score: 69.30

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	28	64.34	C. Governance pillar	18	81.63
1st sub-pillar: Access	26	82.62	1st sub-pillar: Trust	22	78.27
2nd sub-pillar: Content	15	71.64	2nd sub-pillar: Regulation	19	83.60
3rd sub-pillar: Future Technologies	41	38.77	3rd sub-pillar: Inclusion	11	83.02
B. People pillar	20	64.70	D. Impact pillar	27	66.54
1st sub-pillar: Individuals	13	70.45	1st sub-pillar: Economy	42	28.67
2nd sub-pillar: Businesses	26	54.57	2nd sub-pillar: Quality of Life	28	74.08
3rd sub-pillar: Governments	19	69.07	3rd sub-pillar: SDG Contribution	7	96.87

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	33	75.27	3.1.1 Rule of law	22	81.63
1.1.2 Handset prices	46	55.61	3.1.2 Software piracy rate	29	64.86
1.1.3 Internet access	17	89.85	3.1.3 Secure Internet servers	9	92.13
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	5	97.15
1.1.5 Fixed-broadband subscriptions	42	85.12	3.1.5 Online trust and safety	59	55.56
1.1.6 International Internet bandwidth	27	73.46	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	17	85.83
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	17	89.12
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	5	86.35
1.2.2 Mobile apps development	22	84.08	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	65	0.41	3.2.5 Social safety net protection	46	52.28
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	45	88.03
1.3.1 Availability of latest technologies	25	77.27	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	35	55.43	3.3.1 E-Participation	27	89.81
1.3.3 Government procurement of advanced technology products	48	45.81	3.3.2 Socioeconomic gap in use of digital payments	16	95.47
1.3.4 ICT PCT patent applications	24	39.38	3.3.3 Availability of local online content	14	86.73
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	21	66.52
1.3.6 Robot density	40	5.63	3.3.5 Rural gap in use of digital payments	17	76.59
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	19	88.54	4.1.1 Medium and high-tech industry	53	35.38
2.1.2 Active mobile-broadband subscriptions	5	57.66	4.1.2 High-tech exports	25	32.07
2.1.3 Use of virtual social networks	56	56.34	4.1.3 PCT patent applications	30	7.03
2.1.4 Tertiary enrolment	30	50.68	4.1.4 Labour productivity per employee	41	40.20
2.1.5 Adult literacy rate	3	99.86	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	15	69.64	4.2.1 Happiness	47	63.20
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	33	82.67
2.2.1 Firms with website	20	77.58	4.2.3 Income inequality	32	79.74
2.2.2 Internet shopping	24	59.87	4.2.4 Healthy life expectancy at birth	41	70.70
2.2.3 Professionals	19	53.98	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	26	59.68	4.3.1 Access to basic services	26	99.25
2.2.5 Extent of staff training	30	60.46	4.3.2 Pollution	6	98.86
2.2.6 R&D expenditure by businesses	34	15.84	4.3.3 Road safety	22	89.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	26	89.23	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	44	36.31	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	2	89.01			
2.3.4 R&D expenditure by governments and higher education	17	61.74			

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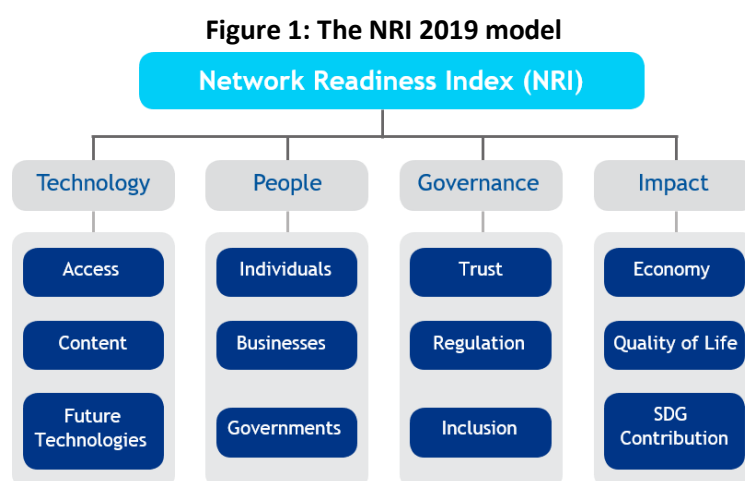
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Network Readiness Index 2019

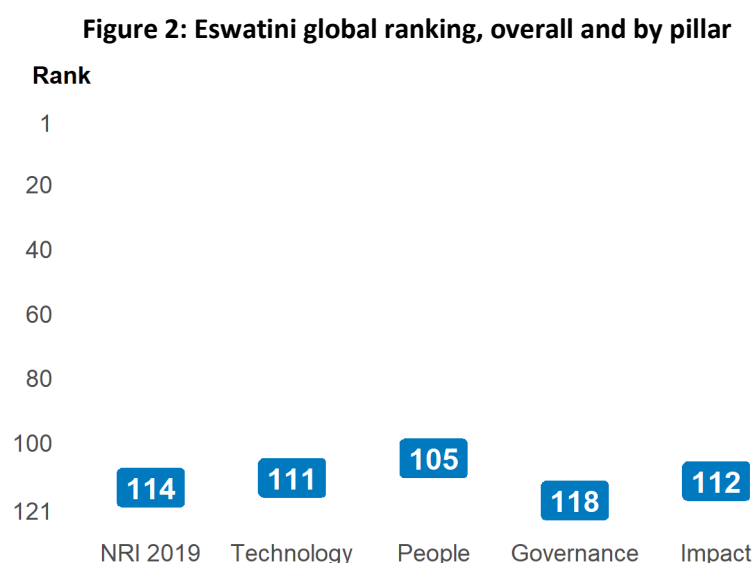
Eswatini

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Eswatini

Eswatini ranks 114th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

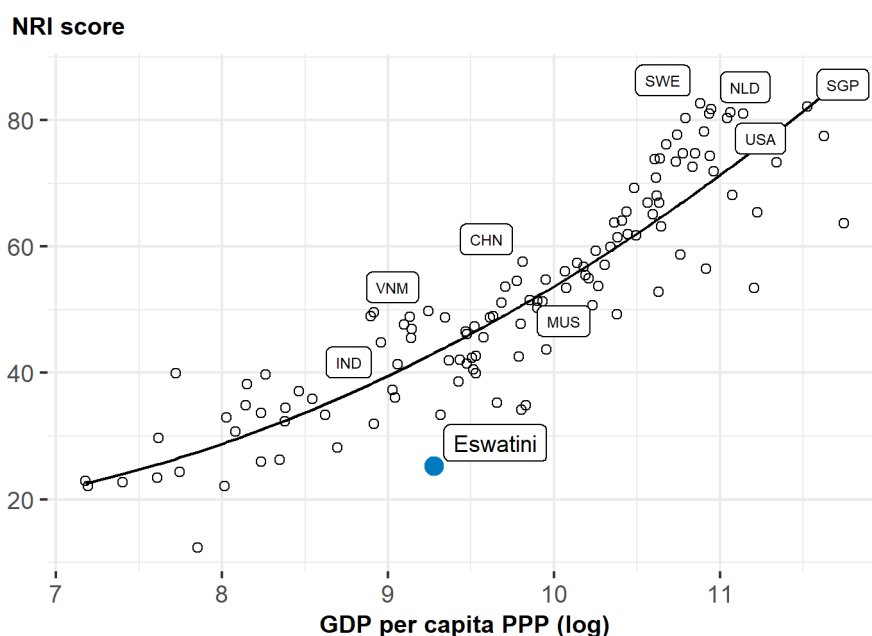
Table 1: Eswatini rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	66	Access	111
SDG Contribution	95	Regulation	112
Future Technologies	101	Governments	117
Individuals	101	Inclusion	120
Content	107	Quality of Life	120
Trust	110	Economy	121

NRI score and income

Figure 3 shows the position of Eswatini 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, Eswatini 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Eswatini belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries

Eswatini is ranked 24th in the group of lower-middle-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 outperforms lower-middle-income countries in one of the twelve sub-pillars: Businesses.

Africa

Eswatini is ranked 14th within Africa (Figure 4, right panel). It has a score above the regional average in one of the four pillars: People. With regard to sub-pillars, it outperforms the average in Africa in three of the twelve sub-pillars: Individuals, Businesses and SDG Contribution.

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



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

Dimension	Eswatini	Lower-middle-income countries	Africa
NRI	25.19	37.18	31.07
Technology	20.92	32.15	26.03
People	24.93	30.04	23.76
Governance	28.12	46.17	45.32
Impact	26.79	40.35	29.15

Strongest and weakest indicators

The indicators where Eswatini performs particularly well include Pollution, Firms with website, and Internet access in schools (Table 3). By contrast, the economy's weakest indicators include Healthy life expectancy at birth, Availability of latest technologies, Active mobile-broadband subscriptions, and Medium and high-tech industry.

Table 3: Top-ranked and bottom-ranked indicators of Eswatini

Strongest indicators	Rank	Weakest indicators	Rank
Pollution	50	Handset prices	112
Firms with website	54	International Internet bandwidth	113
Internet access in schools	56	Legal framework's adaptability to digital business models	113
Professionals	56	High-tech exports	114
Extent of staff training	57	Cybersecurity	115
Government procurement of advanced technology products	64	Company investment in emerging technology	116
Adult literacy rate	65	Availability of latest technologies	117
Rule of law	74	Active mobile-broadband subscriptions	117
R&D expenditure by governments and higher education	77	Medium and high-tech industry	117
R&D expenditure by businesses	87	Healthy life expectancy at birth	119

NRI 2019 At-A-Glance: Eswatini

Network Readiness Index

Rank: 114 (out of 121)

Score: 25.19

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	111	20.92	C. Governance pillar	118	28.12
1st sub-pillar: Access	111	28.36	1st sub-pillar: Trust	110	31.36
2nd sub-pillar: Content	107	13.85	2nd sub-pillar: Regulation	112	35.22
3rd sub-pillar: Future Technologies	101	20.55	3rd sub-pillar: Inclusion	120	17.77
B. People pillar	105	24.93	D. Impact pillar	112	26.79
1st sub-pillar: Individuals	101	29.13	1st sub-pillar: Economy	121	1.17
2nd sub-pillar: Businesses	66	29.02	2nd sub-pillar: Quality of Life	120	25.27
3rd sub-pillar: Governments	117	16.64	3rd sub-pillar: SDG Contribution	95	53.92

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	102	38.10	3.1.1 Rule of law	74	47.67
1.1.2 Handset prices	112	17.24	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	94	22.12	3.1.3 Secure Internet servers	104	33.91
1.1.4 4G mobile network coverage	98	54.00	3.1.4 Cybersecurity	115	12.50
1.1.5 Fixed-broadband subscriptions	111	0.09	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	113	51.73	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	56	15.25	3.2.1 Regulatory quality	101	38.11
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	98	51.76
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	113	10.95
1.2.2 Mobile apps development	103	34.11	3.2.4 E-commerce legislation	110	25.00
1.2.3 Intellectual property receipts	93	0.01	3.2.5 Social safety net protection	91	29.51
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	110	55.98
1.3.1 Availability of latest technologies	117	17.13	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	116	4.30	3.3.1 E-Participation	109	24.21
1.3.3 Government procurement of advanced technology products	64	40.21	3.3.2 Socioeconomic gap in use of digital payments	NA	NA
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	109	11.34
1.3.5 Computer software spending	NA	NA	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	NA	NA
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	90	41.40	4.1.1 Medium and high-tech industry	117	1.79
2.1.2 Active mobile-broadband subscriptions	117	4.07	4.1.2 High-tech exports	114	0.56
2.1.3 Use of virtual social networks	106	13.72	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	108	4.36	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	65	82.09	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	111	24.04
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	100	42.00
2.2.1 Firms with website	54	56.99	4.2.3 Income inequality	101	30.26
2.2.2 Internet shopping	NA	NA	4.2.4 Healthy life expectancy at birth	119	4.76
2.2.3 Professionals	56	29.95	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	94	16.96	4.3.1 Access to basic services	105	52.09
2.2.5 Extent of staff training	57	41.16	4.3.2 Pollution	50	88.12
2.2.6 R&D expenditure by businesses	87	0.05	4.3.3 Road safety	106	24.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	109	30.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	101	0.28	4.3.6 Use of clean fuels and technology	93	51.11
2.3.3 ICT use and government efficiency	103	18.94			
2.3.4 R&D expenditure by governments and higher education	77	16.56			

* Confidential data

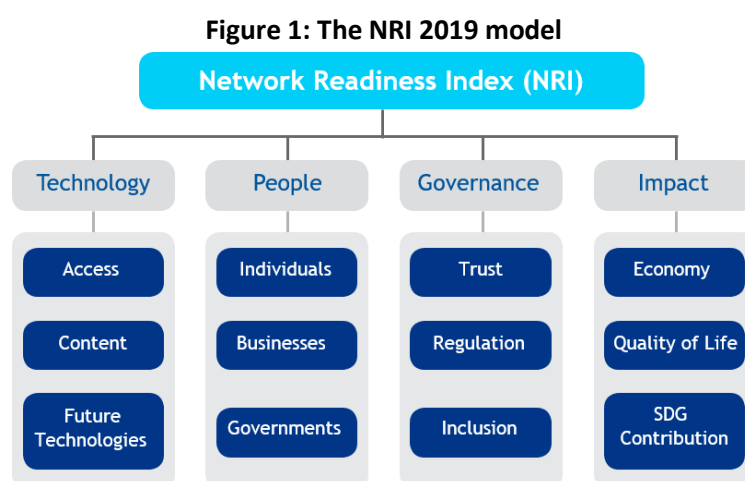
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Network Readiness Index 2019

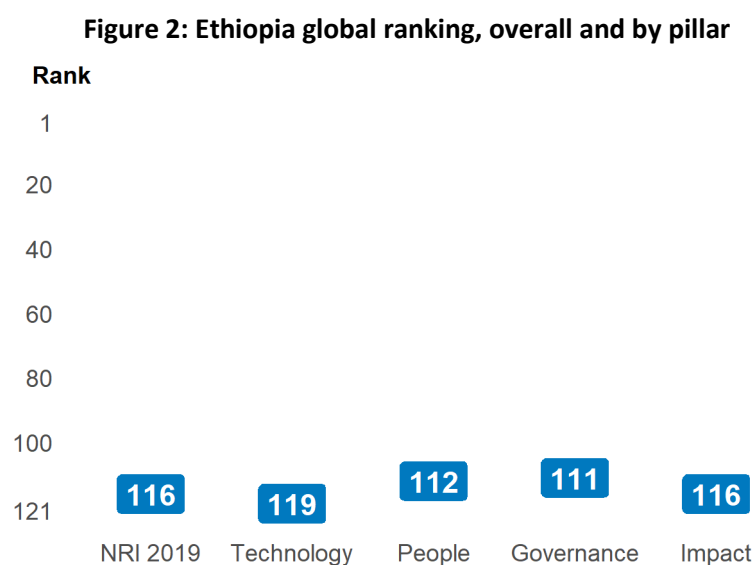
Ethiopia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Ethiopia

Ethiopia ranks 116th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

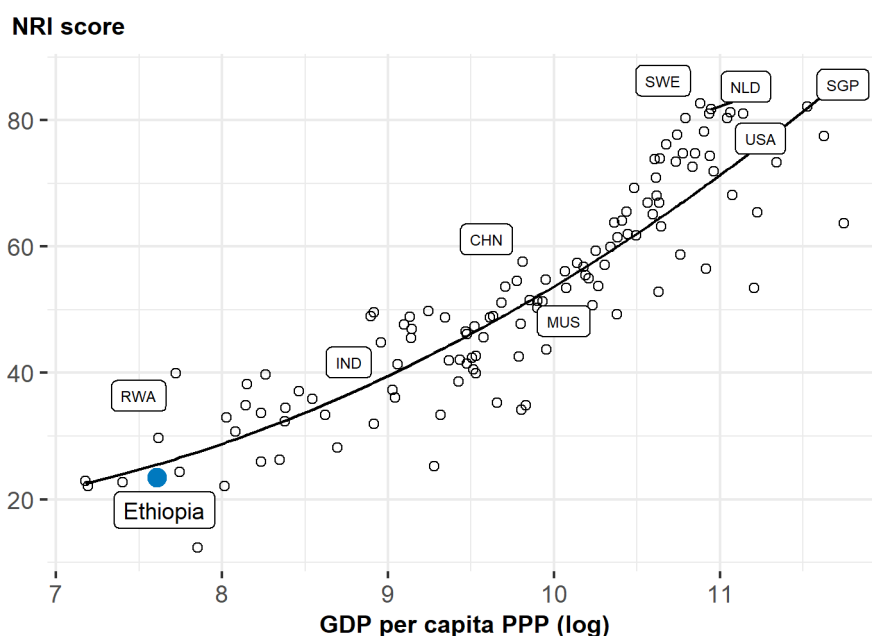
Table 1: Ethiopia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	77	Regulation	116
Future Technologies	89	Businesses	117
Economy	90	Individuals	119
Quality of Life	102	Access	120
Trust	103	Content	121
Inclusion	110	SDG Contribution	121

NRI score and income

Figure 3 shows the position of Ethiopia 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, Ethiopia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Ethiopia belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Low-income countries

Ethiopia is ranked 7th in the group of low-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: People. At the sub-pillar level, it outperforms low-income countries in three of the twelve sub-pillars: Governments, Economy and Quality of Life.

Africa

Ethiopia is ranked 16th within Africa (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 Africa in three of the twelve sub-pillars: Governments, Economy and Quality of Life.

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



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

Dimension	Ethiopia	Low-income countries	Africa
NRI	23.37	26.91	31.07
Technology	12.62	20.09	26.03
People	20.09	18.24	23.76
Governance	35.57	41.33	45.32
Impact	25.21	27.97	29.15

Strongest and weakest indicators

The indicators where Ethiopia performs particularly well include Online trust and safety, R&D expenditure by governments and higher education, and Government procurement of advanced technology products (Table 3). By contrast, the economy's weakest indicators include Digital participation and content creation, Secure Internet servers, and Access to basic services.

Table 3: Top-ranked and bottom-ranked indicators of Ethiopia

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	21	Socioeconomic gap in use of digital payments	115
R&D expenditure by governments and higher education	24	Use of virtual social networks	117
Government procurement of advanced technology products	39	4G mobile network coverage	118
Income inequality	47	Handset prices	119
Maths proficiency in schools	63	ICT regulatory environment	119
High-tech exports	69	International Internet bandwidth	120
Reading proficiency in schools	70	Mobile apps development	120
Social safety net protection	77	Digital participation and content creation	121
Publication and use of open data	78	Secure Internet servers	121
R&D expenditure by businesses	84	Access to basic services	121

NRI 2019 At-A-Glance: Ethiopia

Network Readiness Index

Rank: 116 (out of 121)

Score: 23.37

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	119	12.62	C. Governance pillar	111	35.57
1st sub-pillar: Access	120	14.67	1st sub-pillar: Trust	103	37.21
2nd sub-pillar: Content	121	0.31	2nd sub-pillar: Regulation	116	33.06
3rd sub-pillar: Future Technologies	89	22.90	3rd sub-pillar: Inclusion	110	36.44
B. People pillar	112	20.09	D. Impact pillar	116	25.21
1st sub-pillar: Individuals	119	9.64	1st sub-pillar: Economy	90	10.66
2nd sub-pillar: Businesses	117	9.92	2nd sub-pillar: Quality of Life	102	45.44
3rd sub-pillar: Governments	77	40.69	3rd sub-pillar: SDG Contribution	121	19.54

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	114	24.34	3.1.1 Rule of law	89	43.57
1.1.2 Handset prices	119	2.68	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	107	12.49	3.1.3 Secure Internet servers	121	0.00
1.1.4 4G mobile network coverage	118	7.00	3.1.4 Cybersecurity	99	28.40
1.1.5 Fixed-broadband subscriptions	102	3.08	3.1.5 Online trust and safety	21	76.86
1.1.6 International Internet bandwidth	120	38.41	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	115	29.97
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	115	31.38
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	94	31.35
1.2.2 Mobile apps development	120	1.52	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	96	0.01	3.2.5 Social safety net protection	77	34.79
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	119	20.85
1.3.1 Availability of latest technologies	114	21.72	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	95	22.20	3.3.1 E-Participation	91	51.59
1.3.3 Government procurement of advanced technology products	39	47.67	3.3.2 Socioeconomic gap in use of digital payments	115	19.44
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	102	24.54
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	95	50.20
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	113	9.81	4.1.1 Medium and high-tech industry	85	20.30
2.1.2 Active mobile-broadband subscriptions	115	4.86	4.1.2 High-tech exports	69	11.06
2.1.3 Use of virtual social networks	117	2.91	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	106	5.36	4.1.4 Labour productivity per employee	106	0.63
2.1.5 Adult literacy rate	94	25.27	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	108	27.53
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	92	49.03
2.2.1 Firms with website	92	21.03	4.2.3 Income inequality	47	73.68
2.2.2 Internet shopping	115	0.00	4.2.4 Healthy life expectancy at birth	105	31.50
2.2.3 Professionals	110	4.62	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	112	4.71	4.3.1 Access to basic services	121	0.00
2.2.5 Extent of staff training	92	29.00	4.3.2 Pollution	96	67.69
2.2.6 R&D expenditure by businesses	84	0.18	4.3.3 Road safety	105	25.00
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	70	9.17
2.3.1 Government online services	85	59.23	4.3.5 Maths proficiency in schools	63	15.37
2.3.2 Publication and use of open data	78	16.14	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	89	33.44			
2.3.4 R&D expenditure by governments and higher education	24	53.97			

* Confidential data

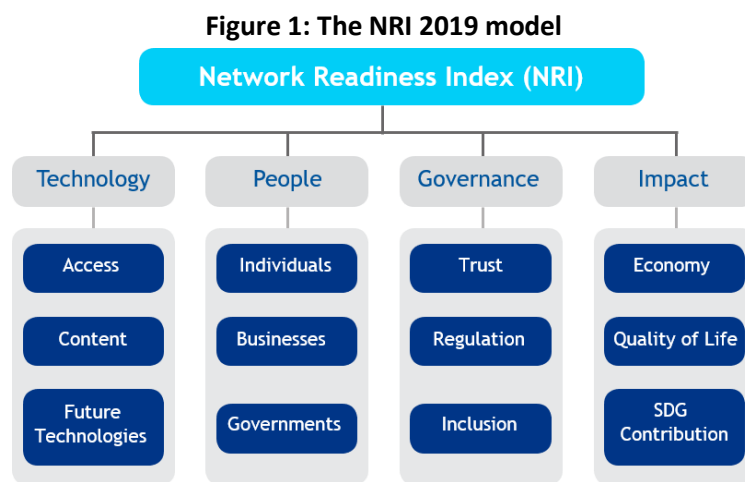
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Network Readiness Index 2019

Finland

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Finland

Finland ranks 7th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology and People. The greatest scope for improvement, meanwhile, concerns Governance and Impact.



Performance at sub-pillar level

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

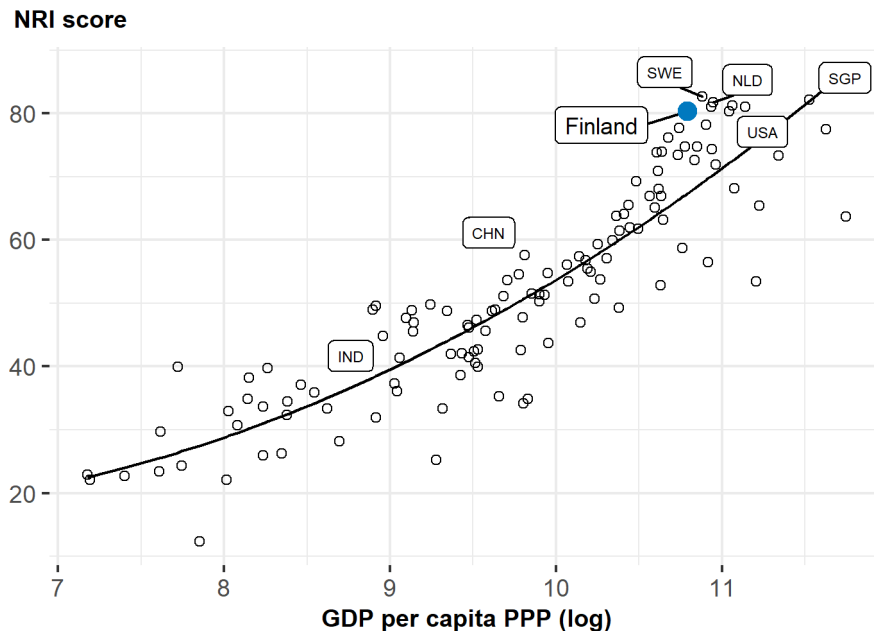
Table 1: Finland rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Regulation	2	Inclusion	9
Quality of Life	2	Governments	11
Businesses	5	SDG Contribution	11
Future Technologies	6	Individuals	12
Trust	7	Access	15
Content	9	Economy	16

NRI score and income

Figure 3 shows the position of Finland 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, Finland 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Finland belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Finland is ranked 7th 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 each of the four pillars. At the sub-pillar level, it has a higher score than the average of high-income countries in all of them.

Europe

Finland is ranked 6th within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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



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

Dimension	Finland	High-income countries	Europe
NRI	80.34	68.12	65.20
Technology	78.66	66.07	63.08
People	75.28	61.07	57.50
Governance	88.15	77.07	73.99
Impact	79.27	68.29	66.24

Strongest and weakest indicators

The indicators where Finland performs particularly well include Internet access in schools, Availability of latest technologies, and Firms with website (Table 3). By contrast, the economy's weakest indicators include High-tech exports, Use of virtual social networks, and Online trust and safety.

Table 3: Top-ranked and bottom-ranked indicators of Finland

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	ICT regulatory environment	22
Availability of latest technologies	1	Mobile apps development	23
Firms with website	1	Fixed-broadband subscriptions	25
Rule of law	1	Healthy life expectancy at birth	25
E-commerce legislation	1	Medium and high-tech industry	27
E-Participation	1	Gender gap in internet use	40
Happiness	1	International Internet bandwidth	43
Use of clean fuels and technology	1	Online trust and safety	44
Pollution	2	Use of virtual social networks	49
ICT PCT patent applications	4	High-tech exports	52

NRI 2019 At-A-Glance: Finland

Network Readiness Index

Rank: 7 (out of 121)

Score: 80.34

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	5	78.66	C. Governance pillar	7	88.15
1st sub-pillar: Access	15	86.44	1st sub-pillar: Trust	7	87.51
2nd sub-pillar: Content	9	78.32	2nd sub-pillar: Regulation	2	92.30
3rd sub-pillar: Future Technologies	6	71.21	3rd sub-pillar: Inclusion	9	84.64
B. People pillar	5	75.28	D. Impact pillar	7	79.27
1st sub-pillar: Individuals	12	70.99	1st sub-pillar: Economy	16	48.64
2nd sub-pillar: Businesses	5	75.71	2nd sub-pillar: Quality of Life	2	93.19
3rd sub-pillar: Governments	11	79.14	3rd sub-pillar: SDG Contribution	11	95.99

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	22	82.27	3.1.1 Rule of law	1	100.00
1.1.2 Handset prices	16	70.36	3.1.2 Software piracy rate	13	90.54
1.1.3 Internet access	20	88.21	3.1.3 Secure Internet servers	13	89.02
1.1.4 4G mobile network coverage	9	99.90	3.1.4 Cybersecurity	21	91.78
1.1.5 Fixed-broadband subscriptions	25	93.26	3.1.5 Online trust and safety	44	66.21
1.1.6 International Internet bandwidth	43	71.09	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	7	90.76
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	19	88.35
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	11	82.74
1.2.2 Mobile apps development	23	83.22	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	6	28.27	3.2.5 Social safety net protection	7	98.11
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	22	93.83
1.3.1 Availability of latest technologies	1	100.00	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	6	86.85	3.3.1 E-Participation	1	100.00
1.3.3 Government procurement of advanced technology products	19	60.98	3.3.2 Socioeconomic gap in use of digital payments	5	98.64
1.3.4 ICT PCT patent applications	4	83.34	3.3.3 Availability of local online content	15	86.14
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	40	61.70
1.3.6 Robot density	19	41.52	3.3.5 Rural gap in use of digital payments	16	76.73
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	20	88.02	4.1.1 Medium and high-tech industry	27	52.82
2.1.2 Active mobile-broadband subscriptions	4	61.65	4.1.2 High-tech exports	52	16.91
2.1.3 Use of virtual social networks	49	58.42	4.1.3 PCT patent applications	6	67.93
2.1.4 Tertiary enrolment	7	64.35	4.1.4 Labour productivity per employee	19	56.91
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	10	82.49	4.2.1 Happiness	1	100.00
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	11	94.76
2.2.1 Firms with website	1	100.00	4.2.3 Income inequality	7	94.47
2.2.2 Internet shopping	12	77.92	4.2.4 Healthy life expectancy at birth	25	83.52
2.2.3 Professionals	10	65.92	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	7	84.06	4.3.1 Access to basic services	18	99.64
2.2.5 Extent of staff training	9	80.65	4.3.2 Pollution	2	99.83
2.2.6 R&D expenditure by businesses	10	45.74	4.3.3 Road safety	13	93.75
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	5	99.08
2.3.1 Government online services	8	96.16	4.3.5 Maths proficiency in schools	11	83.66
2.3.2 Publication and use of open data	21	55.89	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	11	78.93			
2.3.4 R&D expenditure by governments and higher education	4	85.59			

* Confidential data

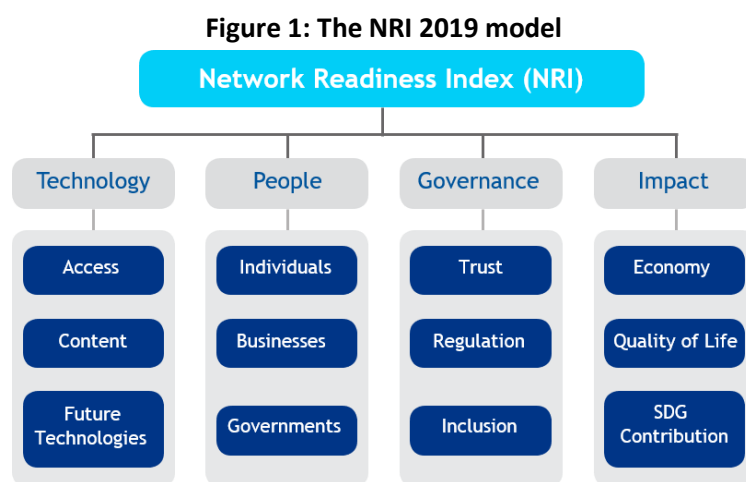
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Network Readiness Index 2019

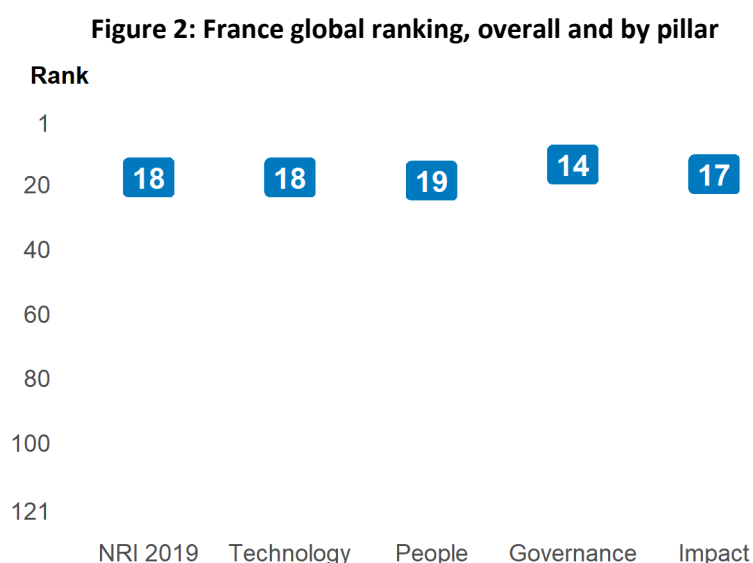
France

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of France

France ranks 18th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

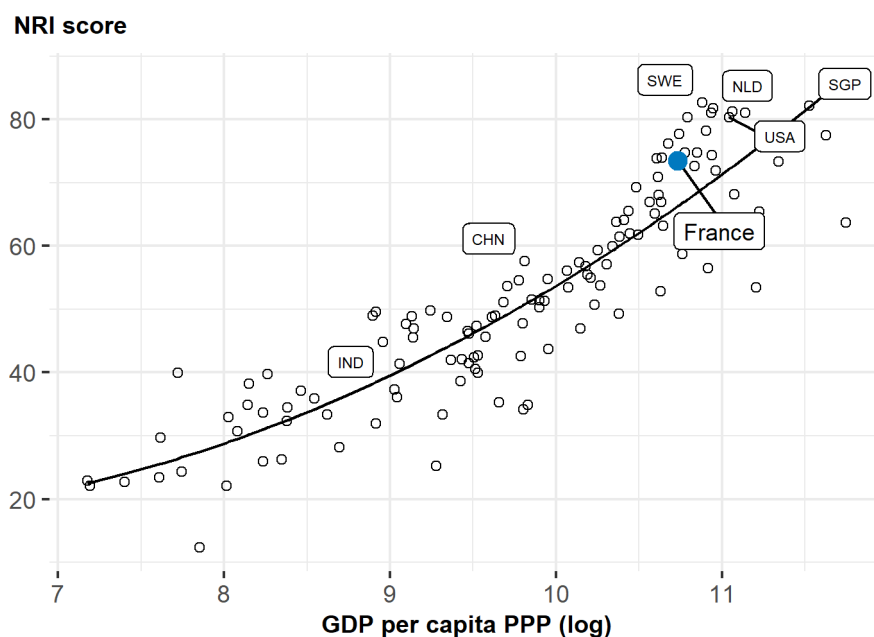
Table 1: France rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Trust	6	Businesses	20
Governments	13	Quality of Life	22
Economy	14	Access	23
Inclusion	15	Content	26
Regulation	16	SDG Contribution	37
Future Technologies	18	Individuals	54

NRI score and income

Figure 3 shows the position of France 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, France 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. France belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

France is ranked 18th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

France is ranked 11th 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 nine of the twelve sub-pillars: Access, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy and Quality of Life.

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

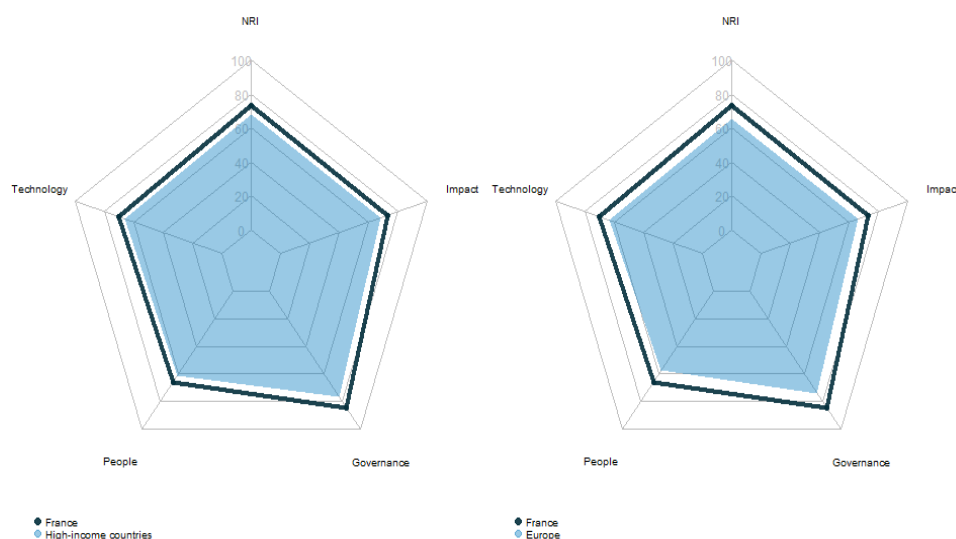


Table 2: France scores vs. averages of its income group and region, overall and by pillar

Dimension	France	High-income countries	Europe
NRI	73.42	68.12	65.20
Technology	69.93	66.07	63.08
People	65.88	61.07	57.50
Governance	84.85	77.07	73.99
Impact	73.04	68.29	66.24

Strongest and weakest indicators

The indicators where France performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Publication and use of open data (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, International Internet bandwidth, and Mobile tariffs.

Table 3: Top-ranked and bottom-ranked indicators of France

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Government procurement of advanced technology products	36
Use of clean fuels and technology	1	Tertiary enrolment	37
Publication and use of open data	3	Internet access	40
Cybersecurity	3	Active mobile-broadband subscriptions	40
Government online services	4	Legal framework's adaptability to digital business models	40
Online trust and safety	4	Gender gap in internet use	49
Technicians and associate professionals	5	Use of virtual social networks	54
Healthy life expectancy at birth	5	Mobile tariffs	61
Social safety net protection	6	International Internet bandwidth	62
Handset prices	7	Freedom to make life choices	66

NRI 2019 At-A-Glance: France

Network Readiness Index

Rank: 18 (out of 121)

Score: 73.42

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	18	69.93	C. Governance pillar	14	84.85
1st sub-pillar: Access	23	83.83	1st sub-pillar: Trust	6	87.80
2nd sub-pillar: Content	26	66.80	2nd sub-pillar: Regulation	16	84.58
3rd sub-pillar: Future Technologies	18	59.17	3rd sub-pillar: Inclusion	15	82.16
B. People pillar	19	65.88	D. Impact pillar	17	73.04
1st sub-pillar: Individuals	54	57.14	1st sub-pillar: Economy	14	51.87
2nd sub-pillar: Businesses	20	62.54	2nd sub-pillar: Quality of Life	22	77.82
3rd sub-pillar: Governments	13	77.96	3rd sub-pillar: SDG Contribution	37	89.42

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	61	65.09	3.1.1 Rule of law	20	86.18
1.1.2 Handset prices	7	81.65	3.1.2 Software piracy rate	20	77.03
1.1.3 Internet access	40	81.19	3.1.3 Secure Internet servers	19	84.67
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	3	98.57
1.1.5 Fixed-broadband subscriptions	23	93.56	3.1.5 Online trust and safety	4	92.54
1.1.6 International Internet bandwidth	62	68.34	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	27	97.99	3.2.1 Regulatory quality	27	77.25
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	31	82.38
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	40	53.22
1.2.2 Mobile apps development	27	80.84	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	11	13.76	3.2.5 Social safety net protection	6	98.51
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	11	96.14
1.3.1 Availability of latest technologies	19	85.05	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	22	64.53	3.3.1 E-Participation	13	96.18
1.3.3 Government procurement of advanced technology products	36	49.51	3.3.2 Socioeconomic gap in use of digital payments	12	96.36
1.3.4 ICT PCT patent applications	19	55.86	3.3.3 Availability of local online content	21	82.44
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	49	59.65
1.3.6 Robot density	17	45.52	3.3.5 Rural gap in use of digital payments	21	76.15
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	32	80.40	4.1.1 Medium and high-tech industry	13	63.98
2.1.2 Active mobile-broadband subscriptions	40	35.09	4.1.2 High-tech exports	9	49.11
2.1.3 Use of virtual social networks	54	57.38	4.1.3 PCT patent applications	15	33.33
2.1.4 Tertiary enrolment	37	47.73	4.1.4 Labour productivity per employee	14	61.07
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	18	65.11	4.2.1 Happiness	23	75.17
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	66	66.64
2.2.1 Firms with website	35	65.95	4.2.3 Income inequality	32	79.74
2.2.2 Internet shopping	16	71.18	4.2.4 Healthy life expectancy at birth	5	89.74
2.2.3 Professionals	28	47.55	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	5	87.12	4.3.1 Access to basic services	30	99.11
2.2.5 Extent of staff training	24	67.34	4.3.2 Pollution	24	93.33
2.2.6 R&D expenditure by businesses	13	36.08	4.3.3 Road safety	16	91.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	19	94.42
2.3.1 Government online services	4	97.70	4.3.5 Maths proficiency in schools	35	58.39
2.3.2 Publication and use of open data	3	85.13	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	29	62.55			
2.3.4 R&D expenditure by governments and higher education	15	66.46			

* Confidential data

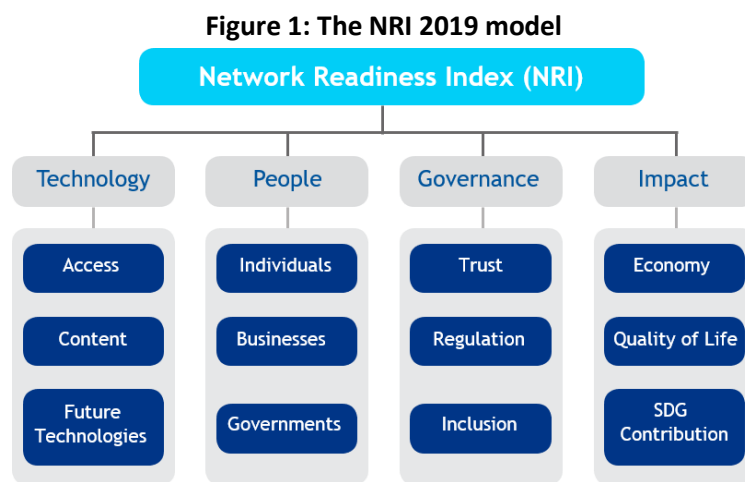
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Network Readiness Index 2019

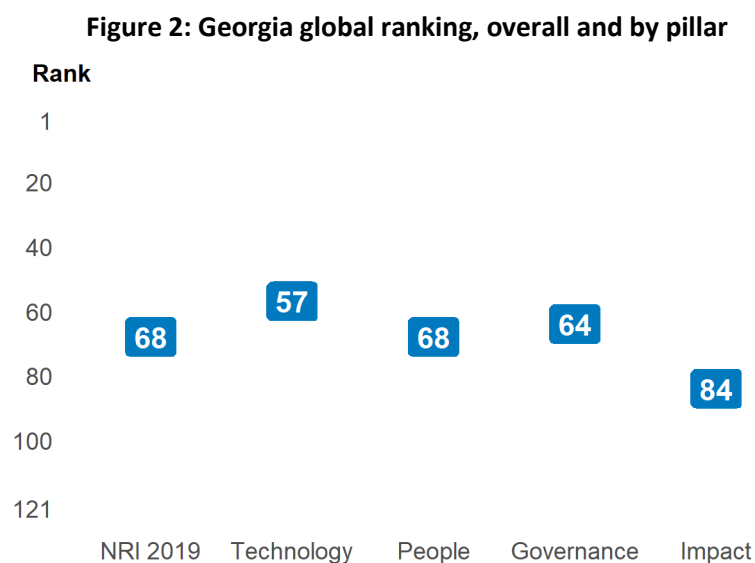
Georgia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Georgia

Georgia ranks 68th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

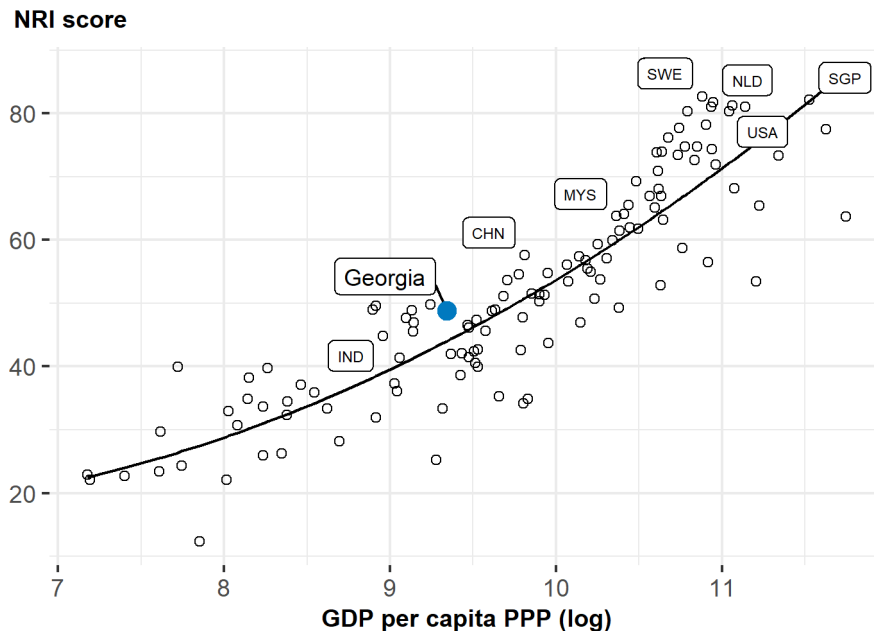
Table 1: Georgia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Access	44	Businesses	73
Regulation	46	Individuals	76
Trust	58	Inclusion	87
Content	62	Quality of Life	90
SDG Contribution	62	Future Technologies	94
Governments	64	Economy	99

NRI score and income

Figure 3 shows the position of Georgia 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, Georgia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Georgia belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Upper-middle-income countries

Georgia is ranked 18th 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 two of the four pillars: Score, Technology and Governance. At the sub-pillar level, it outperforms upper-middle-income countries in six of the twelve sub-pillars: Access, Content, Governments, Trust, Regulation and SDG Contribution.

Europe

Georgia is ranked 38th within Europe (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 Georgia against its income group and region, overall and by pillar

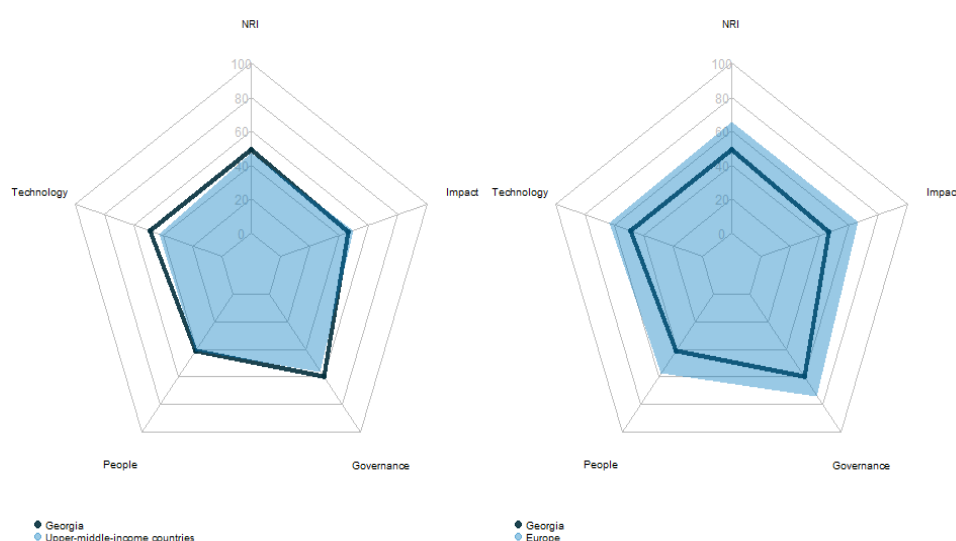


Table 2: Georgia scores vs. averages of its income group and region, overall and by pillar

Dimension	Georgia	Upper-middle-income countries	Europe
NRI	48.81	47.40	65.20
Technology	48.56	42.66	63.08
People	40.95	41.07	57.50
Governance	59.76	56.24	73.99
Impact	45.98	49.62	66.24

Strongest and weakest indicators

The indicators where Georgia performs particularly well include Internet access in schools, Ease of doing business, and Adult literacy rate (Table 3). By contrast, the economy's weakest indicators include Social safety net protection, Availability of latest technologies, and Extent of staff training.

Table 3: Top-ranked and bottom-ranked indicators of Georgia

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Internet shopping	89
Ease of doing business	7	Software piracy rate	89
Adult literacy rate	13	Company investment in emerging technology	91
4G mobile network coverage	15	Medium and high-tech industry	94
International Internet bandwidth	20	Active mobile-broadband subscriptions	99
Cybersecurity	20	Rural gap in use of digital payments	99
ICT regulatory environment	20	Happiness	101
Reading proficiency in schools	24	Extent of staff training	102
Regulatory quality	28	Availability of latest technologies	103
Use of virtual social networks	29	Social safety net protection	110

NRI 2019 At-A-Glance: Georgia

Network Readiness Index

Rank: 68 (out of 121)

Score: 48.81

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	57	48.56	C. Governance pillar	64	59.76
1st sub-pillar: Access	44	76.07	1st sub-pillar: Trust	58	57.27
2nd sub-pillar: Content	62	47.13	2nd sub-pillar: Regulation	46	68.60
3rd sub-pillar: Future Technologies	94	22.47	3rd sub-pillar: Inclusion	87	53.41
B. People pillar	68	40.95	D. Impact pillar	84	45.98
1st sub-pillar: Individuals	76	51.47	1st sub-pillar: Economy	99	8.85
2nd sub-pillar: Businesses	73	26.85	2nd sub-pillar: Quality of Life	90	53.78
3rd sub-pillar: Governments	64	44.55	3rd sub-pillar: SDG Contribution	62	75.31

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	34	74.78	3.1.1 Rule of law	46	60.81
1.1.2 Handset prices	81	38.69	3.1.2 Software piracy rate	89	10.81
1.1.3 Internet access	64	67.48	3.1.3 Secure Internet servers	50	65.58
1.1.4 4G mobile network coverage	15	99.72	3.1.4 Cybersecurity	20	91.89
1.1.5 Fixed-broadband subscriptions	49	77.49	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	20	74.33	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	28	76.14
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	7	94.64
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	39	53.59
1.2.2 Mobile apps development	59	63.32	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	87	0.04	3.2.5 Social safety net protection	110	17.82
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	20	94.41
1.3.1 Availability of latest technologies	103	32.35	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	91	23.97	3.3.1 E-Participation	83	57.32
1.3.3 Government procurement of advanced technology products	67	38.46	3.3.2 Socioeconomic gap in use of digital payments	82	54.31
1.3.4 ICT PCT patent applications	50	8.46	3.3.3 Availability of local online content	71	49.27
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	54	59.01
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	99	47.13
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	76	60.29	4.1.1 Medium and high-tech industry	94	14.46
2.1.2 Active mobile-broadband subscriptions	99	16.09	4.1.2 High-tech exports	88	6.31
2.1.3 Use of virtual social networks	29	68.81	4.1.3 PCT patent applications	52	0.97
2.1.4 Tertiary enrolment	44	43.83	4.1.4 Labour productivity per employee	79	13.68
2.1.5 Adult literacy rate	13	99.05	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	51	20.72	4.2.1 Happiness	101	33.36
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	79	57.09
2.2.1 Firms with website	68	39.98	4.2.3 Income inequality	64	66.05
2.2.2 Internet shopping	89	5.54	4.2.4 Healthy life expectancy at birth	81	58.61
2.2.3 Professionals	54	30.88	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	68	31.93	4.3.1 Access to basic services	67	92.36
2.2.5 Extent of staff training	102	25.90	4.3.2 Pollution	69	82.54
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	64	60.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	24	87.05
2.3.1 Government online services	69	66.15	4.3.5 Maths proficiency in schools	43	47.07
2.3.2 Publication and use of open data	40	37.44	4.3.6 Use of clean fuels and technology	80	82.22
2.3.3 ICT use and government efficiency	34	58.79			
2.3.4 R&D expenditure by governments and higher education	80	15.80			

* Confidential data

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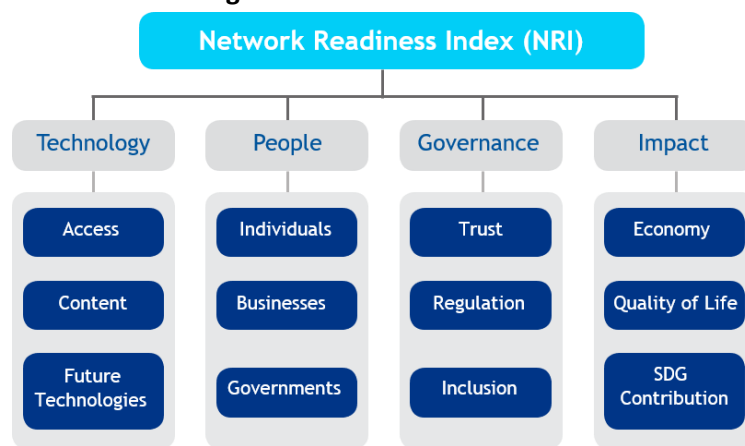
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Network Readiness Index 2019

Germany

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

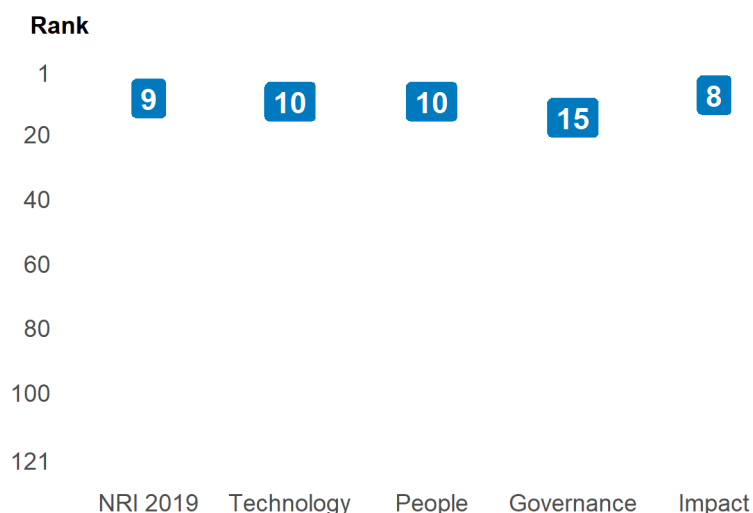
Figure 1: The NRI 2019 model



Global NRI position of Germany

Germany ranks 9th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Germany global ranking, overall and by pillar



Performance at sub-pillar level

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

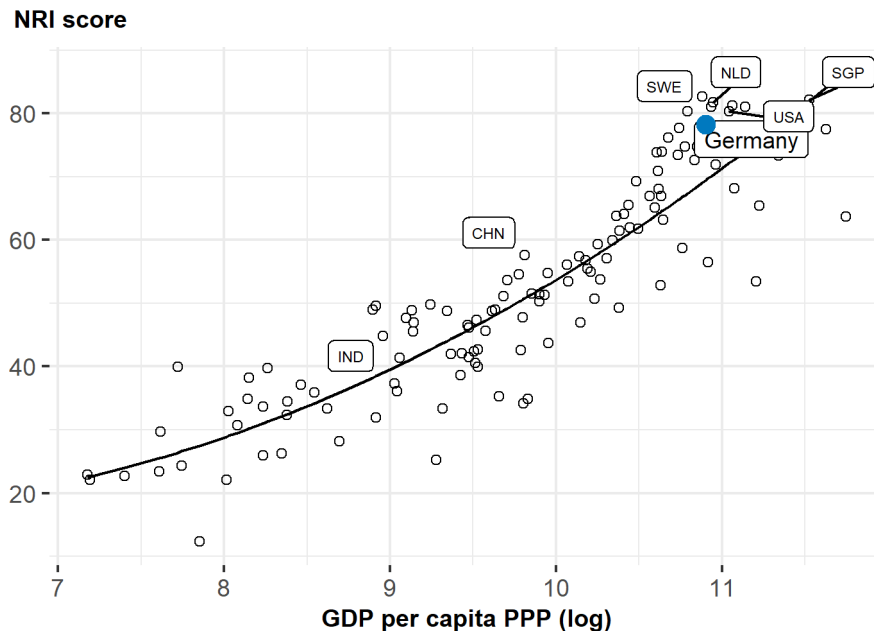
Table 1: Germany rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	2	Quality of Life	16
Businesses	6	Content	17
Governments	6	Inclusion	17
SDG Contribution	6	Trust	19
Economy	7	Access	27
Regulation	13	Individuals	41

NRI score and income

Figure 3 shows the position of Germany 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, Germany 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Germany belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Germany is ranked 9th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in ten of the twelve sub-pillars: Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Germany is ranked 7th 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 eleven of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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

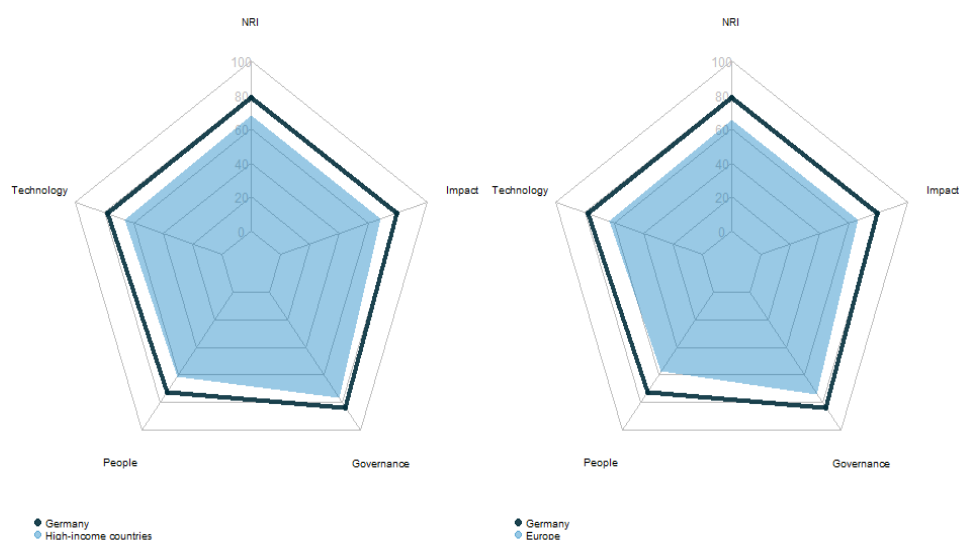


Table 2: Germany scores vs. averages of its income group and region, overall and by pillar

Dimension	Germany	High-income countries	Europe
NRI	78.23	68.12	65.20
Technology	77.51	66.07	63.08
People	72.60	61.07	57.50
Governance	83.94	77.07	73.99
Impact	78.87	68.29	66.24

Strongest and weakest indicators

The indicators where Germany performs particularly well include Robot density, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Use of virtual social networks, Online trust and safety, and Gender gap in internet use.

Table 3: Top-ranked and bottom-ranked indicators of Germany

Strongest indicators	Rank	Weakest indicators	Rank
Robot density	1	Rural gap in use of digital payments	31
E-commerce legislation	1	Fixed-broadband subscriptions	34
Use of clean fuels and technology	1	Freedom to make life choices	38
Technicians and associate professionals	2	Handset prices	41
Medium and high-tech industry	4	4G mobile network coverage	44
R&D expenditure by governments and higher education	5	Active mobile-broadband subscriptions	57
Government procurement of advanced technology products	6	International Internet bandwidth	63
ICT skills	6	Gender gap in internet use	64
Company investment in emerging technology	7	Online trust and safety	76
R&D expenditure by businesses	7	Use of virtual social networks	82

NRI 2019 At-A-Glance: Germany

Network Readiness Index

Rank: 9 (out of 121)

Score: 78.23

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	10	77.51	C. Governance pillar	15	83.94
1st sub-pillar: Access	27	81.89	1st sub-pillar: Trust	19	81.78
2nd sub-pillar: Content	17	71.43	2nd sub-pillar: Regulation	13	88.60
3rd sub-pillar: Future Technologies	2	79.21	3rd sub-pillar: Inclusion	17	81.43
B. People pillar	10	72.60	D. Impact pillar	8	78.87
1st sub-pillar: Individuals	41	61.08	1st sub-pillar: Economy	7	56.82
2nd sub-pillar: Businesses	6	75.46	2nd sub-pillar: Quality of Life	16	82.69
3rd sub-pillar: Governments	6	81.27	3rd sub-pillar: SDG Contribution	6	97.09

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	11	90.26	3.1.1 Rule of law	16	90.52
1.1.2 Handset prices	41	58.03	3.1.2 Software piracy rate	8	93.24
1.1.3 Internet access	18	89.22	3.1.3 Secure Internet servers	8	93.34
1.1.4 4G mobile network coverage	44	97.50	3.1.4 Cybersecurity	24	91.01
1.1.5 Fixed-broadband subscriptions	34	88.06	3.1.5 Online trust and safety	76	40.79
1.1.6 International Internet bandwidth	63	68.24	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	12	89.94
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	21	87.52
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	13	81.62
1.2.2 Mobile apps development	21	84.14	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	17	7.40	3.2.5 Social safety net protection	19	76.98
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	15	95.56
1.3.1 Availability of latest technologies	16	85.98	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	7	85.74	3.3.1 E-Participation	23	91.08
1.3.3 Government procurement of advanced technology products	6	84.20	3.3.2 Socioeconomic gap in use of digital payments	13	96.12
1.3.4 ICT PCT patent applications	13	64.79	3.3.3 Availability of local online content	9	89.25
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	64	55.49
1.3.6 Robot density	1	100.00	3.3.5 Rural gap in use of digital payments	31	75.20
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	16	88.97	4.1.1 Medium and high-tech industry	4	78.58
2.1.2 Active mobile-broadband subscriptions	57	30.97	4.1.2 High-tech exports	28	29.87
2.1.3 Use of virtual social networks	82	44.91	4.1.3 PCT patent applications	8	62.95
2.1.4 Tertiary enrolment	28	51.13	4.1.4 Labour productivity per employee	21	55.89
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	6	89.44	4.2.1 Happiness	15	84.59
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	38	80.65
2.2.1 Firms with website	8	89.30	4.2.3 Income inequality	23	82.37
2.2.2 Internet shopping	11	85.73	4.2.4 Healthy life expectancy at birth	26	83.15
2.2.3 Professionals	31	46.06	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	2	98.91	4.3.1 Access to basic services	21	99.49
2.2.5 Extent of staff training	10	79.37	4.3.2 Pollution	25	93.25
2.2.6 R&D expenditure by businesses	7	53.39	4.3.3 Road safety	8	95.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	17	92.31	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	16	69.52	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	14	78.12			
2.3.4 R&D expenditure by governments and higher education	5	85.11			

* Confidential data

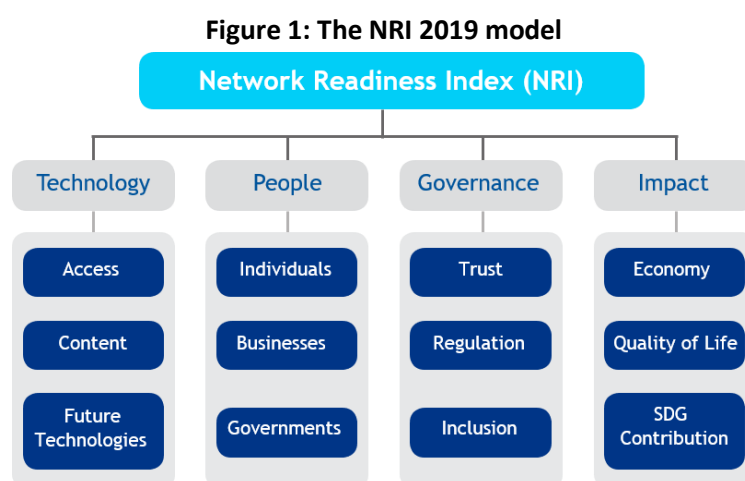
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Network Readiness Index 2019

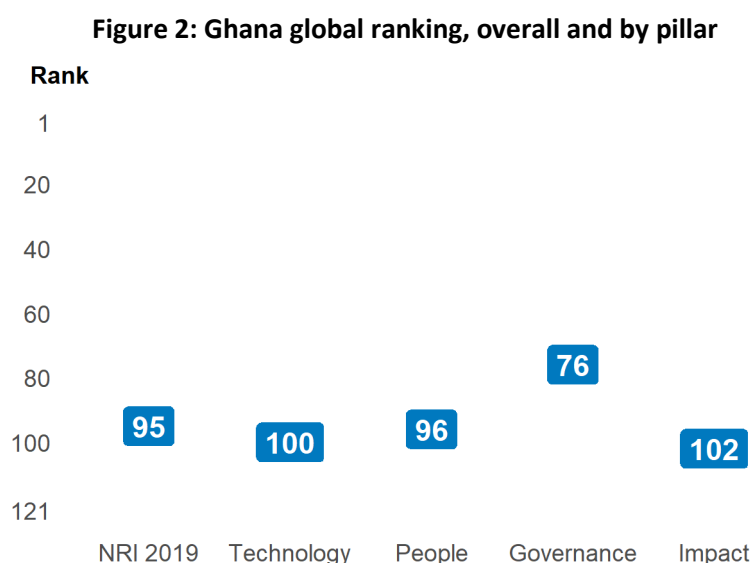
Ghana

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Ghana

Ghana ranks 95th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

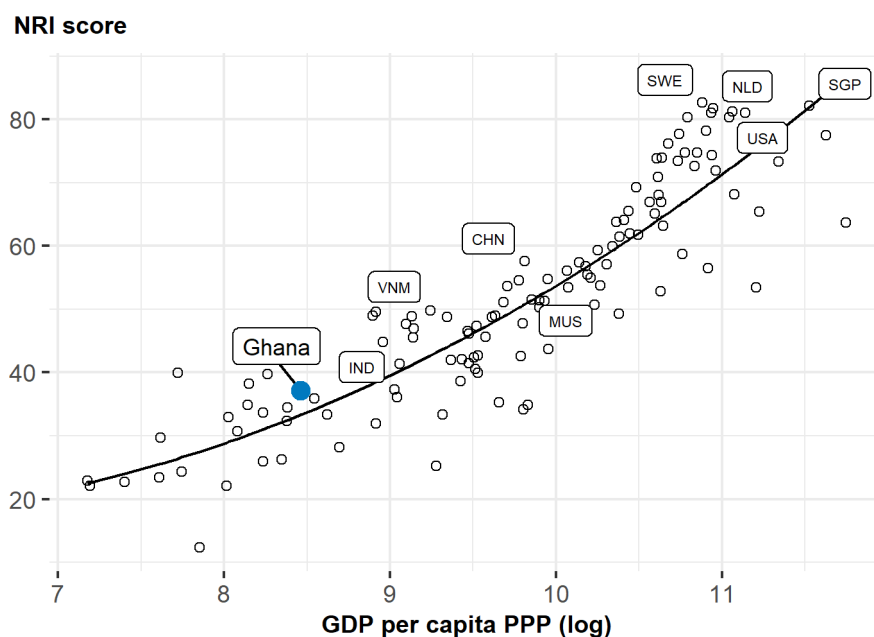
Table 1: Ghana rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	52	Quality of Life	100
Regulation	64	SDG Contribution	100
Governments	75	Content	102
Trust	77	Businesses	102
Inclusion	88	Access	104
Individuals	99	Economy	108

NRI score and income

Figure 3 shows the position of Ghana 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, Ghana 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Ghana belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries

Ghana is ranked 14th 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 two of the four pillars: People and Governance. At the sub-pillar level, it outperforms lower-middle-income countries in five of the twelve sub-pillars: Future Technology, Governments, Trust, Regulation and Inclusion.

Africa

Ghana is ranked 5th within Africa (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Africa in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

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

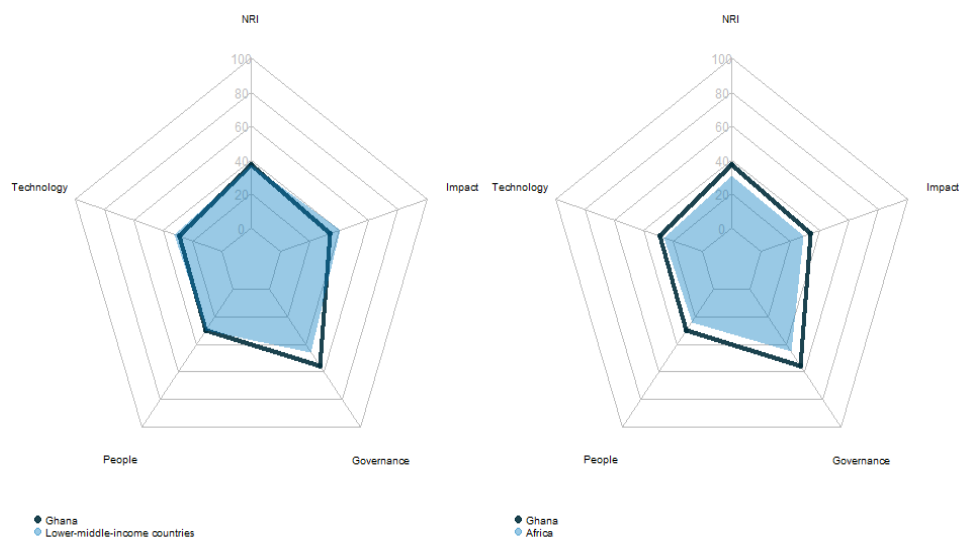


Table 2: Ghana scores vs. averages of its income group and region, overall and by pillar

Dimension	Ghana	Lower-middle-income countries	Africa
NRI	37.07	37.18	31.07
Technology	28.93	32.15	26.03
People	30.11	30.04	23.76
Governance	55.28	46.17	45.32
Impact	33.94	40.35	29.15

Strongest and weakest indicators

The indicators where Ghana performs particularly well include E-commerce legislation, Government procurement of advanced technology products, and Reading proficiency in schools (Table 3). By contrast, the economy's weakest indicators include Medium and high-tech industry, Fixed-broadband subscriptions, and Access to basic services.

Table 3: Top-ranked and bottom-ranked indicators of Ghana

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Use of virtual social networks	104
Government procurement of advanced technology products	31	Technicians and associate professionals	104
Reading proficiency in schools	35	Use of clean fuels and technology	104
Online trust and safety	36	4G mobile network coverage	108
Maths proficiency in schools	38	Healthy life expectancy at birth	108
Active mobile-broadband subscriptions	39	Mobile apps development	109
ICT regulatory environment	40	Secure Internet servers	111
Company investment in emerging technology	45	Fixed-broadband subscriptions	112
Legal framework's adaptability to digital business models	45	Access to basic services	112
Extent of staff training	48	Medium and high-tech industry	118

NRI 2019 At-A-Glance: Ghana

Network Readiness Index

Rank: 95 (out of 121)

Score: 37.07

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	100	28.93	C. Governance pillar	76	55.28
1st sub-pillar: Access	104	34.25	1st sub-pillar: Trust	77	49.42
2nd sub-pillar: Content	102	19.01	2nd sub-pillar: Regulation	64	63.71
3rd sub-pillar: Future Technologies	52	33.54	3rd sub-pillar: Inclusion	88	52.72
B. People pillar	96	30.11	D. Impact pillar	102	33.94
1st sub-pillar: Individuals	99	32.59	1st sub-pillar: Economy	108	7.54
2nd sub-pillar: Businesses	102	16.91	2nd sub-pillar: Quality of Life	100	47.05
3rd sub-pillar: Governments	75	40.83	3rd sub-pillar: SDG Contribution	100	47.23

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	60	65.34	3.1.1 Rule of law	56	54.97
1.1.2 Handset prices	79	39.03	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	87	31.23	3.1.3 Secure Internet servers	111	26.11
1.1.4 4G mobile network coverage	108	34.86	3.1.4 Cybersecurity	86	45.83
1.1.5 Fixed-broadband subscriptions	112	0.06	3.1.5 Online trust and safety	36	70.78
1.1.6 International Internet bandwidth	99	61.20	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	61	8.03	3.2.1 Regulatory quality	77	49.65
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	97	52.58
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	45	47.57
1.2.2 Mobile apps development	109	28.45	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	62	43.23
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	40	89.19
1.3.1 Availability of latest technologies	95	36.44	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	45	45.11	3.3.1 E-Participation	81	57.96
1.3.3 Government procurement of advanced technology products	31	52.61	3.3.2 Socioeconomic gap in use of digital payments	58	70.42
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	100	28.35
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	85	54.14
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	97	32.50	4.1.1 Medium and high-tech industry	118	0.69
2.1.2 Active mobile-broadband subscriptions	39	35.14	4.1.2 High-tech exports	55	15.65
2.1.3 Use of virtual social networks	104	16.84	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	95	10.95	4.1.4 Labour productivity per employee	93	6.29
2.1.5 Adult literacy rate	77	67.54	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	69	50.49
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	78	58.92
2.2.1 Firms with website	95	18.95	4.2.3 Income inequality	86	51.32
2.2.2 Internet shopping	91	5.41	4.2.4 Healthy life expectancy at birth	108	27.47
2.2.3 Professionals	81	17.86	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	104	10.24	4.3.1 Access to basic services	112	34.00
2.2.5 Extent of staff training	48	49.01	4.3.2 Pollution	94	70.41
2.2.6 R&D expenditure by businesses	92	0.01	4.3.3 Road safety	102	30.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	35	70.98
2.3.1 Government online services	69	66.15	4.3.5 Maths proficiency in schools	38	55.17
2.3.2 Publication and use of open data	61	25.96	4.3.6 Use of clean fuels and technology	104	22.22
2.3.3 ICT use and government efficiency	77	39.02			
2.3.4 R&D expenditure by governments and higher education	52	32.20			

* Confidential data

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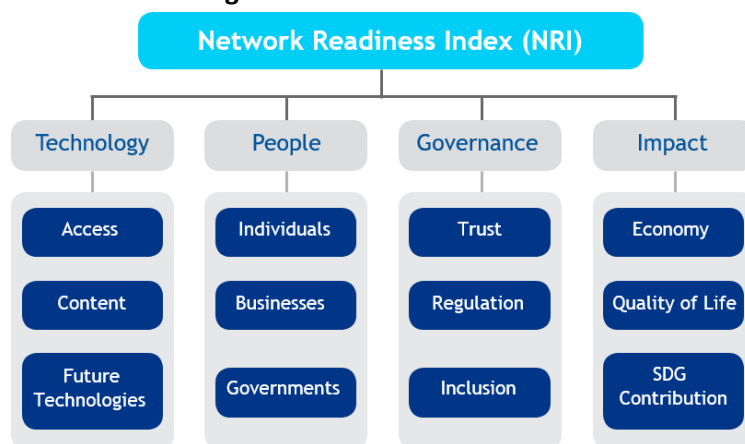
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Network Readiness Index 2019

Greece

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

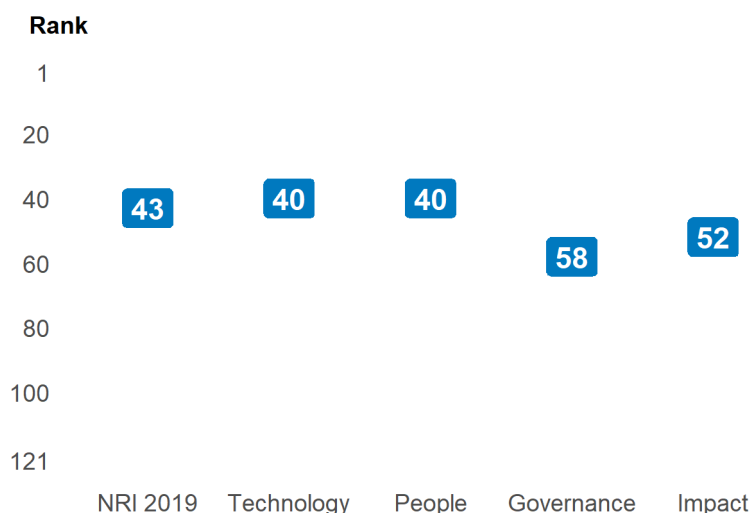
Figure 1: The NRI 2019 model



Global NRI position of Greece

Greece ranks 43rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology and People. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Greece global ranking, overall and by pillar



Performance at sub-pillar level

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

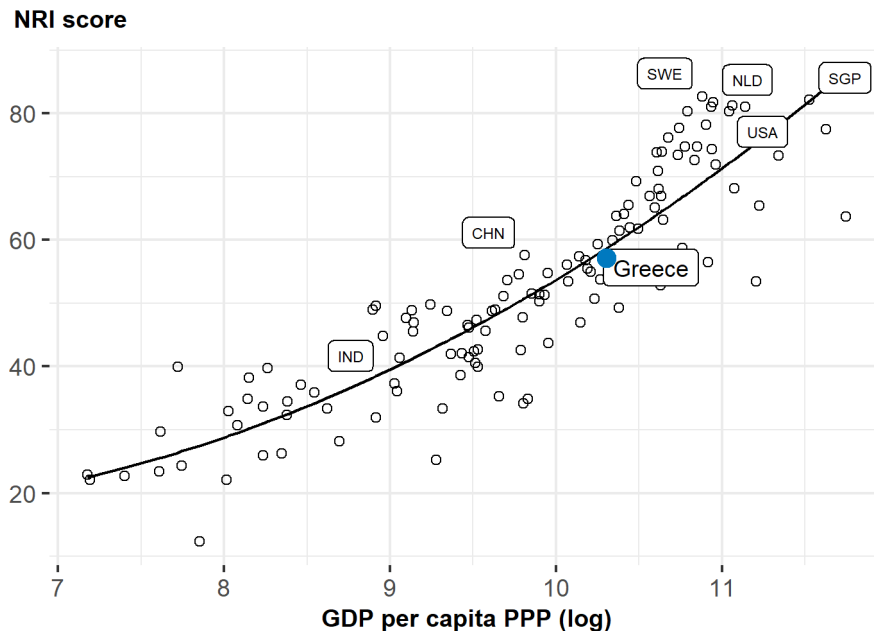
Table 1: Greece rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	24	Inclusion	50
SDG Contribution	28	Economy	52
Content	34	Trust	62
Governments	35	Future Technologies	71
Access	37	Regulation	74
Businesses	47	Quality of Life	91

NRI score and income

Figure 3 shows the position of Greece 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, Greece 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Greece belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Greece is ranked 41st 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 outperforms high-income countries in two of the twelve sub-pillars: Individuals and SDG Contribution.

Europe

Greece is ranked 29th 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: Individuals and SDG Contribution.

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



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

Dimension	Greece	High-income countries	Europe
NRI	57.07	68.12	65.20
Technology	57.02	66.07	63.08
People	53.25	61.07	57.50
Governance	61.62	77.07	73.99
Impact	56.39	68.29	66.24

Strongest and weakest indicators

The indicators where Greece performs particularly well include Tertiary enrolment, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Government procurement of advanced technology products, and Legal framework's adaptability to digital business models.

Table 3: Top-ranked and bottom-ranked indicators of Greece

Strongest indicators	Rank	Weakest indicators	Rank
Tertiary enrolment	1	Ease of doing business	72
E-commerce legislation	1	Happiness	73
Use of clean fuels and technology	1	Medium and high-tech industry	75
Computer software spending	8	Cybersecurity	77
Fixed-broadband subscriptions	17	Extent of staff training	90
Healthy life expectancy at birth	21	Social safety net protection	98
Professionals	24	Company investment in emerging technology	103
Access to basic services	24	Legal framework's adaptability to digital business models	108
Handset prices	26	Government procurement of advanced technology products	114
ICT regulatory environment	27	Freedom to make life choices	118

NRI 2019 At-A-Glance: Greece

Network Readiness Index

Rank: 43 (out of 121)

Score: 57.07

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	40	57.02	C. Governance pillar	58	61.62
1st sub-pillar: Access	37	78.60	1st sub-pillar: Trust	62	56.28
2nd sub-pillar: Content	34	63.84	2nd sub-pillar: Regulation	74	60.96
3rd sub-pillar: Future Technologies	71	28.62	3rd sub-pillar: Inclusion	50	67.63
B. People pillar	40	53.25	D. Impact pillar	52	56.39
1st sub-pillar: Individuals	24	66.60	1st sub-pillar: Economy	52	23.98
2nd sub-pillar: Businesses	47	36.10	2nd sub-pillar: Quality of Life	91	53.24
3rd sub-pillar: Governments	35	57.04	3rd sub-pillar: SDG Contribution	28	91.94

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	48	69.95	3.1.1 Rule of law	53	56.82
1.1.2 Handset prices	26	65.09	3.1.2 Software piracy rate	58	37.84
1.1.3 Internet access	62	69.02	3.1.3 Secure Internet servers	46	72.73
1.1.4 4G mobile network coverage	34	98.80	3.1.4 Cybersecurity	77	55.70
1.1.5 Fixed-broadband subscriptions	17	95.64	3.1.5 Online trust and safety	55	58.30
1.1.6 International Internet bandwidth	30	73.08	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	55	57.91
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	72	67.55
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	108	21.30
1.2.2 Mobile apps development	36	75.63	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	53	0.67	3.2.5 Social safety net protection	98	25.97
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	27	93.05
1.3.1 Availability of latest technologies	60	54.91	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	103	17.06	3.3.1 E-Participation	34	85.99
1.3.3 Government procurement of advanced technology products	114	18.55	3.3.2 Socioeconomic gap in use of digital payments	45	78.80
1.3.4 ICT PCT patent applications	34	19.90	3.3.3 Availability of local online content	65	51.74
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	60	57.88
1.3.6 Robot density	37	6.74	3.3.5 Rural gap in use of digital payments	70	63.76
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	57	70.28	4.1.1 Medium and high-tech industry	75	26.53
2.1.2 Active mobile-broadband subscriptions	56	31.14	4.1.2 High-tech exports	36	24.27
2.1.3 Use of virtual social networks	61	53.22	4.1.3 PCT patent applications	40	3.02
2.1.4 Tertiary enrolment	1	100.00	4.1.4 Labour productivity per employee	39	42.12
2.1.5 Adult literacy rate	34	95.96	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	39	48.98	4.2.1 Happiness	73	48.99
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	118	8.30
2.2.1 Firms with website	48	59.98	4.2.3 Income inequality	55	71.05
2.2.2 Internet shopping	47	28.40	4.2.4 Healthy life expectancy at birth	21	84.62
2.2.3 Professionals	24	49.72	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	60	34.12	4.3.1 Access to basic services	24	99.33
2.2.5 Extent of staff training	90	30.27	4.3.2 Pollution	44	88.76
2.2.6 R&D expenditure by businesses	36	14.15	4.3.3 Road safety	38	79.69
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	41	80.00	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	36	38.94	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	28	52.20			

* Confidential data

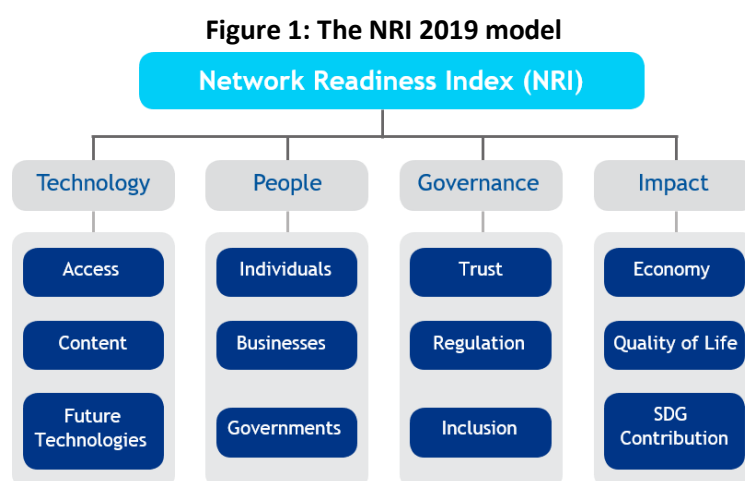
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Network Readiness Index 2019

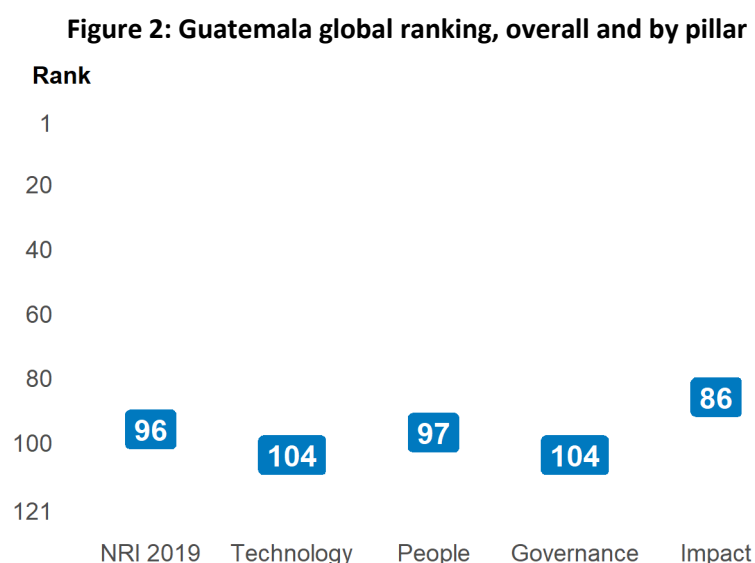
Guatemala

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Guatemala

Guatemala ranks 96th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology and Governance.



Performance at sub-pillar level

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

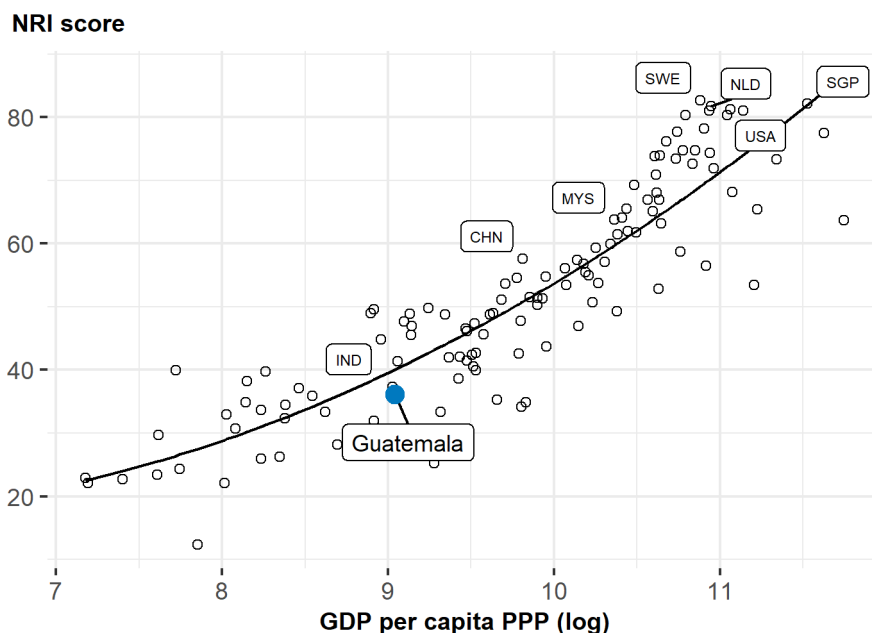
Table 1: Guatemala rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	55	Individuals	92
Economy	84	SDG Contribution	92
Inclusion	89	Governments	100
Content	90	Access	105
Businesses	90	Regulation	110
Future Technologies	91	Trust	112

NRI score and income

Figure 3 shows the position of Guatemala 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, Guatemala 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Guatemala belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Guatemala is ranked 33rd in the group of upper-middle-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 outperforms upper-middle-income countries in one of the twelve sub-pillars: Quality of Life.

The Americas

Guatemala is ranked 18th 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 one of the twelve sub-pillars: Quality of Life.

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



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

Dimension	Guatemala	Upper-middle-income countries	The Americas
NRI	36.07	47.40	49.08
Technology	28.04	42.66	43.12
People	30.01	41.07	43.32
Governance	41.48	56.24	57.13
Impact	44.75	49.62	52.73

Strongest and weakest indicators

The indicators where Guatemala performs particularly well include Freedom to make life choices, Happiness, and Extent of staff training (Table 3). By contrast, the economy's weakest indicators include Active mobile-broadband subscriptions, Rule of law, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of Guatemala

Strongest indicators	Rank	Weakest indicators	Rank
Freedom to make life choices	22	4G mobile network coverage	104
Happiness	24	R&D expenditure by governments and higher education	104
Extent of staff training	45	International Internet bandwidth	105
Maths proficiency in schools	49	Cybersecurity	105
Availability of latest technologies	50	E-commerce legislation	110
Reading proficiency in schools	55	Mobile tariffs	111
Firms with website	59	Government procurement of advanced technology products	111
Internet access in schools	60	ICT regulatory environment	113
Publication and use of open data	62	Rule of law	115
Handset prices	64	Active mobile-broadband subscriptions	116

NRI 2019 At-A-Glance: Guatemala

Network Readiness Index

Rank: 96 (out of 121)

Score: 36.07

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	104	28.04	C. Governance pillar	104	41.48
1st sub-pillar: Access	105	33.61	1st sub-pillar: Trust	112	30.99
2nd sub-pillar: Content	90	27.82	2nd sub-pillar: Regulation	110	40.99
3rd sub-pillar: Future Technologies	91	22.67	3rd sub-pillar: Inclusion	89	52.46
B. People pillar	97	30.01	D. Impact pillar	86	44.75
1st sub-pillar: Individuals	92	39.21	1st sub-pillar: Economy	84	12.43
2nd sub-pillar: Businesses	90	21.87	2nd sub-pillar: Quality of Life	55	64.32
3rd sub-pillar: Governments	100	28.96	3rd sub-pillar: SDG Contribution	92	57.50

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	111	29.41	3.1.1 Rule of law	115	29.37
1.1.2 Handset prices	64	46.42	3.1.2 Software piracy rate	82	14.86
1.1.3 Internet access	102	18.49	3.1.3 Secure Internet servers	102	36.73
1.1.4 4G mobile network coverage	104	40.35	3.1.4 Cybersecurity	105	25.44
1.1.5 Fixed-broadband subscriptions	NA	NA	3.1.5 Online trust and safety	67	48.55
1.1.6 International Internet bandwidth	105	58.23	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	60	8.74	3.2.1 Regulatory quality	83	47.11
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	86	57.24
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	74	38.59
1.2.2 Mobile apps development	94	43.74	3.2.4 E-commerce legislation	110	25.00
1.2.3 Intellectual property receipts	89	0.03	3.2.5 Social safety net protection	93	29.15
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	113	48.85
1.3.1 Availability of latest technologies	50	59.60	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	71	32.25	3.3.1 E-Participation	86	56.69
1.3.3 Government procurement of advanced technology products	111	21.52	3.3.2 Socioeconomic gap in use of digital payments	83	53.69
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	89	35.61
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	69	63.86
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	70	61.43	4.1.1 Medium and high-tech industry	66	28.43
2.1.2 Active mobile-broadband subscriptions	116	4.29	4.1.2 High-tech exports	72	10.11
2.1.3 Use of virtual social networks	83	43.87	4.1.3 PCT patent applications	78	0.07
2.1.4 Tertiary enrolment	90	15.44	4.1.4 Labour productivity per employee	85	11.10
2.1.5 Adult literacy rate	75	71.03	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	24	74.35
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	22	88.21
2.2.1 Firms with website	59	51.15	4.2.3 Income inequality	94	38.68
2.2.2 Internet shopping	85	6.47	4.2.4 Healthy life expectancy at birth	83	56.04
2.2.3 Professionals	94	12.87	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	102	10.67	4.3.1 Access to basic services	96	73.13
2.2.5 Extent of staff training	45	50.05	4.3.2 Pollution	77	79.85
2.2.6 R&D expenditure by businesses	94	0.00	4.3.3 Road safety	71	56.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	55	53.87
2.3.1 Government online services	81	60.77	4.3.5 Maths proficiency in schools	49	39.36
2.3.2 Publication and use of open data	62	23.72	4.3.6 Use of clean fuels and technology	98	42.22
2.3.3 ICT use and government efficiency	93	30.64			
2.3.4 R&D expenditure by governments and higher education	104	0.70			

* Confidential data

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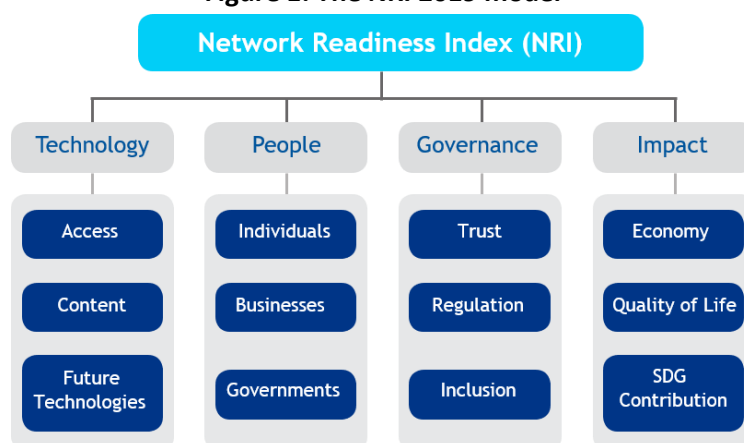
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Network Readiness Index 2019

Honduras

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

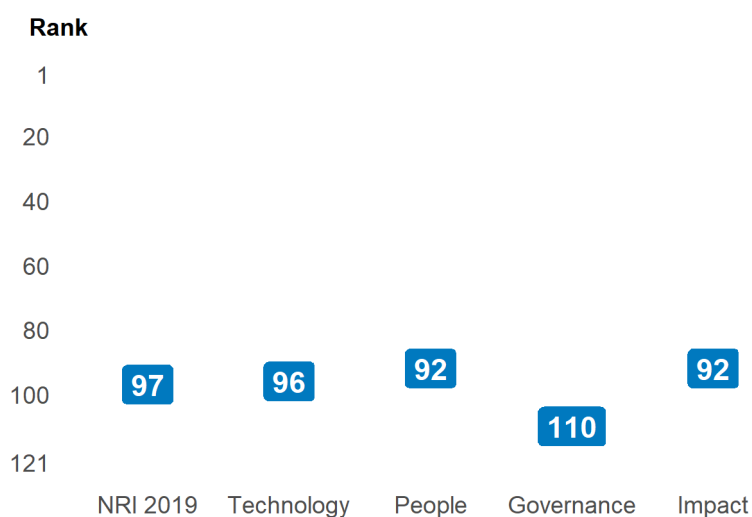
Figure 1: The NRI 2019 model



Global NRI position of Honduras

Honduras ranks 97th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People and Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Honduras global ranking, overall and by pillar



Performance at sub-pillar level

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

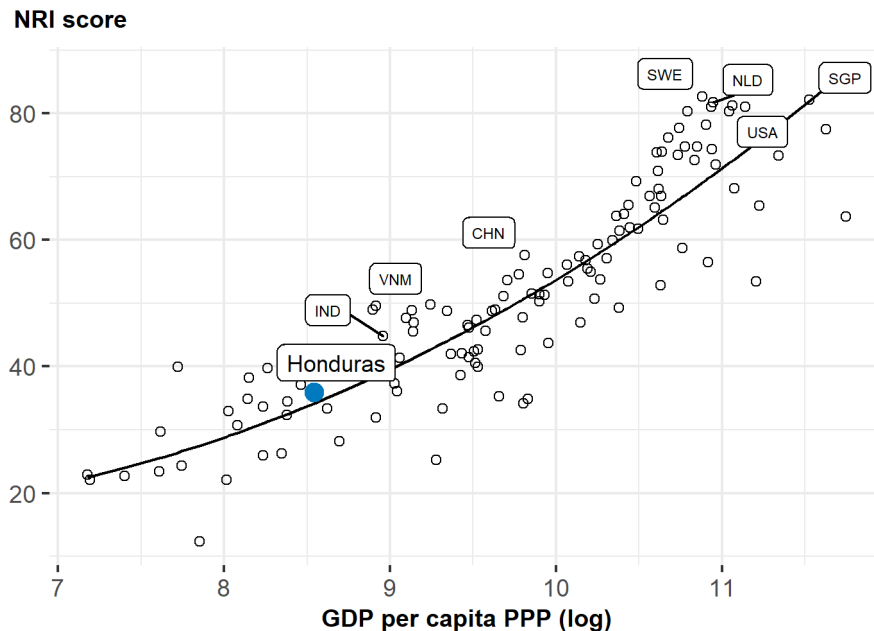
Table 1: Honduras rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	59	Individuals	97
Quality of Life	71	Regulation	100
Governments	81	Inclusion	104
Businesses	84	Access	108
SDG Contribution	85	Economy	109
Content	94	Trust	118

NRI score and income

Figure 3 shows the position of Honduras 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, Honduras 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Honduras belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Lower-middle-income countries

Honduras is ranked 15th 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 two of the four pillars: People and Impact. At the sub-pillar level, it outperforms lower-middle-income countries in six of the twelve sub-pillars: Content, Future Technology, Businesses, Governments, Quality of Life and SDG Contribution.

The Americas

Honduras is ranked 19th 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 one of the twelve sub-pillars: Future Technology.

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



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

Dimension	Honduras	Lower-middle-income countries	The Americas
NRI	35.88	37.18	49.08
Technology	30.29	32.15	43.12
People	32.34	30.04	43.32
Governance	37.69	46.17	57.13
Impact	43.19	40.35	52.73

Strongest and weakest indicators

The indicators where Honduras performs particularly well include Computer software spending, Freedom to make life choices, and Maths proficiency in schools (Table 3). By contrast, the economy's weakest indicators include Cybersecurity, Mobile tariffs, and Rule of law.

Table 3: Top-ranked and bottom-ranked indicators of Honduras

Strongest indicators	Rank	Weakest indicators	Rank
Computer software spending	30	Secure Internet servers	101
Freedom to make life choices	41	Professionals	102
Maths proficiency in schools	45	Internet users	103
Extent of staff training	53	Medium and high-tech industry	104
Healthy life expectancy at birth	53	Rural gap in use of digital payments	105
Happiness	54	Ease of doing business	106
Reading proficiency in schools	54	Active mobile-broadband subscriptions	108
Internet access in schools	55	Rule of law	113
Pollution	66	Mobile tariffs	116
Adult literacy rate	68	Cybersecurity	119

NRI 2019 At-A-Glance: Honduras

Network Readiness Index

Rank: 97 (out of 121)

Score: 35.88

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	96	30.29	C. Governance pillar	110	37.69
1st sub-pillar: Access	108	32.34	1st sub-pillar: Trust	118	22.11
2nd sub-pillar: Content	94	26.44	2nd sub-pillar: Regulation	100	47.87
3rd sub-pillar: Future Technologies	59	32.08	3rd sub-pillar: Inclusion	104	43.08
B. People pillar	92	32.34	D. Impact pillar	92	43.19
1st sub-pillar: Individuals	97	34.52	1st sub-pillar: Economy	109	7.39
2nd sub-pillar: Businesses	84	23.44	2nd sub-pillar: Quality of Life	71	59.35
3rd sub-pillar: Governments	81	39.06	3rd sub-pillar: SDG Contribution	85	62.84

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	116	19.07	3.1.1 Rule of law	113	30.00
1.1.2 Handset prices	96	31.21	3.1.2 Software piracy rate	79	18.92
1.1.3 Internet access	95	21.56	3.1.3 Secure Internet servers	101	36.76
1.1.4 4G mobile network coverage	91	67.46	3.1.4 Cybersecurity	119	2.74
1.1.5 Fixed-broadband subscriptions	101	3.60	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	71	67.64	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	55	15.80	3.2.1 Regulatory quality	97	41.09
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	106	46.05
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	79	37.49
1.2.2 Mobile apps development	96	40.58	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	89	30.36
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	70	82.24
1.3.1 Availability of latest technologies	79	43.24	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	76	30.48	3.3.1 E-Participation	94	48.40
1.3.3 Government procurement of advanced technology products	98	27.33	3.3.2 Socioeconomic gap in use of digital payments	91	47.39
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	85	37.49
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	105	39.05
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	103	24.37	4.1.1 Medium and high-tech industry	104	8.86
2.1.2 Active mobile-broadband subscriptions	108	10.71	4.1.2 High-tech exports	89	5.92
2.1.3 Use of virtual social networks	87	38.67	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	86	18.66	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	68	80.20	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	54	59.39
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	41	79.56
2.2.1 Firms with website	77	32.32	4.2.3 Income inequality	100	32.89
2.2.2 Internet shopping	96	4.53	4.2.4 Healthy life expectancy at birth	53	65.57
2.2.3 Professionals	102	9.15	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	81	24.88	4.3.1 Access to basic services	88	84.22
2.2.5 Extent of staff training	53	46.34	4.3.2 Pollution	66	83.76
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	73	56.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	54	54.28
2.3.1 Government online services	99	46.16	4.3.5 Maths proficiency in schools	45	44.07
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	92	54.44
2.3.3 ICT use and government efficiency	92	31.97			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

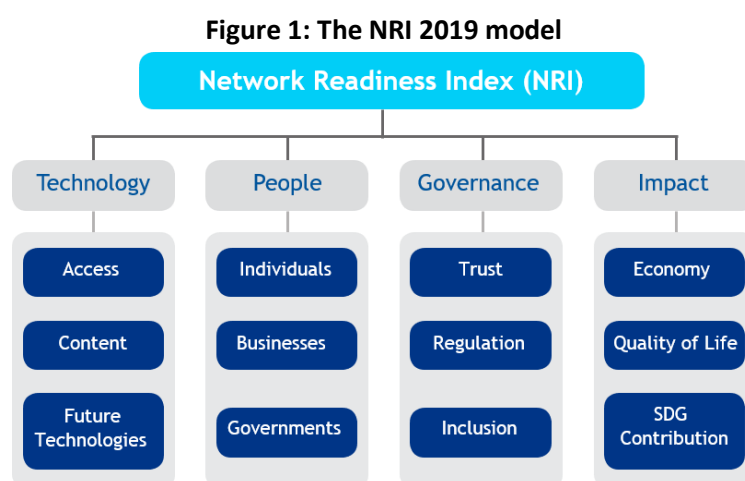
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Network Readiness Index 2019

Hong Kong (China)

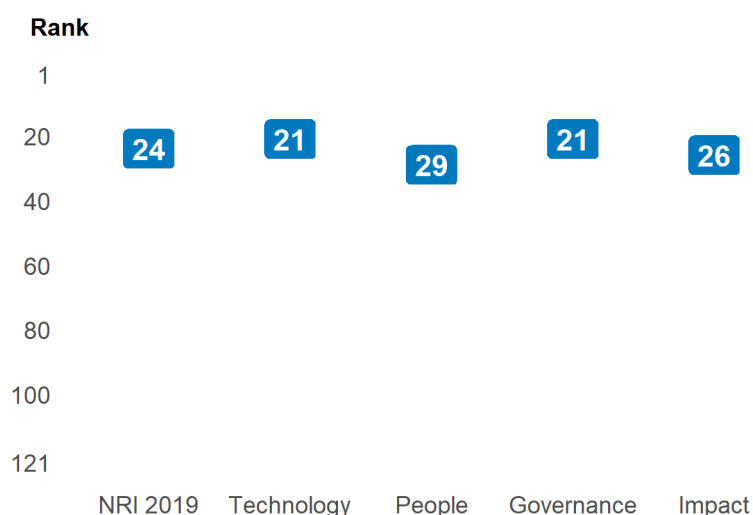
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Hong Kong (China)

Hong Kong (China) ranks 24th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology and Governance. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Hong Kong (China) global ranking, overall and by pillar



Performance at sub-pillar level

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

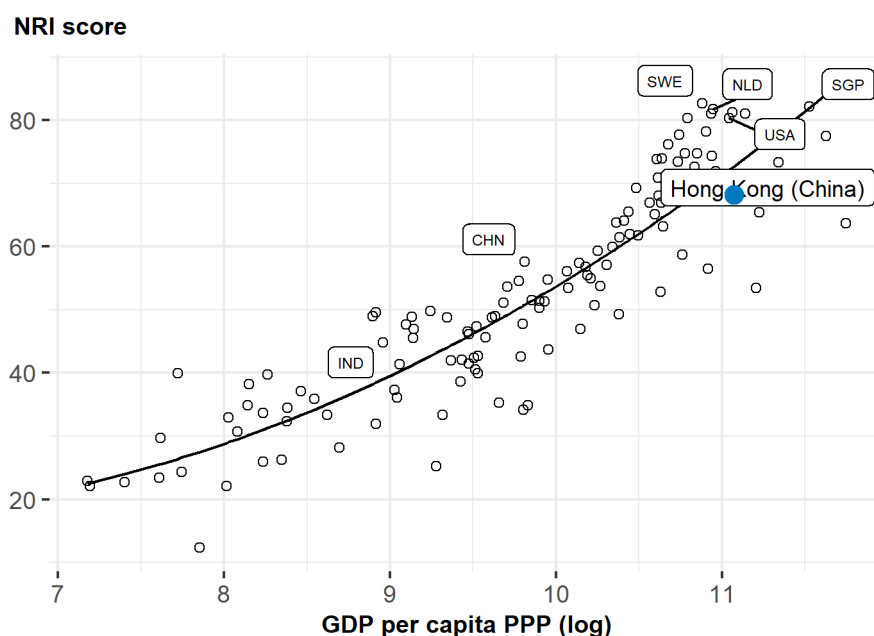
Table 1: Hong Kong (China) rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	1	Economy	22
Access	9	Businesses	30
Future Technologies	14	Inclusion	35
Individuals	15	Content	40
Trust	17	Governments	43
Regulation	21	Quality of Life	74

NRI score and income

Figure 3 shows the position of Hong Kong (China) 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, Hong Kong (China) 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Hong Kong (China) belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

High-income countries

Hong Kong (China) is ranked 24th 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 two of the four pillars: Score, Technology and Governance. At the sub-pillar level, it outperforms high-income countries in seven of the twelve sub-pillars: Access, Future Technology, Individuals, Trust, Regulation, Economy and SDG Contribution.

Asia & Pacific

Hong Kong (China) is ranked 6th within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Asia & Pacific in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

Figure 4: Performance of Hong Kong (China) against its income group and region, overall and by pillar

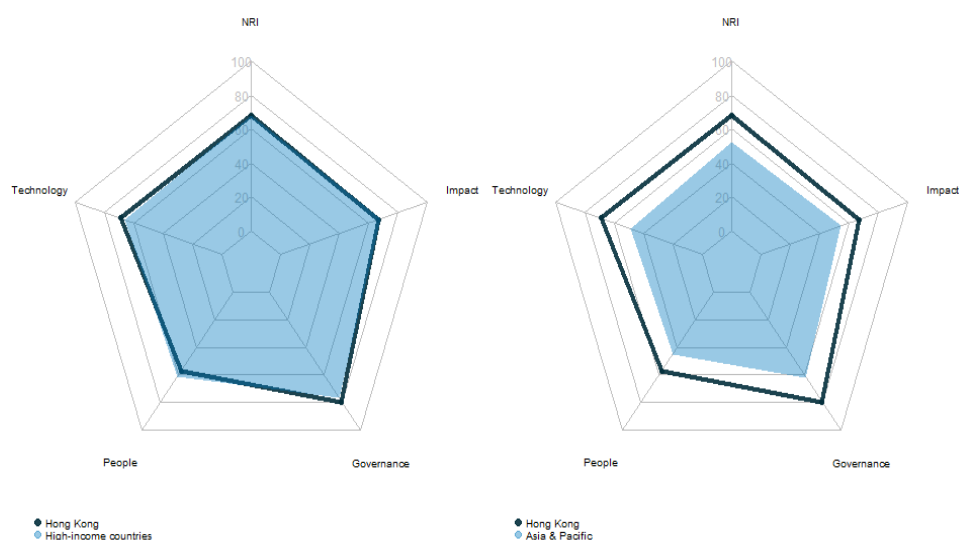


Table 2: Hong Kong (China) scores vs. averages of its income group and region, overall and by pillar

Dimension	Hong Kong (China)	High-income countries	Asia & Pacific
NRI	68.14	68.12	52.44
Technology	69.12	66.07	48.56
People	57.06	61.07	44.85
Governance	79.64	77.07	61.84
Impact	66.74	68.29	54.50

Strongest and weakest indicators

The indicators where Hong Kong (China) performs particularly well include Regulatory quality, Maths proficiency in schools, and International Internet bandwidth (Table 3). By contrast, the economy's weakest indicators include Professionals, Happiness, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of Hong Kong (China)

Strongest indicators	Rank	Weakest indicators	Rank
Regulatory quality	1	Socioeconomic gap in use of digital payments	44
Maths proficiency in schools	1	Gender gap in internet use	44
International Internet bandwidth	2	Internet access	46
Mobile apps development	3	Rural gap in use of digital payments	51
Ease of doing business	3	Intellectual property receipts	56
Reading proficiency in schools	4	Digital participation and content creation	59
Robot density	6	Freedom to make life choices	59
Technicians and associate professionals	6	ICT regulatory environment	64
Active mobile-broadband subscriptions	8	Happiness	74
Mobile tariffs	9	Professionals	79

NRI 2019 At-A-Glance: Hong Kong (China)

Network Readiness Index

Rank: 24 (out of 121)

Score: 68.14

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	21	69.12	C. Governance pillar	21	79.64
1st sub-pillar: Access	9	88.37	1st sub-pillar: Trust	17	82.30
2nd sub-pillar: Content	40	54.90	2nd sub-pillar: Regulation	21	82.68
3rd sub-pillar: Future Technologies	14	64.11	3rd sub-pillar: Inclusion	35	73.93
B. People pillar	29	57.06	D. Impact pillar	26	66.74
1st sub-pillar: Individuals	15	69.16	1st sub-pillar: Economy	22	42.23
2nd sub-pillar: Businesses	30	48.99	2nd sub-pillar: Quality of Life	74	58.98
3rd sub-pillar: Governments	43	53.02	3rd sub-pillar: SDG Contribution	1	99.01

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	9	91.69	3.1.1 Rule of law	11	93.73
1.1.2 Handset prices	23	66.04	3.1.2 Software piracy rate	27	68.92
1.1.3 Internet access	46	78.86	3.1.3 Secure Internet servers	21	84.24
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	NA	NA
1.1.5 Fixed-broadband subscriptions	43	83.86	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	2	99.90	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	25	99.21	3.2.1 Regulatory quality	1	100.00
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	3	97.44
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	19	71.08
1.2.2 Mobile apps development	3	96.00	3.2.4 E-commerce legislation	NA	NA
1.2.3 Intellectual property receipts	56	0.63	3.2.5 Social safety net protection	37	60.55
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	64	84.36
1.3.1 Availability of latest technologies	29	74.85	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	15	72.70	3.3.1 E-Participation	NA	NA
1.3.3 Government procurement of advanced technology products	15	65.26	3.3.2 Socioeconomic gap in use of digital payments	44	79.28
1.3.4 ICT PCT patent applications	14	62.94	3.3.3 Availability of local online content	17	85.22
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	44	60.97
1.3.6 Robot density	6	72.54	3.3.5 Rural gap in use of digital payments	51	70.25
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	18	88.61	4.1.1 Medium and high-tech industry	37	47.67
2.1.2 Active mobile-broadband subscriptions	8	53.82	4.1.2 High-tech exports	33	25.58
2.1.3 Use of virtual social networks	10	78.17	4.1.3 PCT patent applications	21	23.00
2.1.4 Tertiary enrolment	23	56.05	4.1.4 Labour productivity per employee	9	72.66
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	74	48.01
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	59	69.95
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	30	54.55	4.2.4 Healthy life expectancy at birth	NA	NA
2.2.3 Professionals	79	18.19	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	6	86.41	4.3.1 Access to basic services	42	97.65
2.2.5 Extent of staff training	12	76.81	4.3.2 Pollution	NA	NA
2.2.6 R&D expenditure by businesses	43	8.97	4.3.3 Road safety	NA	NA
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	4	99.39
2.3.1 Government online services	NA	NA	4.3.5 Maths proficiency in schools	1	100.00
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	NA	NA
2.3.3 ICT use and government efficiency	27	66.01			
2.3.4 R&D expenditure by governments and higher education	41	40.03			

* Confidential data

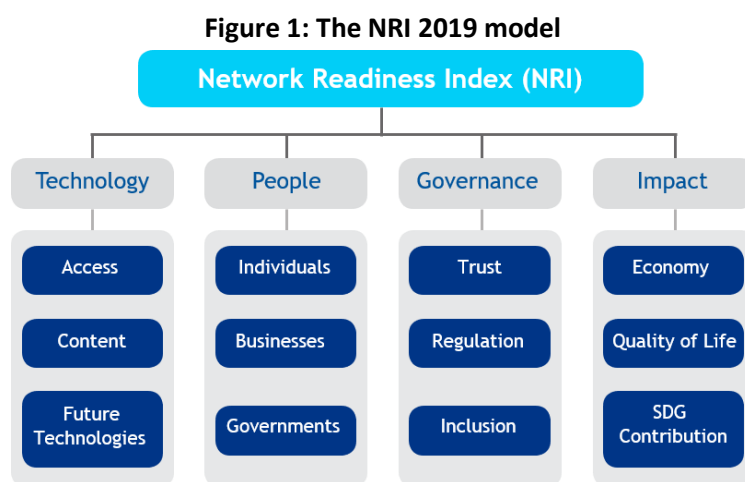
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Network Readiness Index 2019

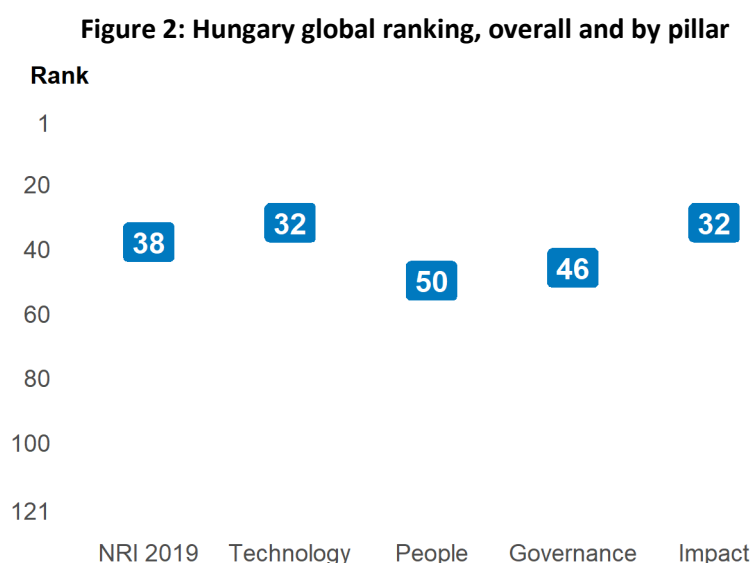
Hungary

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Hungary

Hungary ranks 38th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology and Impact. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

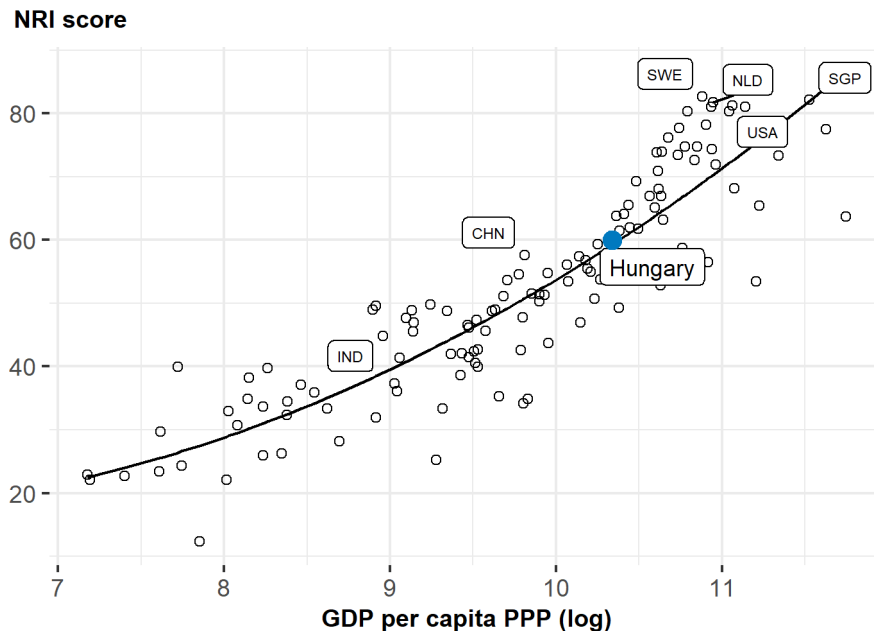
Table 1: Hungary rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Access	21	Individuals	48
SDG Contribution	22	Future Technologies	50
Economy	26	Regulation	56
Content	29	Inclusion	57
Businesses	39	Quality of Life	65
Trust	39	Governments	72

NRI score and income

Figure 3 shows the position of Hungary 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, Hungary 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Hungary belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Hungary is ranked 37th 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 outperforms high-income countries in two of the twelve sub-pillars: Access and SDG Contribution.

Europe

Hungary is ranked 27th 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 three of the twelve sub-pillars: Access, Economy and SDG Contribution.

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



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

Dimension	Hungary	High-income countries	Europe
NRI	59.95	68.12	65.20
Technology	61.42	66.07	63.08
People	47.39	61.07	57.50
Governance	66.67	77.07	73.99
Impact	64.32	68.29	66.24

Strongest and weakest indicators

The indicators where Hungary performs particularly well include Internet access in schools, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Social safety net protection, and Government procurement of advanced technology products.

Table 3: Top-ranked and bottom-ranked indicators of Hungary

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	ICT use and government efficiency	75
E-commerce legislation	1	Active mobile-broadband subscriptions	76
Use of clean fuels and technology	1	Online trust and safety	82
ICT regulatory environment	2	Rural gap in use of digital payments	82
Medium and high-tech industry	5	Legal framework's adaptability to digital business models	83
Intellectual property receipts	16	Extent of staff training	91
Adult literacy rate	17	Company investment in emerging technology	94
Income inequality	19	Government procurement of advanced technology products	95
Technicians and associate professionals	21	Social safety net protection	102
4G mobile network coverage	22	Freedom to make life choices	106

NRI 2019 At-A-Glance: Hungary

Network Readiness Index

Rank: 38 (out of 121)

Score: 59.95

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	32	61.42	C. Governance pillar	46	66.67
1st sub-pillar: Access	21	84.02	1st sub-pillar: Trust	39	69.06
2nd sub-pillar: Content	29	65.73	2nd sub-pillar: Regulation	56	66.40
3rd sub-pillar: Future Technologies	50	34.52	3rd sub-pillar: Inclusion	57	64.56
B. People pillar	50	47.39	D. Impact pillar	32	64.32
1st sub-pillar: Individuals	48	58.48	1st sub-pillar: Economy	26	38.90
2nd sub-pillar: Businesses	39	42.57	2nd sub-pillar: Quality of Life	65	61.18
3rd sub-pillar: Governments	72	41.11	3rd sub-pillar: SDG Contribution	22	92.90

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	23	81.93	3.1.1 Rule of law	39	66.00
1.1.2 Handset prices	35	62.46	3.1.2 Software piracy rate	26	71.62
1.1.3 Internet access	38	82.19	3.1.3 Secure Internet servers	22	84.17
1.1.4 4G mobile network coverage	22	99.20	3.1.4 Cybersecurity	33	86.95
1.1.5 Fixed-broadband subscriptions	24	93.29	3.1.5 Online trust and safety	82	36.53
1.1.6 International Internet bandwidth	58	69.04	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	41	64.68
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	50	76.39
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	83	35.09
1.2.2 Mobile apps development	38	74.00	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	16	8.35	3.2.5 Social safety net protection	102	22.61
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	2	99.62
1.3.1 Availability of latest technologies	42	64.54	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	94	22.27	3.3.1 E-Participation	66	66.88
1.3.3 Government procurement of advanced technology products	95	28.13	3.3.2 Socioeconomic gap in use of digital payments	41	79.36
1.3.4 ICT PCT patent applications	23	39.93	3.3.3 Availability of local online content	48	60.28
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	45	60.87
1.3.6 Robot density	23	24.95	3.3.5 Rural gap in use of digital payments	82	55.43
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	50	73.76	4.1.1 Medium and high-tech industry	5	76.36
2.1.2 Active mobile-broadband subscriptions	76	25.33	4.1.2 High-tech exports	26	32.02
2.1.3 Use of virtual social networks	45	61.54	4.1.3 PCT patent applications	29	7.81
2.1.4 Tertiary enrolment	61	35.11	4.1.4 Labour productivity per employee	42	39.43
2.1.5 Adult literacy rate	17	98.64	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	27	56.52	4.2.1 Happiness	48	62.65
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	106	30.69
2.2.1 Firms with website	47	61.16	4.2.3 Income inequality	19	85.79
2.2.2 Internet shopping	39	36.86	4.2.4 Healthy life expectancy at birth	53	65.57
2.2.3 Professionals	41	39.19	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	21	63.78	4.3.1 Access to basic services	36	98.67
2.2.5 Extent of staff training	91	29.28	4.3.2 Pollution	43	88.84
2.2.6 R&D expenditure by businesses	22	25.14	4.3.3 Road safety	31	84.06
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	57	70.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	63	23.30	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	75	39.24			
2.3.4 R&D expenditure by governments and higher education	53	31.14			

* Confidential data

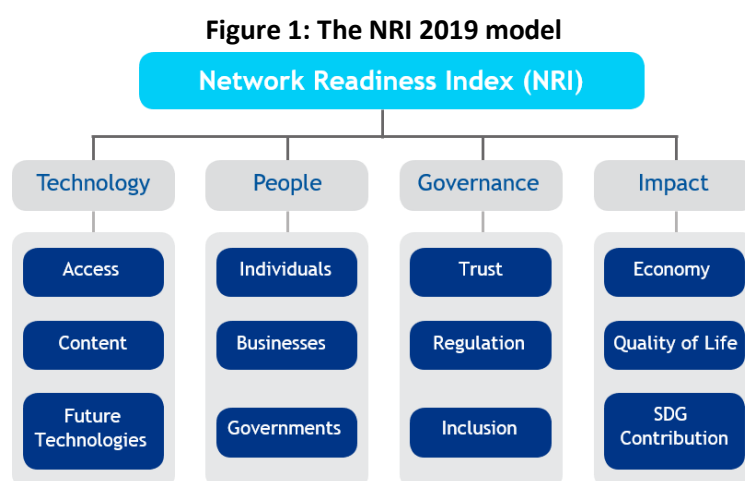
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Network Readiness Index 2019

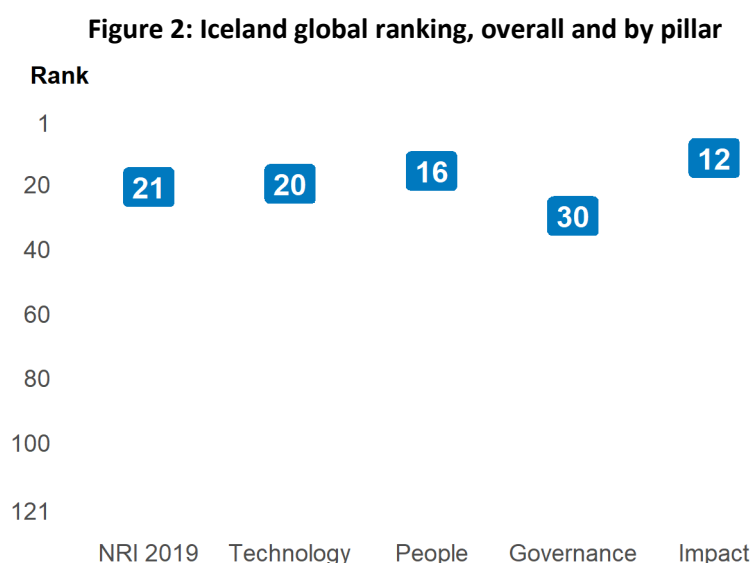
Iceland

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Iceland

Iceland ranks 21st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

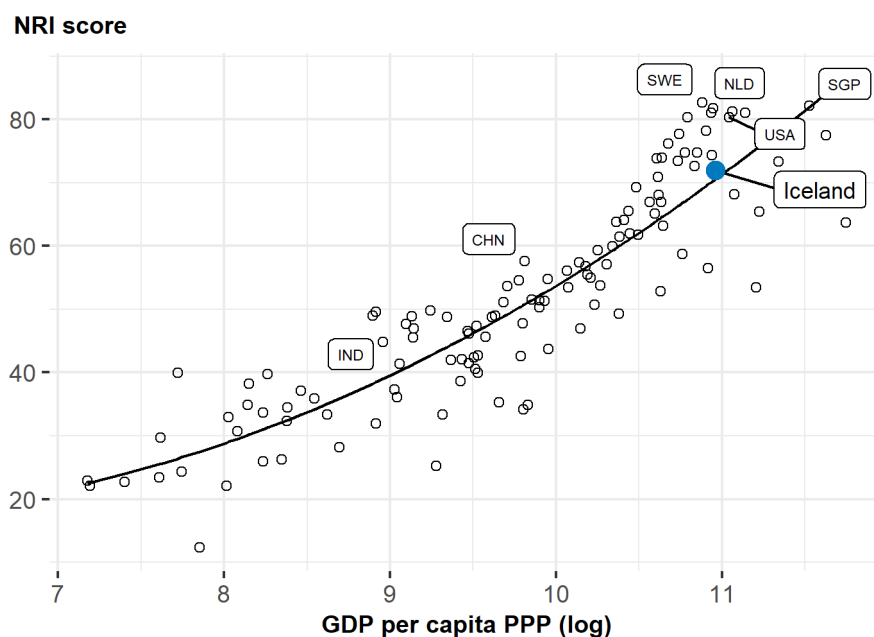
Table 1: Iceland rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	2	Regulation	22
Quality of Life	3	Governments	24
Access	7	Trust	29
Content	7	Economy	30
SDG Contribution	8	Future Technologies	40
Businesses	17	Inclusion	43

NRI score and income

Figure 3 shows the position of Iceland 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, Iceland 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Iceland belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Iceland is ranked 21st 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 three of the four pillars: Score, Technology, People and Impact. At the sub-pillar level, it outperforms high-income countries in eight of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Regulation, Quality of Life and SDG Contribution.

Europe

Iceland is ranked 14th 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 ten of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Economy, Quality of Life and SDG Contribution.

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



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

Dimension	Iceland	High-income countries	Europe
NRI	71.94	68.12	65.20
Technology	69.49	66.07	63.08
People	67.74	61.07	57.50
Governance	75.44	77.07	73.99
Impact	75.08	68.29	66.24

Strongest and weakest indicators

The indicators where Iceland performs particularly well include ICT skills, Use of clean fuels and technology, and Digital participation and content creation (Table 3). By contrast, the economy's weakest indicators include Medium and high-tech industry, Cybersecurity, and ICT PCT patent applications.

Table 3: Top-ranked and bottom-ranked indicators of Iceland

Strongest indicators	Rank	Weakest indicators	Rank
ICT skills	1	Government procurement of advanced technology products	37
Use of clean fuels and technology	1	Publication and use of open data	37
Digital participation and content creation	2	Robot density	39
Fixed-broadband subscriptions	3	ICT regulatory environment	50
Internet users	3	Government online services	63
International Internet bandwidth	4	E-commerce legislation	66
Happiness	4	E-Participation	72
Pollution	4	ICT PCT patent applications	80
Internet access	5	Cybersecurity	84
Professionals	6	Medium and high-tech industry	92

NRI 2019 At-A-Glance: Iceland

Network Readiness Index

Rank: 21 (out of 121)

Score: 71.94

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	20	69.49	C. Governance pillar	30	75.44
1st sub-pillar: Access	7	88.82	1st sub-pillar: Trust	29	73.75
2nd sub-pillar: Content	7	80.04	2nd sub-pillar: Regulation	22	81.75
3rd sub-pillar: Future Technologies	40	39.60	3rd sub-pillar: Inclusion	43	70.83
B. People pillar	16	67.74	D. Impact pillar	12	75.08
1st sub-pillar: Individuals	2	76.78	1st sub-pillar: Economy	30	36.56
2nd sub-pillar: Businesses	17	63.36	2nd sub-pillar: Quality of Life	3	91.99
3rd sub-pillar: Governments	24	63.08	3rd sub-pillar: SDG Contribution	8	96.69

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	24	80.30	3.1.1 Rule of law	13	92.55
1.1.2 Handset prices	10	75.04	3.1.2 Software piracy rate	34	60.81
1.1.3 Internet access	5	97.72	3.1.3 Secure Internet servers	7	94.50
1.1.4 4G mobile network coverage	36	98.20	3.1.4 Cybersecurity	84	47.15
1.1.5 Fixed-broadband subscriptions	3	99.46	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	4	82.23	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	19	82.64
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	25	86.20
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	18	71.52
1.2.2 Mobile apps development	11	88.63	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	10	13.93	3.2.5 Social safety net protection	10	88.25
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	50	86.88
1.3.1 Availability of latest technologies	8	91.98	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	25	62.79	3.3.1 E-Participation	72	64.33
1.3.3 Government procurement of advanced technology products	37	49.50	3.3.2 Socioeconomic gap in use of digital payments	NA	NA
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	25	80.03
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	12	68.13
1.3.6 Robot density	39	6.06	3.3.5 Rural gap in use of digital payments	NA	NA
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	3	99.29	4.1.1 Medium and high-tech industry	92	16.42
2.1.2 Active mobile-broadband subscriptions	15	48.95	4.1.2 High-tech exports	11	44.48
2.1.3 Use of virtual social networks	7	83.37	4.1.3 PCT patent applications	17	28.71
2.1.4 Tertiary enrolment	25	52.31	4.1.4 Labour productivity per employee	20	56.62
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	1	100.00	4.2.1 Happiness	4	92.04
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	10	94.99
2.2.1 Firms with website	15	81.28	4.2.3 Income inequality	13	92.63
2.2.2 Internet shopping	NA	NA	4.2.4 Healthy life expectancy at birth	9	88.28
2.2.3 Professionals	6	67.28	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	25	60.65	4.3.1 Access to basic services	27	99.20
2.2.5 Extent of staff training	18	71.79	4.3.2 Pollution	4	99.77
2.2.6 R&D expenditure by businesses	14	35.78	4.3.3 Road safety	28	87.81
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	63	70.00	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	37	38.87	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	19	73.43			
2.3.4 R&D expenditure by governments and higher education	13	70.00			

* Confidential data

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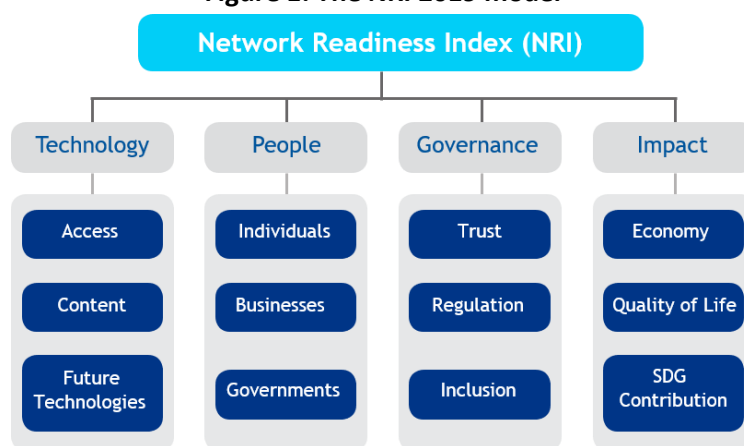
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Network Readiness Index 2019

India

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

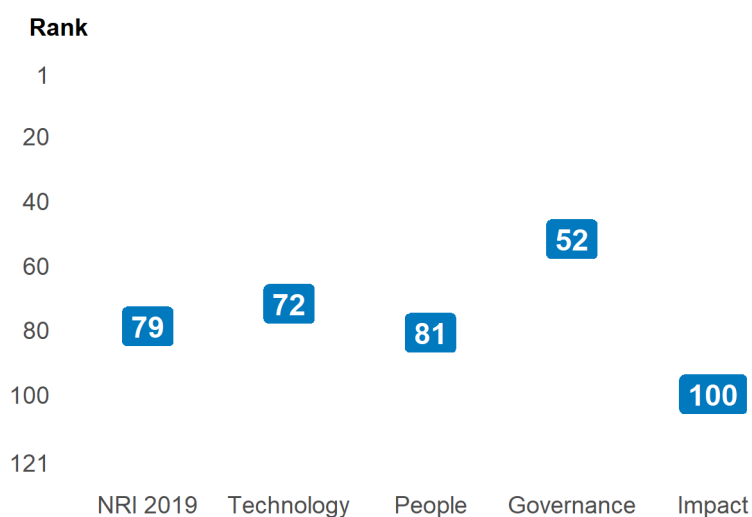
Figure 1: The NRI 2019 model



Global NRI position of India

India ranks 79th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: India global ranking, overall and by pillar



Performance at sub-pillar level

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

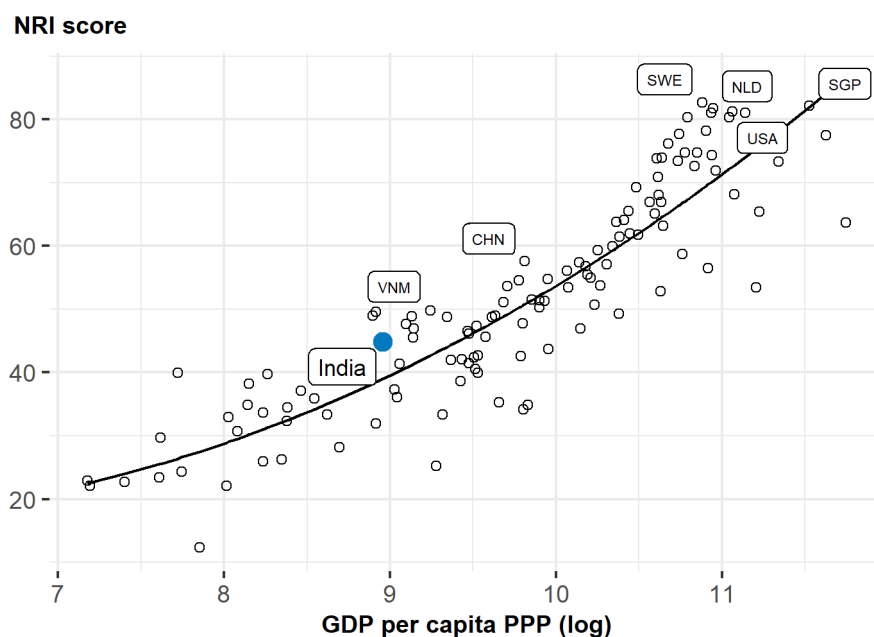
Table 1: India rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	36	Access	73
Future Technologies	46	Content	84
Trust	49	Businesses	87
Inclusion	58	Quality of Life	93
Regulation	59	Individuals	103
Economy	66	SDG Contribution	108

NRI score and income

Figure 3 shows the position of India 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, India 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41). USA is ranked 8th. India belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

India is ranked 6th 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 three of the four pillars: Score, Technology, People and Governance. At the sub-pillar level, it outperforms lower-middle-income countries in nine of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion and Economy.

Asia & Pacific

India is ranked 13th within Asia & Pacific (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Governance. With regard to sub-pillars, it outperforms the average in Asia & Pacific in four of the twelve sub-pillars: Governments, Trust, Regulation and Inclusion.

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

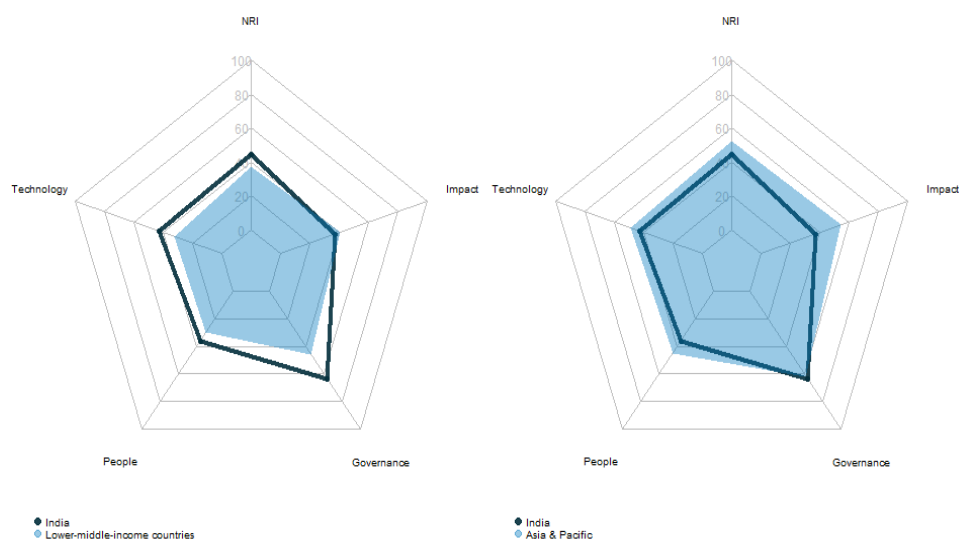


Table 2: India scores vs. averages of its income group and region, overall and by pillar

Dimension	India	Lower-middle-income countries	Asia & Pacific
NRI	44.81	37.18	52.44
Technology	42.76	32.15	48.56
People	35.87	30.04	44.85
Governance	63.66	46.17	61.84
Impact	36.96	40.35	54.50

Strongest and weakest indicators

The indicators where India performs particularly well include Online trust and safety, Government procurement of advanced technology products, and Government online services (Table 3). By contrast, the economy's weakest indicators include Happiness, Pollution, and Active mobile-broadband subscriptions.

Table 3: Top-ranked and bottom-ranked indicators of India

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	5	Internet access	96
Government procurement of advanced technology products	8	Access to basic services	98
Government online services	9	Internet users	99
E-Participation	15	Internet shopping	99
Legal framework's adaptability to digital business models	26	Healthy life expectancy at birth	99
Company investment in emerging technology	27	Use of virtual social networks	101
Extent of staff training	31	Professionals	103
Freedom to make life choices	32	Active mobile-broadband subscriptions	106
Publication and use of open data	33	Pollution	114
Medium and high-tech industry	33	Happiness	115

NRI 2019 At-A-Glance: India

Network Readiness Index

Rank: 79 (out of 121)

Score: 44.81

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	72	42.76	C. Governance pillar	52	63.66
1st sub-pillar: Access	73	59.14	1st sub-pillar: Trust	49	61.89
2nd sub-pillar: Content	84	32.97	2nd sub-pillar: Regulation	59	64.61
3rd sub-pillar: Future Technologies	46	36.16	3rd sub-pillar: Inclusion	58	64.49
B. People pillar	81	35.87	D. Impact pillar	100	36.96
1st sub-pillar: Individuals	103	28.35	1st sub-pillar: Economy	66	19.37
2nd sub-pillar: Businesses	87	22.60	2nd sub-pillar: Quality of Life	93	52.39
3rd sub-pillar: Governments	36	56.67	3rd sub-pillar: SDG Contribution	108	39.11

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	38	74.13	3.1.1 Rule of law	59	53.93
1.1.2 Handset prices	55	49.67	3.1.2 Software piracy rate	50	44.59
1.1.3 Internet access	96	20.39	3.1.3 Secure Internet servers	84	44.65
1.1.4 4G mobile network coverage	54	94.00	3.1.4 Cybersecurity	49	76.75
1.1.5 Fixed-broadband subscriptions	68	53.11	3.1.5 Online trust and safety	5	89.50
1.1.6 International Internet bandwidth	84	63.55	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	82	47.37
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	59	72.19
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	26	63.98
1.2.2 Mobile apps development	81	51.10	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	48	0.79	3.2.5 Social safety net protection	43	54.42
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	84	74.71
1.3.1 Availability of latest technologies	70	50.48	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	27	61.27	3.3.1 E-Participation	15	94.91
1.3.3 Government procurement of advanced technology products	8	78.31	3.3.2 Socioeconomic gap in use of digital payments	85	50.15
1.3.4 ICT PCT patent applications	52	7.63	3.3.3 Availability of local online content	60	55.11
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	52	1.09	3.3.5 Rural gap in use of digital payments	77	57.80
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	99	27.43	4.1.1 Medium and high-tech industry	33	49.44
2.1.2 Active mobile-broadband subscriptions	106	12.93	4.1.2 High-tech exports	51	17.06
2.1.3 Use of virtual social networks	101	21.00	4.1.3 PCT patent applications	61	0.49
2.1.4 Tertiary enrolment	83	20.06	4.1.4 Labour productivity per employee	86	10.50
2.1.5 Adult literacy rate	83	60.31	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	115	15.84
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	32	83.79
2.2.1 Firms with website	69	39.33	4.2.3 Income inequality	52	71.84
2.2.2 Internet shopping	99	3.63	4.2.4 Healthy life expectancy at birth	99	38.10
2.2.3 Professionals	103	8.93	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	93	16.96	4.3.1 Access to basic services	98	68.49
2.2.5 Extent of staff training	31	59.90	4.3.2 Pollution	114	32.87
2.2.6 R&D expenditure by businesses	49	6.85	4.3.3 Road safety	92	37.81
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	67	24.54
2.3.1 Government online services	9	94.62	4.3.5 Maths proficiency in schools	60	26.47
2.3.2 Publication and use of open data	33	42.80	4.3.6 Use of clean fuels and technology	94	44.44
2.3.3 ICT use and government efficiency	36	58.16			
2.3.4 R&D expenditure by governments and higher education	54	31.10			

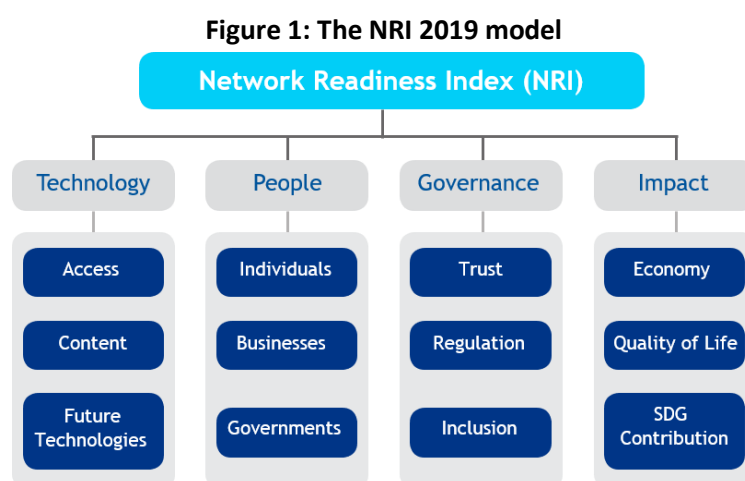
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Network Readiness Index 2019 Indonesia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Indonesia

Indonesia ranks 76th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

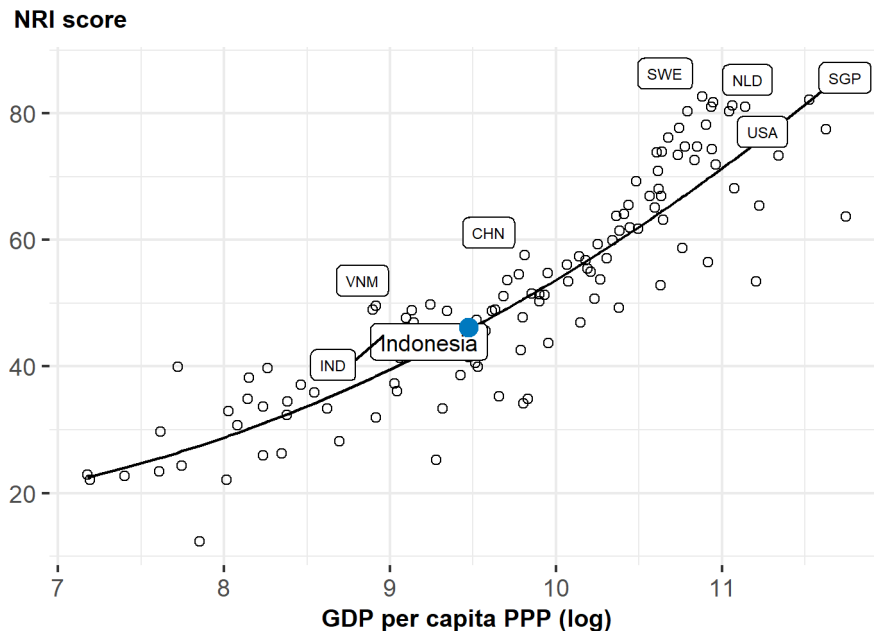
Table 1: Indonesia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Regulation	48	Quality of Life	68
Future Technologies	49	Inclusion	84
Trust	56	SDG Contribution	84
Access	67	Individuals	85
Economy	67	Content	93
Governments	68	Businesses	99

NRI score and income

Figure 3 shows the position of Indonesia 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, Indonesia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Indonesia belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

Indonesia is ranked 5th 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 each of the four pillars. At the sub-pillar level, it outperforms lower-middle-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Asia & Pacific

Indonesia is ranked 12th within Asia & Pacific (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 Asia & Pacific in one of the twelve sub-pillars: Regulation.

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

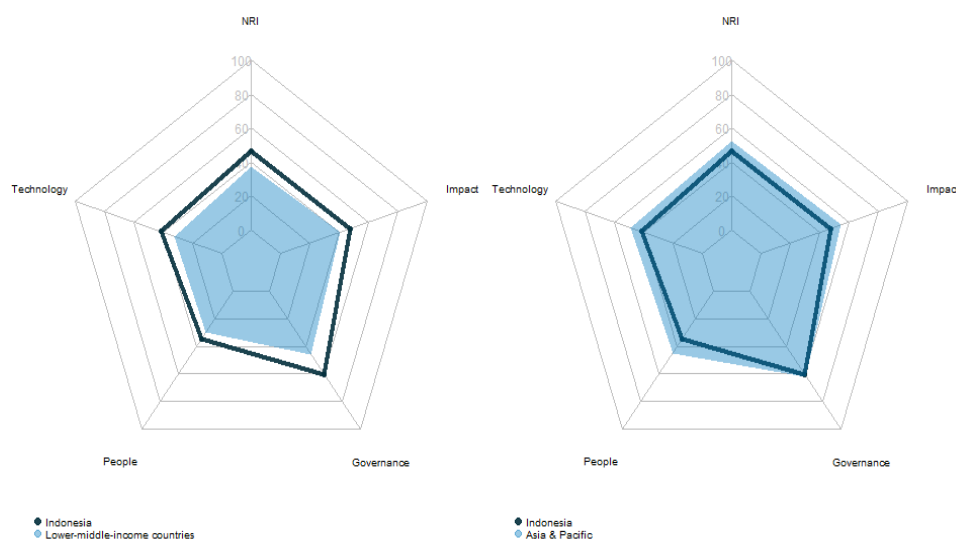


Table 2: Indonesia scores vs. averages of its income group and region, overall and by pillar

Dimension	Indonesia	Lower-middle-income countries	Asia & Pacific
NRI	46.15	37.18	52.44
Technology	41.56	32.15	48.56
People	34.77	30.04	44.85
Governance	60.57	46.17	61.84
Impact	47.70	40.35	54.50

Strongest and weakest indicators

The indicators where Indonesia performs particularly well include E-commerce legislation, Online trust and safety, and Government procurement of advanced technology products (Table 3). By contrast, the economy's weakest indicators include Professionals, Firms with website, and Socioeconomic gap in use of digital payments.

Table 3: Top-ranked and bottom-ranked indicators of Indonesia

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Government online services	90
Online trust and safety	3	ICT regulatory environment	90
Government procurement of advanced technology products	12	Software piracy rate	93
Legal framework's adaptability to digital business models	27	Healthy life expectancy at birth	93
Company investment in emerging technology	28	Digital participation and content creation	95
Extent of staff training	28	Access to basic services	95
ICT use and government efficiency	28	Internet users	96
Computer software spending	30	Socioeconomic gap in use of digital payments	97
Freedom to make life choices	36	Firms with website	108
Publication and use of open data	38	Professionals	115

NRI 2019 At-A-Glance: Indonesia

Network Readiness Index

Rank: 76 (out of 121)

Score: 46.15

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	75	41.56	C. Governance pillar	62	60.57
1st sub-pillar: Access	67	62.86	1st sub-pillar: Trust	56	58.26
2nd sub-pillar: Content	93	26.65	2nd sub-pillar: Regulation	48	68.17
3rd sub-pillar: Future Technologies	49	35.18	3rd sub-pillar: Inclusion	84	55.29
B. People pillar	85	34.77	D. Impact pillar	81	47.70
1st sub-pillar: Individuals	85	43.58	1st sub-pillar: Economy	67	18.88
2nd sub-pillar: Businesses	99	17.81	2nd sub-pillar: Quality of Life	68	60.30
3rd sub-pillar: Governments	68	42.93	3rd sub-pillar: SDG Contribution	84	63.91

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	64	63.58	3.1.1 Rule of law	79	46.15
1.1.2 Handset prices	72	42.05	3.1.2 Software piracy rate	93	8.11
1.1.3 Internet access	68	63.96	3.1.3 Secure Internet servers	61	61.06
1.1.4 4G mobile network coverage	61	92.70	3.1.4 Cybersecurity	43	83.00
1.1.5 Fixed-broadband subscriptions	71	48.04	3.1.5 Online trust and safety	3	93.00
1.1.6 International Internet bandwidth	75	66.84	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	75	49.84
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	66	69.60
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	27	62.20
1.2.2 Mobile apps development	83	49.79	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	75	0.16	3.2.5 Social safety net protection	41	56.11
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	90	71.24
1.3.1 Availability of latest technologies	65	52.56	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	28	59.63	3.3.1 E-Participation	86	56.69
1.3.3 Government procurement of advanced technology products	12	69.87	3.3.2 Socioeconomic gap in use of digital payments	97	41.34
1.3.4 ICT PCT patent applications	79	0.16	3.3.3 Availability of local online content	45	62.23
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	75	46.91
1.3.6 Robot density	47	1.56	3.3.5 Rural gap in use of digital payments	57	69.30
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	96	33.37	4.1.1 Medium and high-tech industry	40	44.72
2.1.2 Active mobile-broadband subscriptions	50	33.30	4.1.2 High-tech exports	56	15.19
2.1.3 Use of virtual social networks	58	55.30	4.1.3 PCT patent applications	86	0.01
2.1.4 Tertiary enrolment	73	26.14	4.1.4 Labour productivity per employee	76	15.60
2.1.5 Adult literacy rate	43	93.31	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	53	20.07	4.2.1 Happiness	75	47.55
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	36	81.23
2.2.1 Firms with website	108	2.47	4.2.3 Income inequality	66	65.53
2.2.2 Internet shopping	68	12.64	4.2.4 Healthy life expectancy at birth	93	46.89
2.2.3 Professionals	115	1.14	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	77	25.70	4.3.1 Access to basic services	95	75.25
2.2.5 Extent of staff training	28	64.35	4.3.2 Pollution	42	88.89
2.2.6 R&D expenditure by businesses	77	0.54	4.3.3 Road safety	48	70.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	42	66.42
2.3.1 Government online services	90	52.30	4.3.5 Maths proficiency in schools	62	15.93
2.3.2 Publication and use of open data	38	38.35	4.3.6 Use of clean fuels and technology	87	66.67
2.3.3 ICT use and government efficiency	28	63.27			
2.3.4 R&D expenditure by governments and higher education	75	17.79			

* Confidential data

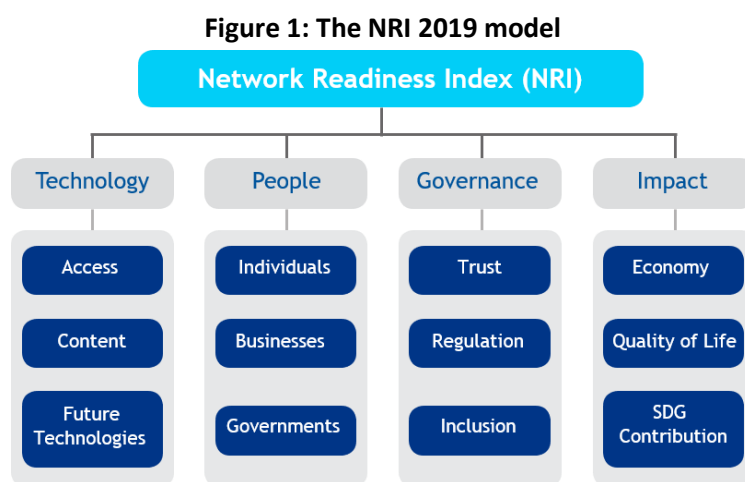
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Network Readiness Index 2019

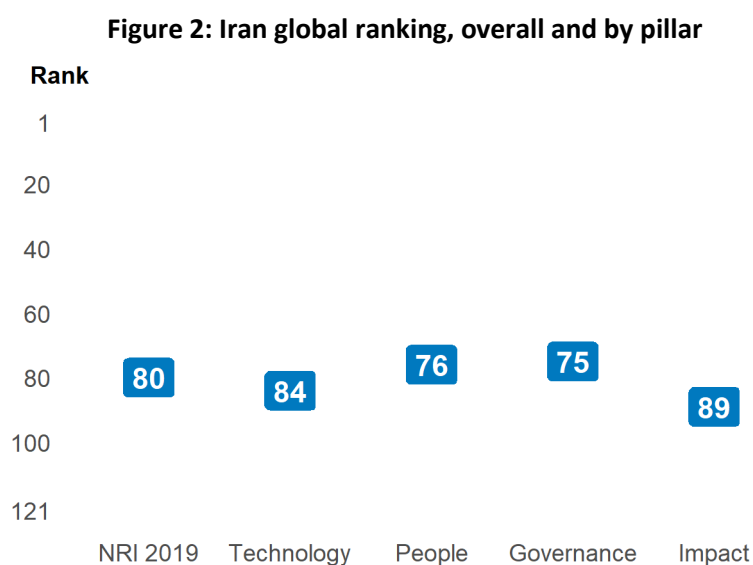
Iran

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Iran

Iran ranks 80th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

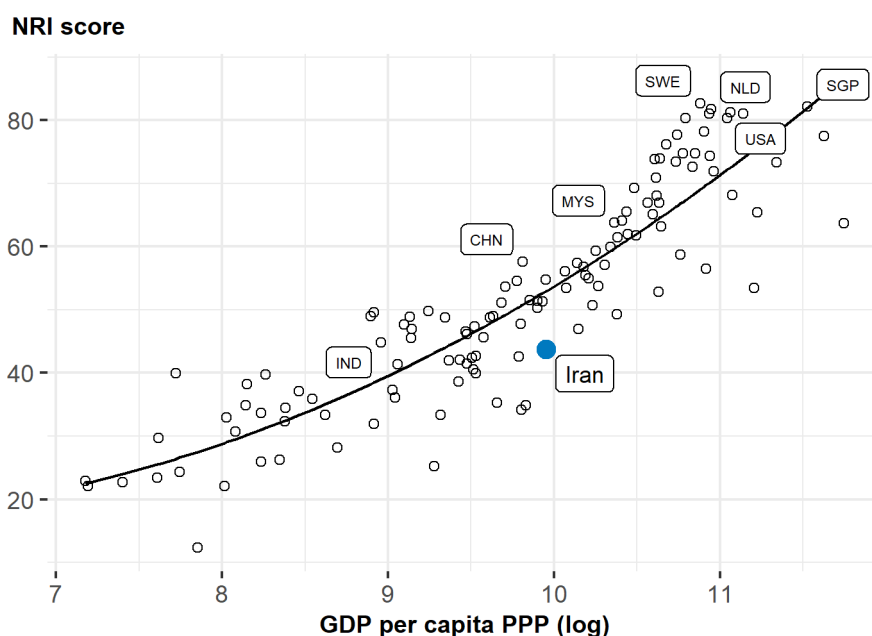
Table 1: Iran rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	50	Regulation	82
Governments	55	Individuals	83
Inclusion	69	Content	85
Trust	80	Businesses	91
SDG Contribution	80	Future Technologies	96
Access	82	Quality of Life	104

NRI score and income

Figure 3 shows the position of Iran 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, Iran 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Iran belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Upper-middle-income countries

Iran is ranked 26th in the group of upper-middle-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 outperforms upper-middle-income countries in three of the twelve sub-pillars: Governments, Inclusion and Economy.

Asia & Pacific

Iran is ranked 14th 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 Iran against its income group and region, overall and by pillar

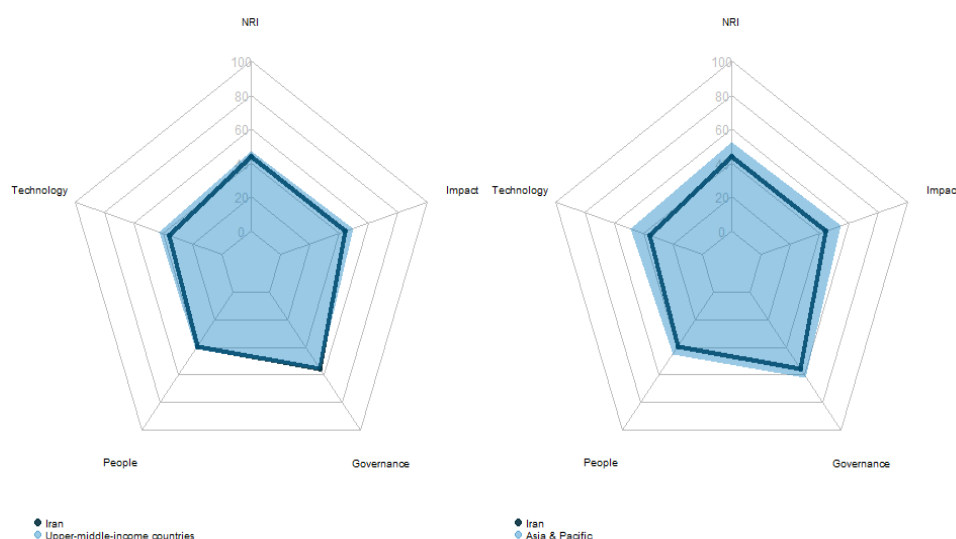


Table 2: Iran scores vs. averages of its income group and region, overall and by pillar

Dimension	Iran	Upper-middle-income countries	Asia & Pacific
NRI	43.66	47.40	52.44
Technology	35.71	42.66	48.56
People	39.26	41.07	44.85
Governance	55.75	56.24	61.84
Impact	43.93	49.62	54.50

Strongest and weakest indicators

The indicators where Iran performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Rural gap in use of digital payments (Table 3). By contrast, the economy's weakest indicators include Regulatory quality, Freedom to make life choices, Extent of staff training, and Happiness.

Table 3: Top-ranked and bottom-ranked indicators of Iran

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	E-Participation	97
Use of clean fuels and technology	1	Pollution	97
Rural gap in use of digital payments	11	Mobile apps development	100
Socioeconomic gap in use of digital payments	18	Rule of law	101
Medium and high-tech industry	19	High-tech exports	102
Tertiary enrolment	29	Ease of doing business	103
Computer software spending	30	Extent of staff training	110
Internet shopping	41	Happiness	110
Government procurement of advanced technology products	44	Freedom to make life choices	115
Reading proficiency in schools	45	Regulatory quality	118

NRI 2019 At-A-Glance: Iran

Network Readiness Index

Rank: 80 (out of 121)

Score: 43.66

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	84	35.71	C. Governance pillar	75	55.75
1st sub-pillar: Access	82	52.10	1st sub-pillar: Trust	80	49.17
2nd sub-pillar: Content	85	32.85	2nd sub-pillar: Regulation	82	57.32
3rd sub-pillar: Future Technologies	96	22.17	3rd sub-pillar: Inclusion	69	60.75
B. People pillar	76	39.26	D. Impact pillar	89	43.93
1st sub-pillar: Individuals	83	48.86	1st sub-pillar: Economy	50	24.45
2nd sub-pillar: Businesses	91	21.85	2nd sub-pillar: Quality of Life	104	40.92
3rd sub-pillar: Governments	55	47.09	3rd sub-pillar: SDG Contribution	80	66.42

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	55	67.55	3.1.1 Rule of law	101	37.52
1.1.2 Handset prices	83	37.40	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	47	78.19	3.1.3 Secure Internet servers	66	52.92
1.1.4 4G mobile network coverage	70	88.02	3.1.4 Cybersecurity	63	68.20
1.1.5 Fixed-broadband subscriptions	89	20.27	3.1.5 Online trust and safety	80	38.05
1.1.6 International Internet bandwidth	87	63.12	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	59	10.18	3.2.1 Regulatory quality	118	22.86
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	103	50.08
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	59	44.43
1.2.2 Mobile apps development	100	38.06	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	82	0.08	3.2.5 Social safety net protection	61	44.31
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	70	82.24
1.3.1 Availability of latest technologies	97	36.16	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	96	21.65	3.3.1 E-Participation	97	46.50
1.3.3 Government procurement of advanced technology products	44	46.10	3.3.2 Socioeconomic gap in use of digital payments	18	95.17
1.3.4 ICT PCT patent applications	68	1.71	3.3.3 Availability of local online content	93	34.54
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	73	48.78
1.3.6 Robot density	65	0.12	3.3.5 Rural gap in use of digital payments	11	78.75
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	65	67.00	4.1.1 Medium and high-tech industry	19	57.67
2.1.2 Active mobile-broadband subscriptions	75	25.49	4.1.2 High-tech exports	102	2.53
2.1.3 Use of virtual social networks	56	56.34	4.1.3 PCT patent applications	72	0.21
2.1.4 Tertiary enrolment	29	50.68	4.1.4 Labour productivity per employee	46	37.38
2.1.5 Adult literacy rate	71	77.63	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	56	16.00	4.2.1 Happiness	110	25.43
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	115	17.30
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	74	60.53
2.2.2 Internet shopping	41	32.95	4.2.4 Healthy life expectancy at birth	77	60.44
2.2.3 Professionals	62	27.32	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	83	23.90	4.3.1 Access to basic services	78	89.23
2.2.5 Extent of staff training	110	23.33	4.3.2 Pollution	97	66.86
2.2.6 R&D expenditure by businesses	65	1.74	4.3.3 Road safety	87	44.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	45	66.18
2.3.1 Government online services	85	59.23	4.3.5 Maths proficiency in schools	56	31.85
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	49	49.77			
2.3.4 R&D expenditure by governments and higher education	51	32.28			

* Confidential data

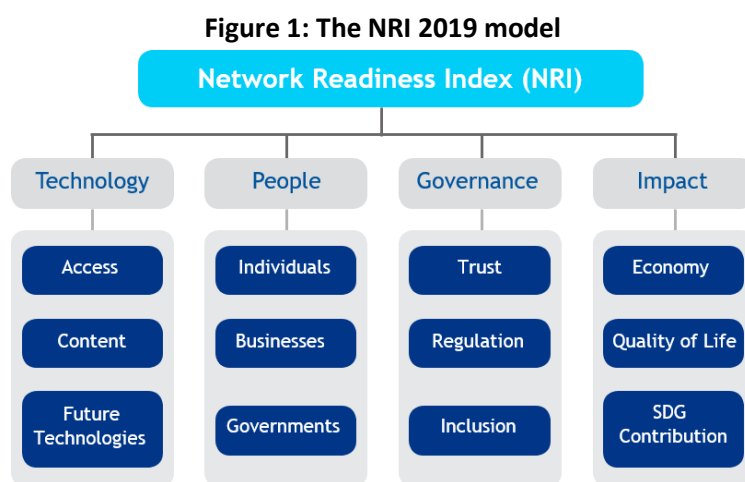
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Network Readiness Index 2019

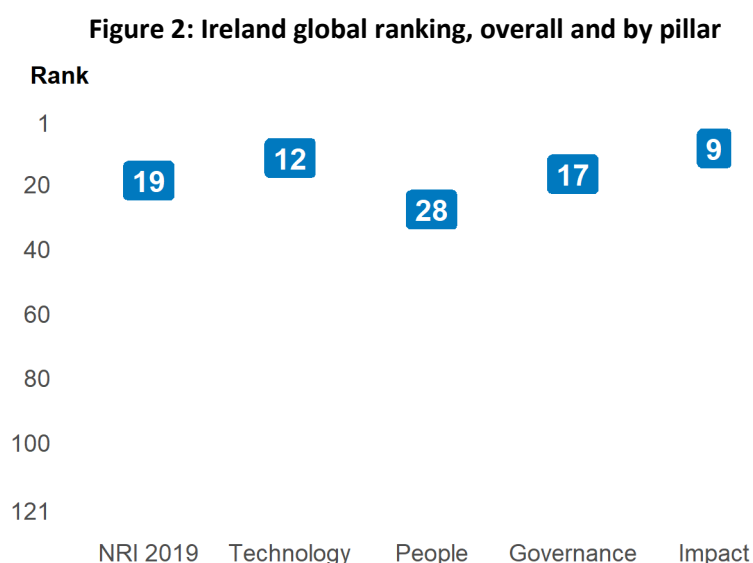
Ireland

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Ireland

Ireland ranks 19th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

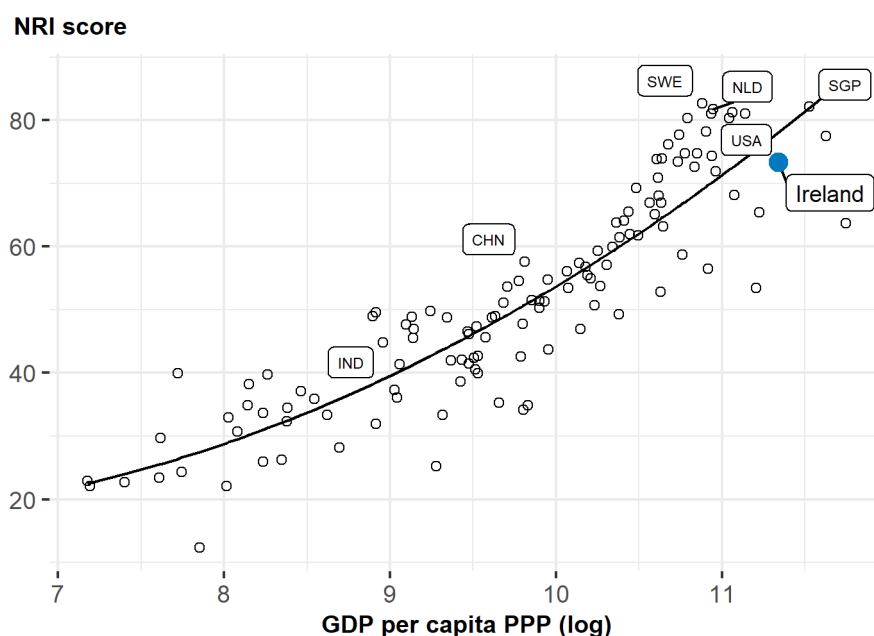
Table 1: Ireland rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	4	Regulation	18
Economy	6	Future Technologies	20
Access	11	Inclusion	20
Trust	16	Businesses	21
Quality of Life	17	Governments	41
SDG Contribution	17	Individuals	46

NRI score and income

Figure 3 shows the position of Ireland 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, Ireland 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Ireland belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Ireland is ranked 19th 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 three of the four pillars: Score, Technology, Governance and Impact. At the sub-pillar level, it outperforms high-income countries in ten of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Ireland is ranked 12th 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 ten of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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



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

Dimension	Ireland	High-income countries	Europe
NRI	73.29	68.12	65.20
Technology	75.43	66.07	63.08
People	57.76	61.07	57.50
Governance	81.88	77.07	73.99
Impact	78.10	68.29	66.24

Strongest and weakest indicators

The indicators where Ireland performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Computer software spending (Table 3). By contrast, the economy's weakest indicators include 4G mobile network coverage, Access to basic services, and R&D expenditure by governments and higher education.

Table 3: Top-ranked and bottom-ranked indicators of Ireland

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Government online services	39
Use of clean fuels and technology	1	Cybersecurity	40
Computer software spending	2	Technicians and associate professionals	42
ICT regulatory environment	2	International Internet bandwidth	44
Handset prices	3	Freedom to make life choices	46
Labour productivity per employee	3	Online trust and safety	48
Mobile tariffs	4	Government procurement of advanced technology products	54
Mobile apps development	4	R&D expenditure by governments and higher education	59
Secure Internet servers	4	4G mobile network coverage	66
Intellectual property receipts	5	Access to basic services	66

NRI 2019 At-A-Glance: Ireland

Network Readiness Index

Rank: 19 (out of 121)

Score: 73.29

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	12	75.43	C. Governance pillar	17	81.88
1st sub-pillar: Access	11	87.49	1st sub-pillar: Trust	16	82.37
2nd sub-pillar: Content	4	82.65	2nd sub-pillar: Regulation	18	84.00
3rd sub-pillar: Future Technologies	20	56.14	3rd sub-pillar: Inclusion	20	79.29
B. People pillar	28	57.76	D. Impact pillar	9	78.10
1st sub-pillar: Individuals	46	60.02	1st sub-pillar: Economy	6	58.08
2nd sub-pillar: Businesses	21	59.58	2nd sub-pillar: Quality of Life	17	81.38
3rd sub-pillar: Governments	41	53.69	3rd sub-pillar: SDG Contribution	17	94.86

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	4	97.63	3.1.1 Rule of law	18	86.73
1.1.2 Handset prices	3	90.84	3.1.2 Software piracy rate	19	81.08
1.1.3 Internet access	19	88.36	3.1.3 Secure Internet servers	4	95.16
1.1.4 4G mobile network coverage	66	90.00	3.1.4 Cybersecurity	40	83.88
1.1.5 Fixed-broadband subscriptions	38	87.40	3.1.5 Online trust and safety	48	64.99
1.1.6 International Internet bandwidth	44	70.68	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	15	86.55
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	23	87.28
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	35	56.89
1.2.2 Mobile apps development	4	95.04	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	5	29.39	3.2.5 Social safety net protection	23	73.64
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	2	99.62
1.3.1 Availability of latest technologies	32	73.58	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	18	68.03	3.3.1 E-Participation	22	92.36
1.3.3 Government procurement of advanced technology products	54	43.45	3.3.2 Socioeconomic gap in use of digital payments	24	90.83
1.3.4 ICT PCT patent applications	11	66.92	3.3.3 Availability of local online content	35	67.03
1.3.5 Computer software spending	2	72.73	3.3.4 Gender gap in internet use	5	71.73
1.3.6 Robot density	32	12.16	3.3.5 Rural gap in use of digital payments	36	74.48
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	28	83.16	4.1.1 Medium and high-tech industry	7	69.46
2.1.2 Active mobile-broadband subscriptions	26	40.06	4.1.2 High-tech exports	10	46.77
2.1.3 Use of virtual social networks	35	65.70	4.1.3 PCT patent applications	18	27.03
2.1.4 Tertiary enrolment	22	56.68	4.1.4 Labour productivity per employee	3	89.06
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	32	54.49	4.2.1 Happiness	17	81.34
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	46	77.08
2.2.1 Firms with website	17	78.21	4.2.3 Income inequality	24	82.11
2.2.2 Internet shopping	13	76.29	4.2.4 Healthy life expectancy at birth	19	84.98
2.2.3 Professionals	14	60.87	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	42	49.37	4.3.1 Access to basic services	66	92.51
2.2.5 Extent of staff training	15	74.04	4.3.2 Pollution	11	97.15
2.2.6 R&D expenditure by businesses	27	18.72	4.3.3 Road safety	8	95.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	9	98.46
2.3.1 Government online services	39	80.77	4.3.5 Maths proficiency in schools	9	85.39
2.3.2 Publication and use of open data	26	47.44	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	33	59.51			
2.3.4 R&D expenditure by governments and higher education	59	27.06			

* Confidential data

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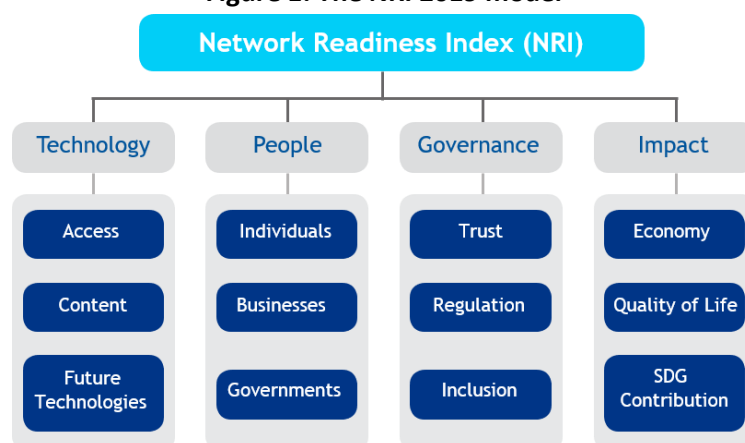
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Network Readiness Index 2019

Israel

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

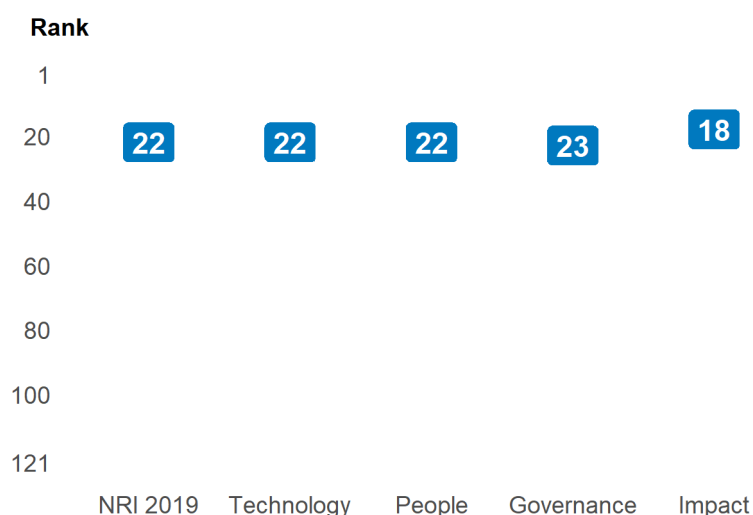
Figure 1: The NRI 2019 model



Global NRI position of Israel

Israel ranks 22nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Israel global ranking, overall and by pillar



Performance at sub-pillar level

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

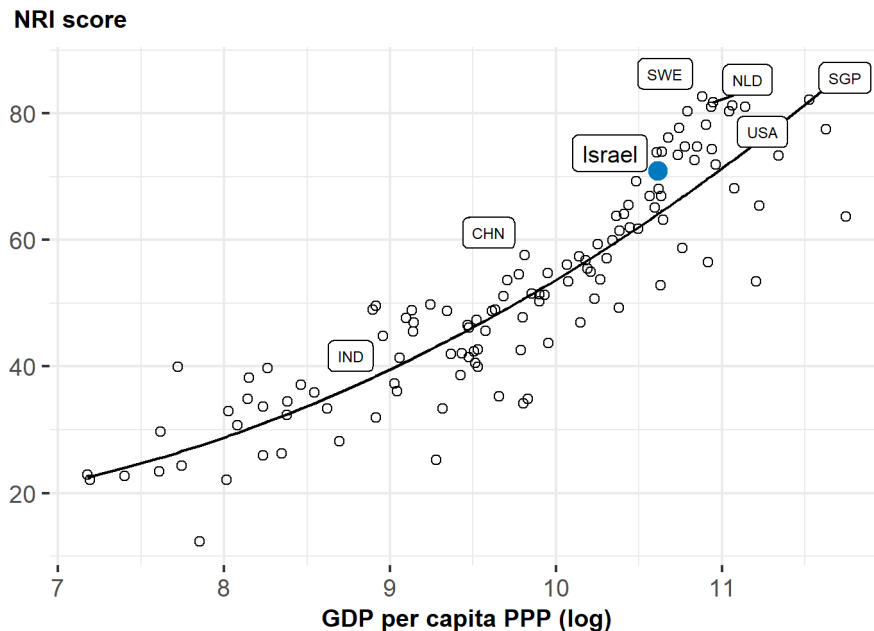
Table 1: Israel rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	12	Regulation	24
Economy	12	Governments	26
Future Technologies	13	Inclusion	26
SDG Contribution	18	Quality of Life	39
Content	20	Individuals	42
Trust	23	Access	53

NRI score and income

Figure 3 shows the position of Israel 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, Israel 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Israel belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Israel is ranked 22nd 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in eight of the twelve sub-pillars: Content, Future Technology, Businesses, Trust, Regulation, Inclusion, Economy and SDG Contribution.

Europe

Israel is ranked 15th 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 nine of the twelve sub-pillars: Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

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



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

Dimension	Israel	High-income countries	Europe
NRI	70.86	68.12	65.20
Technology	69.06	66.07	63.08
People	63.55	61.07	57.50
Governance	78.29	77.07	73.99
Impact	72.55	68.29	66.24

Strongest and weakest indicators

The indicators where Israel performs particularly well include R&D expenditure by businesses, E-commerce legislation, and Access to basic services (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, ICT regulatory environment, 4G mobile network coverage, and Fixed-broadband subscriptions.

Table 3: Top-ranked and bottom-ranked indicators of Israel

Strongest indicators	Rank	Weakest indicators	Rank
R&D expenditure by businesses	1	Gender gap in internet use	46
E-commerce legislation	1	Internet access	56
Access to basic services	1	International Internet bandwidth	60
Use of clean fuels and technology	1	Pollution	64
Company investment in emerging technology	2	Rural gap in use of digital payments	66
Availability of local online content	2	Income inequality	69
Availability of latest technologies	4	4G mobile network coverage	76
ICT PCT patent applications	5	Fixed-broadband subscriptions	76
PCT patent applications	5	ICT regulatory environment	93
Professionals	7	Freedom to make life choices	97

NRI 2019 At-A-Glance: Israel

Network Readiness Index

Rank: 22 (out of 121)

Score: 70.86

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	22	69.06	C. Governance pillar	23	78.29
1st sub-pillar: Access	53	71.86	1st sub-pillar: Trust	23	78.24
2nd sub-pillar: Content	20	70.57	2nd sub-pillar: Regulation	24	79.30
3rd sub-pillar: Future Technologies	13	64.75	3rd sub-pillar: Inclusion	26	77.33
B. People pillar	22	63.55	D. Impact pillar	18	72.55
1st sub-pillar: Individuals	42	60.51	1st sub-pillar: Economy	12	54.00
2nd sub-pillar: Businesses	12	67.51	2nd sub-pillar: Quality of Life	39	69.34
3rd sub-pillar: Governments	26	62.61	3rd sub-pillar: SDG Contribution	18	94.30

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	13	88.73	3.1.1 Rule of law	29	76.00
1.1.2 Handset prices	30	64.37	3.1.2 Software piracy rate	17	83.78
1.1.3 Internet access	56	72.33	3.1.3 Secure Internet servers	38	78.24
1.1.4 4G mobile network coverage	76	82.00	3.1.4 Cybersecurity	41	83.77
1.1.5 Fixed-broadband subscriptions	76	42.00	3.1.5 Online trust and safety	38	69.41
1.1.6 International Internet bandwidth	60	68.65	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	33	84.94	3.2.1 Regulatory quality	24	78.89
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	34	82.15
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	9	83.93
1.2.2 Mobile apps development	8	90.94	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	14	11.11	3.2.5 Social safety net protection	36	60.72
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	93	70.08
1.3.1 Availability of latest technologies	4	96.93	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	2	95.89	3.3.1 E-Participation	43	80.90
1.3.3 Government procurement of advanced technology products	11	71.91	3.3.2 Socioeconomic gap in use of digital payments	38	81.31
1.3.4 ICT PCT patent applications	5	82.82	3.3.3 Availability of local online content	2	98.05
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	46	60.84
1.3.6 Robot density	30	13.65	3.3.5 Rural gap in use of digital payments	66	65.55
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	33	79.89	4.1.1 Medium and high-tech industry	24	54.12
2.1.2 Active mobile-broadband subscriptions	24	41.04	4.1.2 High-tech exports	13	43.26
2.1.3 Use of virtual social networks	15	75.05	4.1.3 PCT patent applications	5	72.34
2.1.4 Tertiary enrolment	41	46.05	4.1.4 Labour productivity per employee	32	46.30
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	18	80.61
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	97	45.40
2.2.1 Firms with website	41	63.09	4.2.3 Income inequality	69	63.42
2.2.2 Internet shopping	33	51.57	4.2.4 Healthy life expectancy at birth	13	87.91
2.2.3 Professionals	7	67.04	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	33	55.91	4.3.1 Access to basic services	1	100.00
2.2.5 Extent of staff training	22	67.48	4.3.2 Pollution	64	84.50
2.2.6 R&D expenditure by businesses	1	100.00	4.3.3 Road safety	12	95.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	20	91.68
2.3.1 Government online services	39	80.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	28	46.26	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	21	69.73			
2.3.4 R&D expenditure by governments and higher education	25	53.69			

* Confidential data

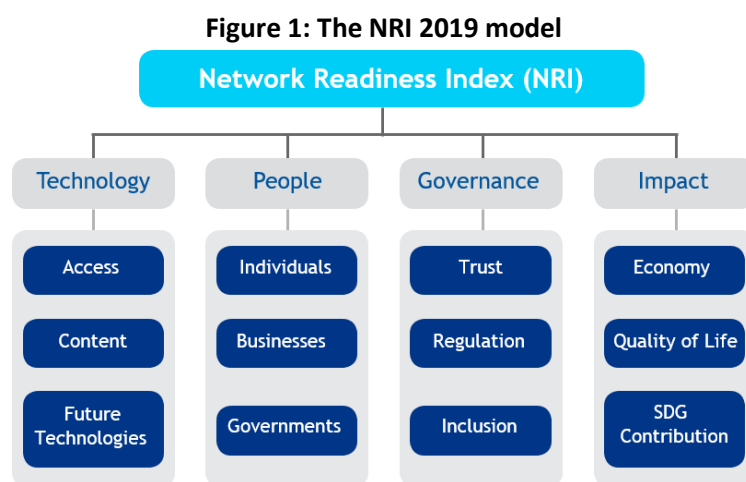
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Network Readiness Index 2019

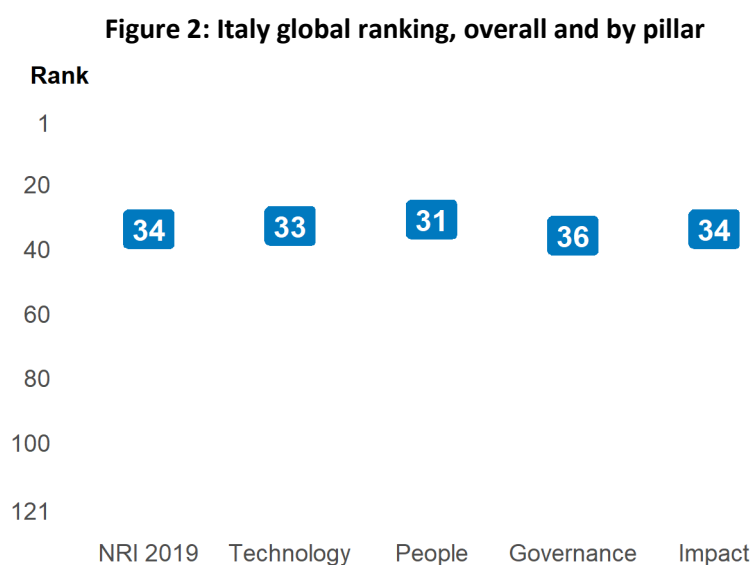
Italy

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Italy

Italy ranks 34th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

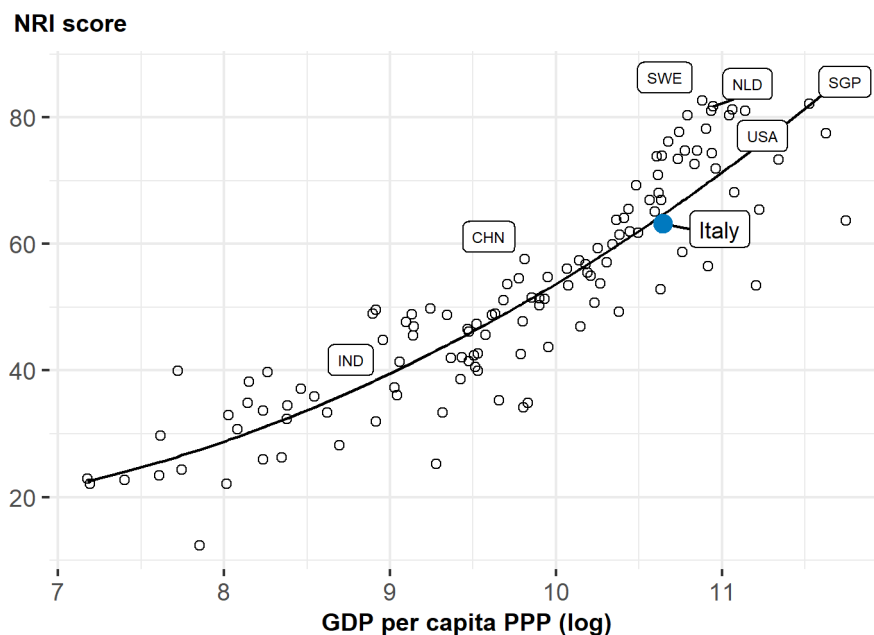
Table 1: Italy rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Inclusion	25	Content	35
Businesses	28	Trust	43
Future Technologies	31	Regulation	43
Economy	31	Access	45
SDG Contribution	31	Individuals	45
Governments	33	Quality of Life	50

NRI score and income

Figure 3 shows the position of Italy 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, Italy 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Italy belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Italy is ranked 33rd 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 outperforms high-income countries in two of the twelve sub-pillars: Inclusion and SDG Contribution.

Europe

Italy is ranked 23rd 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 four of the twelve sub-pillars: Future Technology, Inclusion, Economy and SDG Contribution.

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



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

Dimension	Italy	High-income countries	Europe
NRI	63.21	68.12	65.20
Technology	61.06	66.07	63.08
People	56.26	61.07	57.50
Governance	71.58	77.07	73.99
Impact	63.93	68.29	66.24

Strongest and weakest indicators

The indicators where Italy performs particularly well include E-commerce legislation, ICT regulatory environment, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Extent of staff training, and Legal framework's adaptability to digital business models.

Table 3: Top-ranked and bottom-ranked indicators of Italy

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Company investment in emerging technology	60
ICT regulatory environment	1	Internet access	61
Use of clean fuels and technology	1	Gender gap in internet use	68
Rural gap in use of digital payments	7	Online trust and safety	78
Healthy life expectancy at birth	7	International Internet bandwidth	79
Computer software spending	8	Government procurement of advanced technology products	82
Reading proficiency in schools	8	ICT use and government efficiency	83
Robot density	9	Legal framework's adaptability to digital business models	87
Government online services	9	Extent of staff training	95
Technicians and associate professionals	11	Freedom to make life choices	108

NRI 2019 At-A-Glance: Italy

Network Readiness Index

Rank: 34 (out of 121)

Score: 63.21

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	33	61.06	C. Governance pillar	36	71.58
1st sub-pillar: Access	45	75.63	1st sub-pillar: Trust	43	65.99
2nd sub-pillar: Content	35	61.17	2nd sub-pillar: Regulation	43	71.05
3rd sub-pillar: Future Technologies	31	46.38	3rd sub-pillar: Inclusion	25	77.70
B. People pillar	31	56.26	D. Impact pillar	34	63.93
1st sub-pillar: Individuals	45	60.11	1st sub-pillar: Economy	31	35.16
2nd sub-pillar: Businesses	28	50.67	2nd sub-pillar: Quality of Life	50	65.45
3rd sub-pillar: Governments	33	57.99	3rd sub-pillar: SDG Contribution	31	91.19

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	15	86.45	3.1.1 Rule of law	49	58.96
1.1.2 Handset prices	24	65.86	3.1.2 Software piracy rate	32	62.16
1.1.3 Internet access	61	69.81	3.1.3 Secure Internet servers	34	80.32
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	27	89.69
1.1.5 Fixed-broadband subscriptions	54	73.12	3.1.5 Online trust and safety	78	38.81
1.1.6 International Internet bandwidth	79	65.30	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	37	69.88	3.2.1 Regulatory quality	40	66.20
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	54	75.39
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	87	33.18
1.2.2 Mobile apps development	30	79.04	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	21	4.15	3.2.5 Social safety net protection	47	51.53
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	1	100.00
1.3.1 Availability of latest technologies	46	62.26	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	60	36.10	3.3.1 E-Participation	15	94.91
1.3.3 Government procurement of advanced technology products	82	32.38	3.3.2 Socioeconomic gap in use of digital payments	22	92.79
1.3.4 ICT PCT patent applications	26	33.87	3.3.3 Availability of local online content	37	66.30
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	68	54.74
1.3.6 Robot density	9	59.11	3.3.5 Rural gap in use of digital payments	7	79.77
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	53	71.88	4.1.1 Medium and high-tech industry	22	54.80
2.1.2 Active mobile-broadband subscriptions	36	36.28	4.1.2 High-tech exports	58	14.63
2.1.3 Use of virtual social networks	49	58.42	4.1.3 PCT patent applications	24	17.04
2.1.4 Tertiary enrolment	43	45.01	4.1.4 Labour productivity per employee	24	54.17
2.1.5 Adult literacy rate	15	98.73	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	38	50.36	4.2.1 Happiness	27	72.05
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	108	28.11
2.2.1 Firms with website	33	68.51	4.2.3 Income inequality	49	72.63
2.2.2 Internet shopping	17	70.45	4.2.4 Healthy life expectancy at birth	7	89.01
2.2.3 Professionals	42	38.34	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	11	76.96	4.3.1 Access to basic services	34	98.82
2.2.5 Extent of staff training	95	28.53	4.3.2 Pollution	41	89.22
2.2.6 R&D expenditure by businesses	23	21.21	4.3.3 Road safety	17	90.94
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	8	98.64
2.3.1 Government online services	9	94.62	4.3.5 Maths proficiency in schools	25	69.50
2.3.2 Publication and use of open data	20	55.93	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	83	36.24			
2.3.4 R&D expenditure by governments and higher education	35	45.19			

* Confidential data

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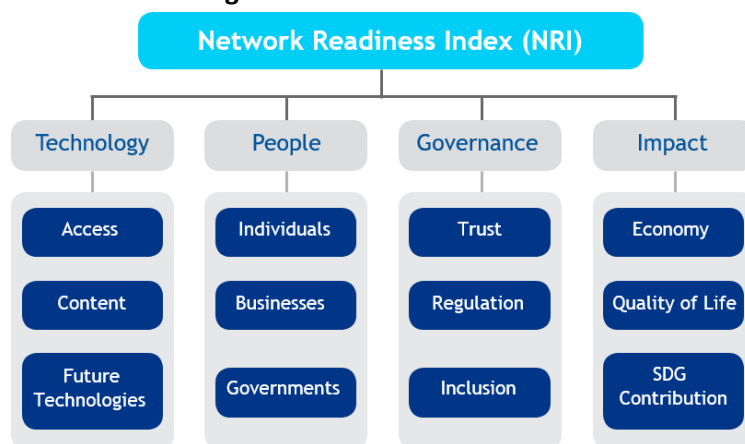
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Network Readiness Index 2019

Jamaica

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

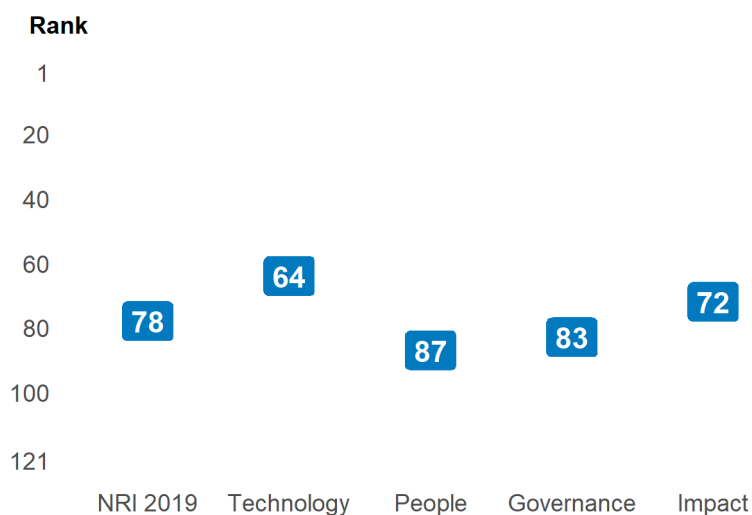
Figure 1: The NRI 2019 model



Global NRI position of Jamaica

Jamaica ranks 78th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Jamaica global ranking, overall and by pillar



Performance at sub-pillar level

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

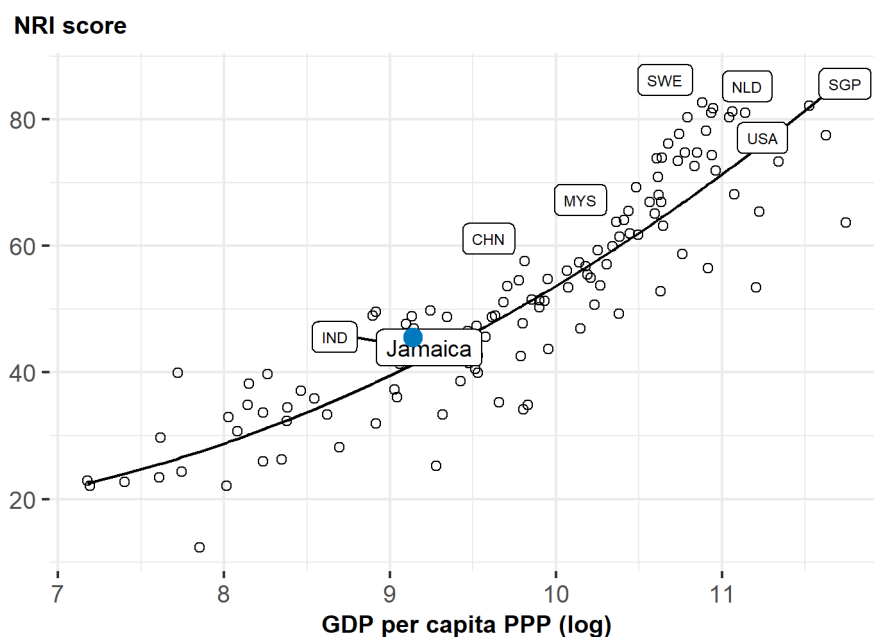
Table 1: Jamaica rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	46	Content	73
Future Technologies	51	Regulation	85
Businesses	60	Governments	88
Access	65	Trust	92
SDG Contribution	66	Individuals	94
Inclusion	68	Economy	95

NRI score and income

Figure 3 shows the position of Jamaica 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, Jamaica 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Jamaica belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Jamaica is ranked 25th 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 two of the four pillars: Technology and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in five of the twelve sub-pillars: Access, Future Technology, Businesses, Inclusion and Quality of Life.

The Americas

Jamaica is ranked 13th within The Americas (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Technology. With regard to sub-pillars, it outperforms the average in The Americas in three of the twelve sub-pillars: Access, Future Technology and Quality of Life.

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



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

Dimension	Jamaica	Upper-middle-income countries	The Americas
NRI	45.52	47.40	49.08
Technology	44.93	42.66	43.12
People	34.24	41.07	43.32
Governance	52.93	56.24	57.13
Impact	49.99	49.62	52.73

Strongest and weakest indicators

The indicators where Jamaica performs particularly well include Gender gap in internet use, Rural gap in use of digital payments, and Computer software spending (Table 3). By contrast, the economy's weakest indicators include Government online services, E-Participation, Legal framework's adaptability to digital business models, and High-tech exports.

Table 3: Top-ranked and bottom-ranked indicators of Jamaica

Strongest indicators	Rank	Weakest indicators	Rank
Gender gap in internet use	2	Mobile apps development	89
Rural gap in use of digital payments	8	Firms with website	89
Computer software spending	21	Secure Internet servers	91
Reading proficiency in schools	23	Cybersecurity	91
Pollution	32	Active mobile-broadband subscriptions	95
Internet access in schools	34	Social safety net protection	95
Extent of staff training	39	Legal framework's adaptability to digital business models	96
Availability of latest technologies	41	High-tech exports	96
Publication and use of open data	42	Government online services	112
Freedom to make life choices	48	E-Participation	112

NRI 2019 At-A-Glance: Jamaica

Network Readiness Index

Rank: 78 (out of 121)

Score: 45.52

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	64	44.93	C. Governance pillar	83	52.93
1st sub-pillar: Access	65	63.56	1st sub-pillar: Trust	92	41.39
2nd sub-pillar: Content	73	37.52	2nd sub-pillar: Regulation	85	56.58
3rd sub-pillar: Future Technologies	51	33.72	3rd sub-pillar: Inclusion	68	60.82
B. People pillar	87	34.24	D. Impact pillar	72	49.99
1st sub-pillar: Individuals	94	36.07	1st sub-pillar: Economy	95	9.53
2nd sub-pillar: Businesses	60	30.20	2nd sub-pillar: Quality of Life	46	67.28
3rd sub-pillar: Governments	88	36.47	3rd sub-pillar: SDG Contribution	66	73.15

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	73	59.04	3.1.1 Rule of law	72	47.95
1.1.2 Handset prices	71	42.46	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	76	49.74	3.1.3 Secure Internet servers	91	42.93
1.1.4 4G mobile network coverage	84	73.00	3.1.4 Cybersecurity	91	42.54
1.1.5 Fixed-broadband subscriptions	60	68.63	3.1.5 Online trust and safety	83	32.12
1.1.6 International Internet bandwidth	67	67.83	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	34	84.24	3.2.1 Regulatory quality	57	57.55
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	64	69.78
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	96	30.68
1.2.2 Mobile apps development	89	48.12	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	57	0.58	3.2.5 Social safety net protection	95	28.30
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	82	78.19
1.3.1 Availability of latest technologies	41	66.30	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	70	32.83	3.3.1 E-Participation	112	22.29
1.3.3 Government procurement of advanced technology products	80	33.08	3.3.2 Socioeconomic gap in use of digital payments	78	57.26
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	64	52.02
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	2	92.90
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	8	79.63
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	86	50.38	4.1.1 Medium and high-tech industry	80	23.77
2.1.2 Active mobile-broadband subscriptions	95	18.52	4.1.2 High-tech exports	96	3.99
2.1.3 Use of virtual social networks	86	39.71	4.1.3 PCT patent applications	80	0.05
2.1.4 Tertiary enrolment	85	19.37	4.1.4 Labour productivity per employee	87	10.33
2.1.5 Adult literacy rate	66	81.59	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	58	6.82	4.2.1 Happiness	56	59.00
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	48	76.90
2.2.1 Firms with website	89	23.11	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	NA	NA	4.2.4 Healthy life expectancy at birth	52	65.93
2.2.3 Professionals	72	21.78	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	84	23.81	4.3.1 Access to basic services	86	85.46
2.2.5 Extent of staff training	39	52.11	4.3.2 Pollution	32	91.51
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	56	65.94
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	23	87.07
2.3.1 Government online services	112	24.61	4.3.5 Maths proficiency in schools	69	12.23
2.3.2 Publication and use of open data	42	36.95	4.3.6 Use of clean fuels and technology	69	96.67
2.3.3 ICT use and government efficiency	53	47.83			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

Sources

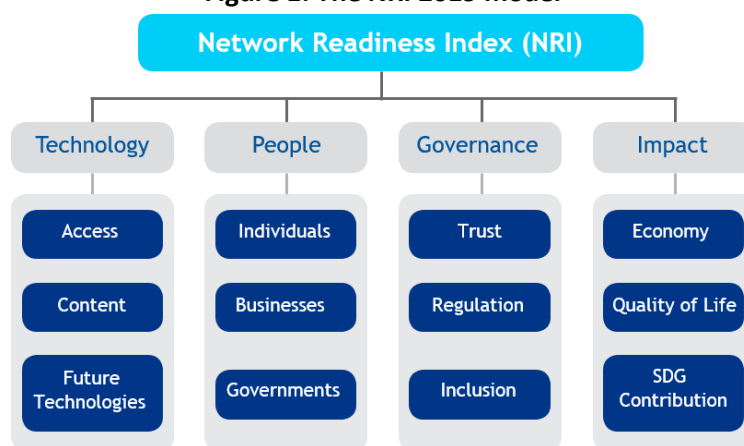
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Network Readiness Index 2019

Japan

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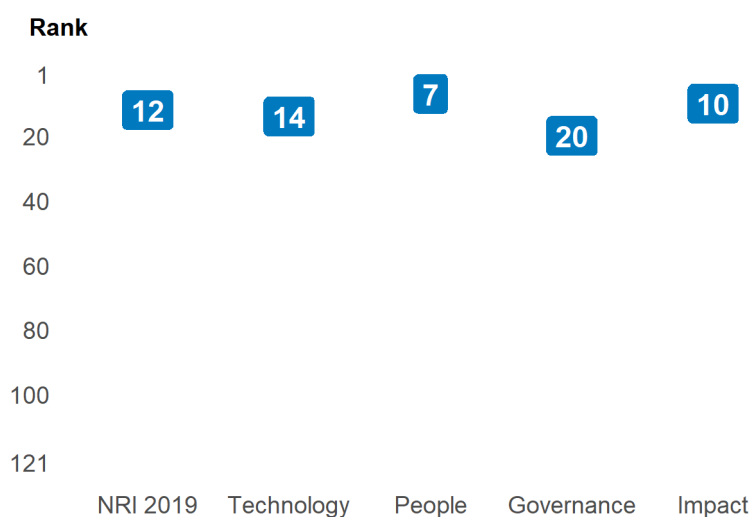
Figure 1: The NRI 2019 model



Global NRI position of Japan

Japan ranks 12th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Japan global ranking, overall and by pillar



Performance at sub-pillar level

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

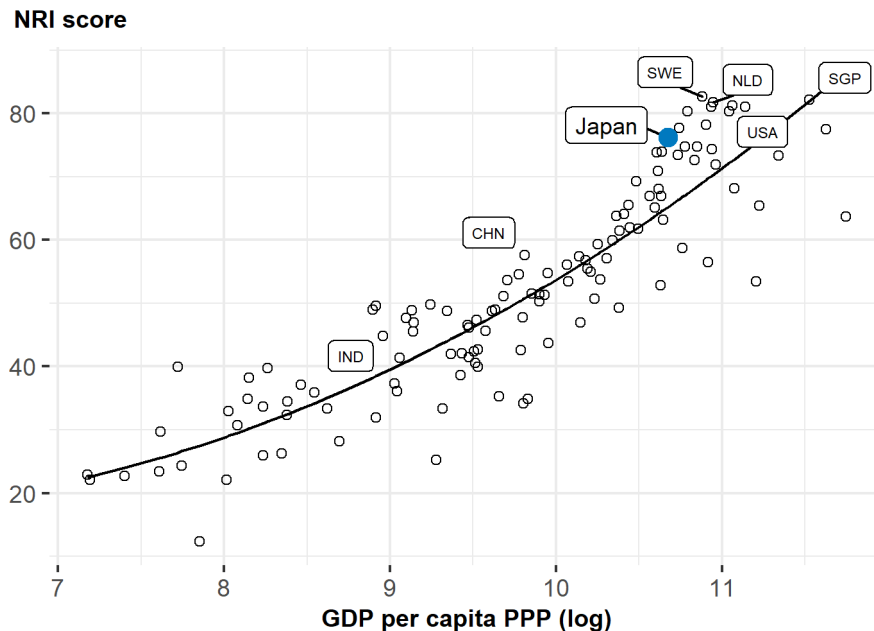
Table 1: Japan rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	4	Trust	15
Economy	4	Governments	18
Future Technologies	5	Content	27
SDG Contribution	5	Quality of Life	31
Individuals	8	Access	35
Inclusion	12	Regulation	38

NRI score and income

Figure 3 shows the position of Japan 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, Japan 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Japan belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

High-income countries

Japan is ranked 12th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in nine of the twelve sub-pillars: Content, Future Technology, Individuals, Businesses, Governments, Trust, Inclusion, Economy and SDG Contribution.

Asia & Pacific

Japan is ranked 2nd within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

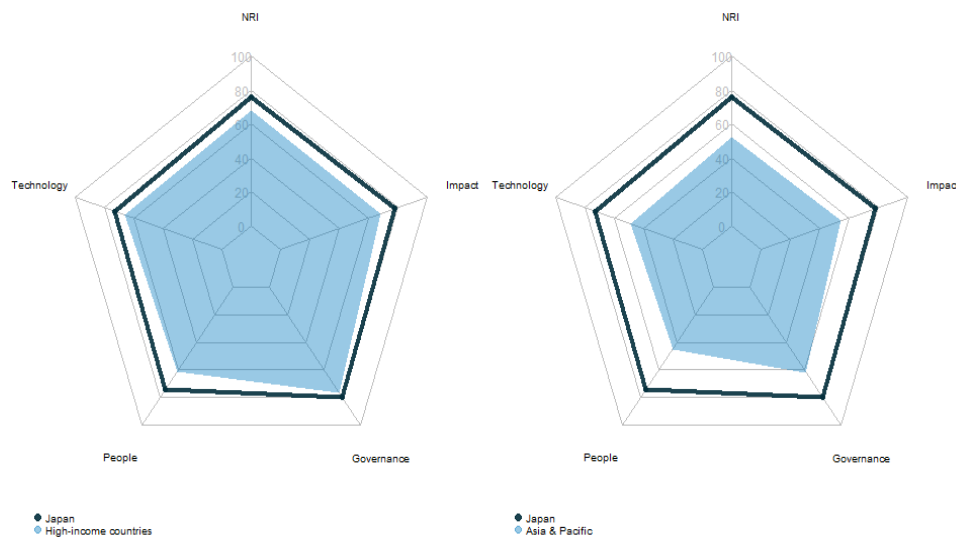


Table 2: Japan scores vs. averages of its income group and region, overall and by pillar

Dimension	Japan	High-income countries	Asia & Pacific
NRI	76.17	68.12	52.44
Technology	72.87	66.07	48.56
People	74.24	61.07	44.85
Governance	80.05	77.07	61.84
Impact	77.54	68.29	54.50

Strongest and weakest indicators

The indicators where Japan performs particularly well include Technicians and associate professionals, PCT patent applications, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include ICT regulatory environment, International Internet bandwidth, and Mobile tariffs.

Table 3: Top-ranked and bottom-ranked indicators of Japan

Strongest indicators	Rank	Weakest indicators	Rank
Technicians and associate professionals	1	Rural gap in use of digital payments	45
PCT patent applications	1	Use of virtual social networks	47
Use of clean fuels and technology	1	Gender gap in internet use	56
Active mobile-broadband subscriptions	2	Happiness	62
Software piracy rate	2	Online trust and safety	63
Healthy life expectancy at birth	2	E-commerce legislation	66
Internet access	3	Freedom to make life choices	80
R&D expenditure by businesses	3	Mobile tariffs	81
Maths proficiency in schools	3	International Internet bandwidth	82
Intellectual property receipts	4	ICT regulatory environment	90

NRI 2019 At-A-Glance: Japan

Network Readiness Index

Rank: 12 (out of 121)

Score: 76.17

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	14	72.87	C. Governance pillar	20	80.05
1st sub-pillar: Access	35	79.58	1st sub-pillar: Trust	15	82.76
2nd sub-pillar: Content	27	66.79	2nd sub-pillar: Regulation	38	74.75
3rd sub-pillar: Future Technologies	5	72.23	3rd sub-pillar: Inclusion	12	82.64
B. People pillar	7	74.24	D. Impact pillar	10	77.54
1st sub-pillar: Individuals	8	72.90	1st sub-pillar: Economy	4	63.03
2nd sub-pillar: Businesses	4	78.69	2nd sub-pillar: Quality of Life	31	72.47
3rd sub-pillar: Governments	18	71.14	3rd sub-pillar: SDG Contribution	5	97.12

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	81	53.59	3.1.1 Rule of law	17	88.32
1.1.2 Handset prices	13	71.50	3.1.2 Software piracy rate	2	98.65
1.1.3 Internet access	3	98.43	3.1.3 Secure Internet servers	36	79.90
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	15	94.41
1.1.5 Fixed-broadband subscriptions	32	91.19	3.1.5 Online trust and safety	63	52.51
1.1.6 International Internet bandwidth	82	63.79	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	22	80.69
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	28	84.49
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	34	57.30
1.2.2 Mobile apps development	31	78.28	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	4	53.61	3.2.5 Social safety net protection	18	79.77
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	90	71.24
1.3.1 Availability of latest technologies	11	91.13	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	9	78.30	3.3.1 E-Participation	5	98.08
1.3.3 Government procurement of advanced technology products	22	59.11	3.3.2 Socioeconomic gap in use of digital payments	14	95.69
1.3.4 ICT PCT patent applications	6	80.79	3.3.3 Availability of local online content	10	88.78
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	56	58.93
1.3.6 Robot density	4	96.78	3.3.5 Rural gap in use of digital payments	45	71.73
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	27	83.23	4.1.1 Medium and high-tech industry	6	71.85
2.1.2 Active mobile-broadband subscriptions	2	74.96	4.1.2 High-tech exports	24	32.72
2.1.3 Use of virtual social networks	47	60.50	4.1.3 PCT patent applications	1	100.00
2.1.4 Tertiary enrolment	NA	NA	4.1.4 Labour productivity per employee	28	47.55
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	62	56.99
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	80	56.70
2.2.1 Firms with website	6	92.28	4.2.3 Income inequality	28	81.32
2.2.2 Internet shopping	26	58.85	4.2.4 Healthy life expectancy at birth	2	94.87
2.2.3 Professionals	NA	NA	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	1	100.00	4.3.1 Access to basic services	25	99.28
2.2.5 Extent of staff training	11	78.21	4.3.2 Pollution	21	93.55
2.2.6 R&D expenditure by businesses	3	64.09	4.3.3 Road safety	8	95.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	9	94.62	4.3.5 Maths proficiency in schools	3	97.17
2.3.2 Publication and use of open data	8	75.16	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	39	57.17			
2.3.4 R&D expenditure by governments and higher education	21	57.60			

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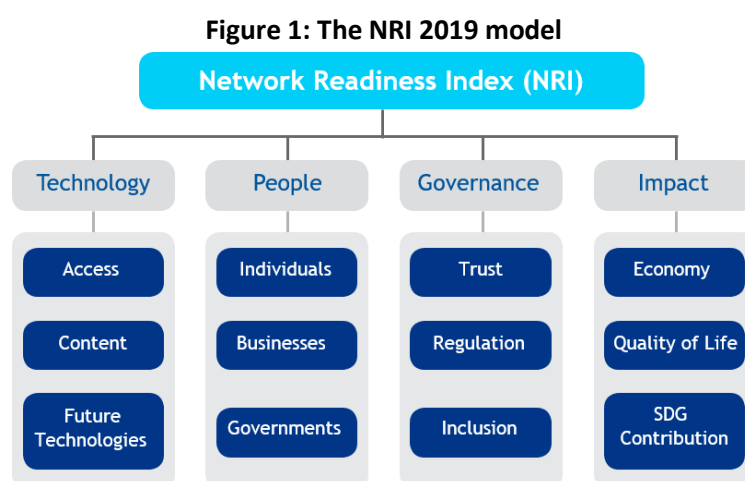
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Network Readiness Index 2019

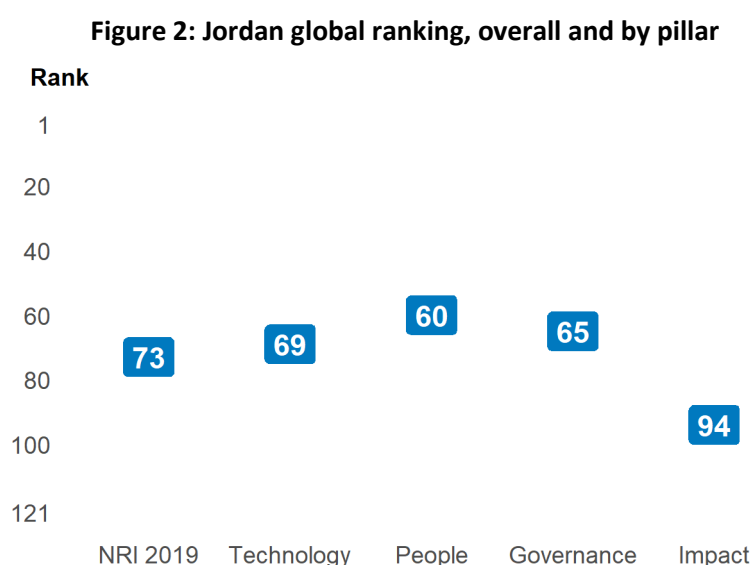
Jordan

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Jordan

Jordan ranks 73rd out of the 121 economies included in the NRI 2019 (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 Jordan relate to Individuals, Future Technologies and Inclusion, among others (Table 1). More could be done, though, to improve the economy's performances in the Quality of Life, Governments and SDG Contribution sub-pillars.

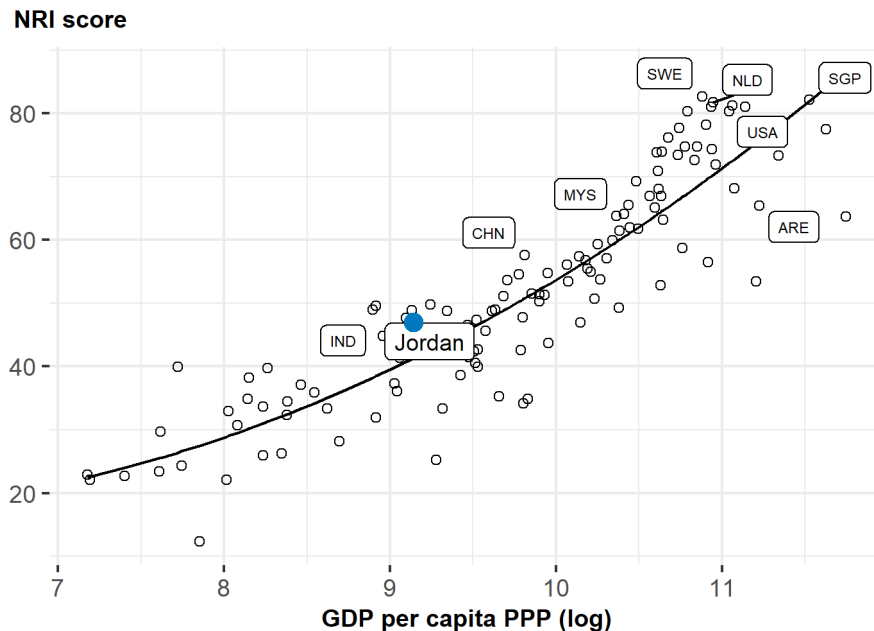
Table 1: Jordan rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	33	Regulation	77
Future Technologies	43	Economy	78
Inclusion	54	Access	80
Businesses	65	Quality of Life	80
Trust	69	Governments	85
Content	70	SDG Contribution	96

NRI score and income

Figure 3 shows the position of Jordan 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, Jordan 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Jordan belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

Upper-middle-income countries

Jordan is ranked 22nd 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 three of the four pillars: Technology, People and Governance. At the sub-pillar level, it outperforms upper-middle-income countries in seven of the twelve sub-pillars: Future Technology, Individuals, Businesses, Trust, Regulation, Inclusion and Quality of Life.

Arab States

Jordan is ranked 7th within Arab States (Figure 4, right panel). It has a score above the regional average in two of the four pillars: Score, People and Governance. With regard to sub-pillars, it outperforms the average in Arab States in seven of the twelve sub-pillars: Content, Future Technology, Individuals, Businesses, Trust, Regulation and Inclusion.

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

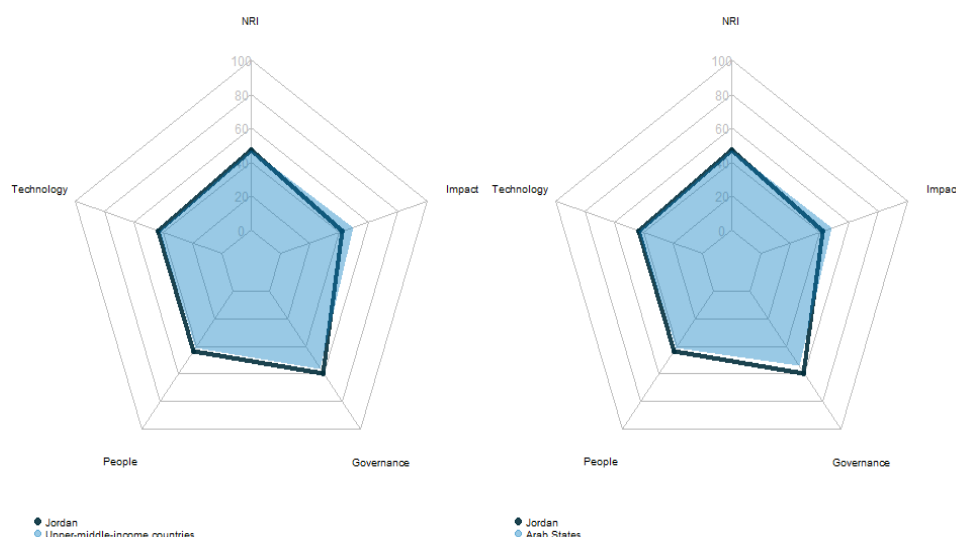


Table 2: Jordan scores vs. averages of its income group and region, overall and by pillar

Dimension	Jordan	Upper-middle-income countries	Arab States
NRI	46.97	47.40	46.82
Technology	43.14	42.66	43.54
People	43.49	41.07	41.30
Governance	59.53	56.24	54.28
Impact	41.70	49.62	48.18

Strongest and weakest indicators

The indicators where Jordan performs particularly well include ICT skills, Rural gap in use of digital payments, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Happiness, Mobile tariffs, and High-tech exports.

Table 3: Top-ranked and bottom-ranked indicators of Jordan

Strongest indicators	Rank	Weakest indicators	Rank
ICT skills	1	Handset prices	87
Rural gap in use of digital payments	1	Pollution	95
Use of clean fuels and technology	1	Secure Internet servers	97
Adult literacy rate	28	Government online services	100
Computer software spending	30	E-commerce legislation	100
Availability of local online content	34	E-Participation	100
Availability of latest technologies	37	Road safety	100
ICT use and government efficiency	37	High-tech exports	101
Internet access	39	Mobile tariffs	103
Intellectual property receipts	39	Happiness	104

NRI 2019 At-A-Glance: Jordan

Network Readiness Index

Rank: 73 (out of 121)

Score: 46.97

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	69	43.14	C. Governance pillar	65	59.53
1st sub-pillar: Access	80	52.78	1st sub-pillar: Trust	69	53.08
2nd sub-pillar: Content	70	39.23	2nd sub-pillar: Regulation	77	59.68
3rd sub-pillar: Future Technologies	43	37.40	3rd sub-pillar: Inclusion	54	65.84
B. People pillar	60	43.49	D. Impact pillar	94	41.70
1st sub-pillar: Individuals	33	62.71	1st sub-pillar: Economy	78	15.31
2nd sub-pillar: Businesses	65	29.65	2nd sub-pillar: Quality of Life	80	57.07
3rd sub-pillar: Governments	85	38.11	3rd sub-pillar: SDG Contribution	96	52.72

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	103	36.63	3.1.1 Rule of law	51	58.67
1.1.2 Handset prices	87	36.15	3.1.2 Software piracy rate	48	45.95
1.1.3 Internet access	39	81.73	3.1.3 Secure Internet servers	97	39.50
1.1.4 4G mobile network coverage	66	90.00	3.1.4 Cybersecurity	75	58.88
1.1.5 Fixed-broadband subscriptions	75	44.83	3.1.5 Online trust and safety	51	62.40
1.1.6 International Internet bandwidth	69	67.72	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	57	12.39	3.2.1 Regulatory quality	64	53.25
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	68	68.53
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	41	53.03
1.2.2 Mobile apps development	65	59.51	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	39	1.06	3.2.5 Social safety net protection	51	48.16
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	63	85.14
1.3.1 Availability of latest technologies	37	68.30	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	46	44.91	3.3.1 E-Participation	100	41.39
1.3.3 Government procurement of advanced technology products	47	45.90	3.3.2 Socioeconomic gap in use of digital payments	81	54.62
1.3.4 ICT PCT patent applications	76	0.63	3.3.3 Availability of local online content	34	67.34
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	1	100.00
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	68	63.43	4.1.1 Medium and high-tech industry	57	33.44
2.1.2 Active mobile-broadband subscriptions	48	33.45	4.1.2 High-tech exports	101	3.43
2.1.3 Use of virtual social networks	54	57.38	4.1.3 PCT patent applications	73	0.12
2.1.4 Tertiary enrolment	78	24.74	4.1.4 Labour productivity per employee	62	24.24
2.1.5 Adult literacy rate	28	97.29	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	1	100.00	4.2.1 Happiness	104	32.94
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	86	54.14
2.2.1 Firms with website	74	34.53	4.2.3 Income inequality	41	77.11
2.2.2 Internet shopping	77	9.08	4.2.4 Healthy life expectancy at birth	60	64.10
2.2.3 Professionals	NA	NA	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	NA	NA	4.3.1 Access to basic services	43	97.54
2.2.5 Extent of staff training	55	45.34	4.3.2 Pollution	95	70.25
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	100	32.19
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	72	2.04
2.3.1 Government online services	100	43.85	4.3.5 Maths proficiency in schools	65	14.32
2.3.2 Publication and use of open data	83	12.58	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	37	57.90			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

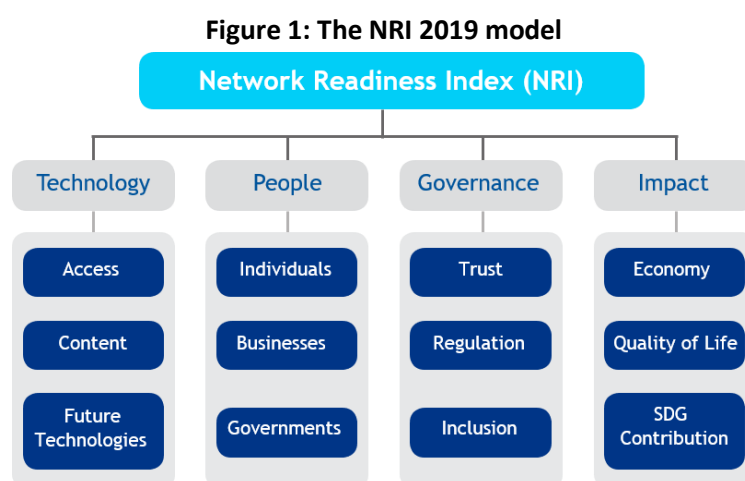
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Network Readiness Index 2019

Kazakhstan

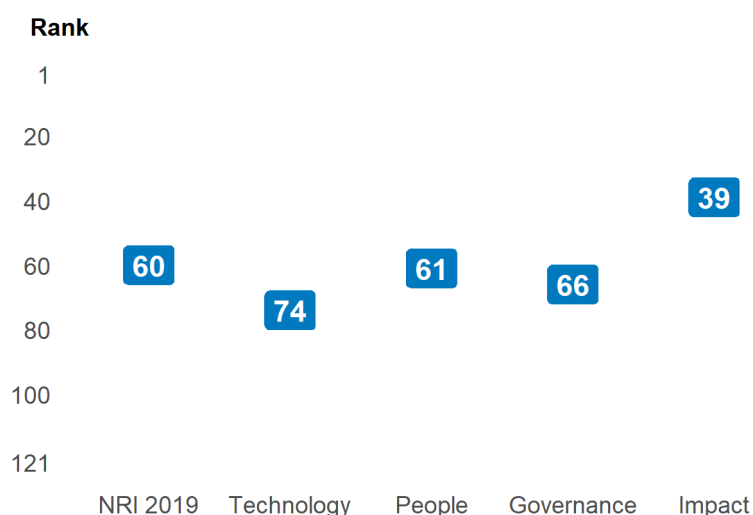
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Kazakhstan

Kazakhstan ranks 60th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Kazakhstan global ranking, overall and by pillar



Performance at sub-pillar level

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

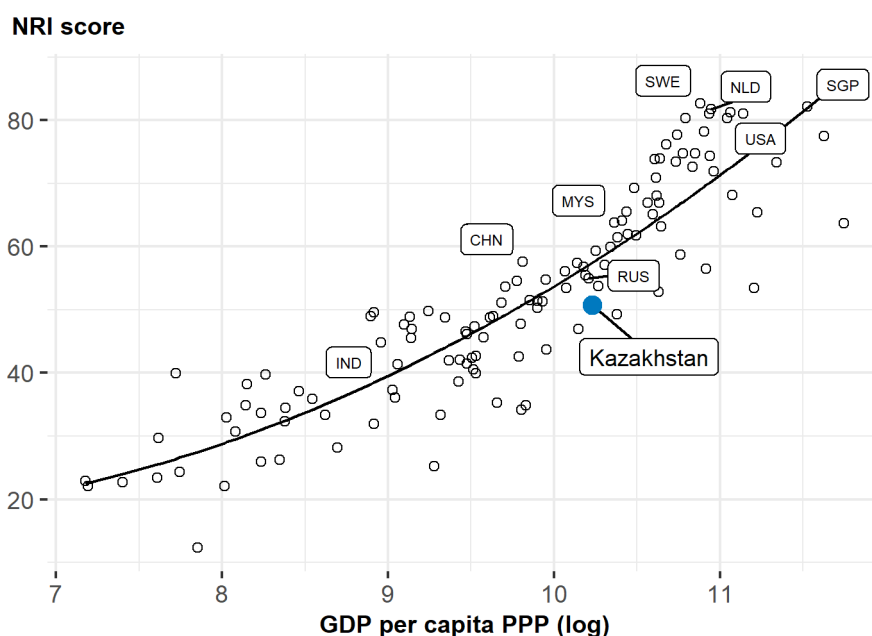
Table 1: Kazakhstan rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	36	Governments	61
SDG Contribution	45	Regulation	76
Inclusion	51	Trust	79
Access	52	Individuals	81
Businesses	55	Content	87
Economy	55	Future Technologies	98

NRI score and income

Figure 3 shows the position of Kazakhstan 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, Kazakhstan 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Kazakhstan belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—CIS—is Russia (RUS).

Performance against its income group and region

Upper-middle-income countries

Kazakhstan is ranked 14th 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 three of the four pillars: Score, People, Governance and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in eight of the twelve sub-pillars: Access, Businesses, Governments, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

CIS

Kazakhstan is ranked 2nd within CIS (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in CIS in nine of the twelve sub-pillars: Access, Individuals, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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



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

Dimension	Kazakhstan	Upper-middle-income countries	CIS
NRI	50.68	47.40	46.89
Technology	41.77	42.66	40.39
People	42.33	41.07	40.30
Governance	58.84	56.24	53.69
Impact	59.79	49.62	53.16

Strongest and weakest indicators

The indicators where Kazakhstan performs particularly well include Use of clean fuels and technology, Mobile tariffs, and Adult literacy rate (Table 3). By contrast, the economy's weakest indicators include ICT regulatory environment, R&D expenditure by governments and higher education, and Computer software spending.

Table 3: Top-ranked and bottom-ranked indicators of Kazakhstan

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Digital participation and content creation	87
Mobile tariffs	5	Medium and high-tech industry	89
Adult literacy rate	7	Healthy life expectancy at birth	89
Income inequality	9	Rule of law	90
High-tech exports	16	Intellectual property receipts	91
Pollution	20	Use of virtual social networks	92
Ease of doing business	24	Availability of latest technologies	96
Internet access	25	Computer software spending	97
ICT use and government efficiency	26	R&D expenditure by governments and higher education	100
Government online services	32	ICT regulatory environment	112

NRI 2019 At-A-Glance: Kazakhstan

Network Readiness Index

Rank: 60 (out of 121)

Score: 50.68

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	74	41.77	C. Governance pillar	66	58.84
1st sub-pillar: Access	52	72.46	1st sub-pillar: Trust	79	49.34
2nd sub-pillar: Content	87	31.03	2nd sub-pillar: Regulation	76	60.01
3rd sub-pillar: Future Technologies	98	21.83	3rd sub-pillar: Inclusion	51	67.17
B. People pillar	61	42.33	D. Impact pillar	39	59.79
1st sub-pillar: Individuals	81	50.64	1st sub-pillar: Economy	55	23.63
2nd sub-pillar: Businesses	55	30.76	2nd sub-pillar: Quality of Life	36	70.04
3rd sub-pillar: Governments	61	45.59	3rd sub-pillar: SDG Contribution	45	85.71

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	5	96.57	3.1.1 Rule of law	90	43.49
1.1.2 Handset prices	45	55.88	3.1.2 Software piracy rate	74	20.27
1.1.3 Internet access	25	86.76	3.1.3 Secure Internet servers	60	61.65
1.1.4 4G mobile network coverage	82	75.30	3.1.4 Cybersecurity	42	83.22
1.1.5 Fixed-broadband subscriptions	70	51.83	3.1.5 Online trust and safety	80	38.05
1.1.6 International Internet bandwidth	61	68.40	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	61	54.51
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	24	87.25
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	43	52.42
1.2.2 Mobile apps development	73	54.20	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	91	0.01	3.2.5 Social safety net protection	67	41.09
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	112	49.81
1.3.1 Availability of latest technologies	96	36.37	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	74	31.71	3.3.1 E-Participation	42	81.53
1.3.3 Government procurement of advanced technology products	65	40.08	3.3.2 Socioeconomic gap in use of digital payments	62	68.23
1.3.4 ICT PCT patent applications	75	1.01	3.3.3 Availability of local online content	69	50.80
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	38	62.14
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	42	73.16
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	45	76.91	4.1.1 Medium and high-tech industry	89	17.90
2.1.2 Active mobile-broadband subscriptions	62	29.33	4.1.2 High-tech exports	16	42.13
2.1.3 Use of virtual social networks	92	37.63	4.1.3 PCT patent applications	68	0.32
2.1.4 Tertiary enrolment	54	39.16	4.1.4 Labour productivity per employee	51	34.16
2.1.5 Adult literacy rate	7	99.70	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	50	21.11	4.2.1 Happiness	50	61.45
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	55	72.15
2.2.1 Firms with website	76	32.84	4.2.3 Income inequality	9	93.42
2.2.2 Internet shopping	60	18.79	4.2.4 Healthy life expectancy at birth	89	53.11
2.2.3 Professionals	34	43.68	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	39	52.10	4.3.1 Access to basic services	51	95.71
2.2.5 Extent of staff training	69	35.73	4.3.2 Pollution	20	93.70
2.2.6 R&D expenditure by businesses	70	1.40	4.3.3 Road safety	76	53.44
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	32	85.39	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	60	26.10	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	26	66.13			
2.3.4 R&D expenditure by governments and higher education	100	4.74			

* Confidential data

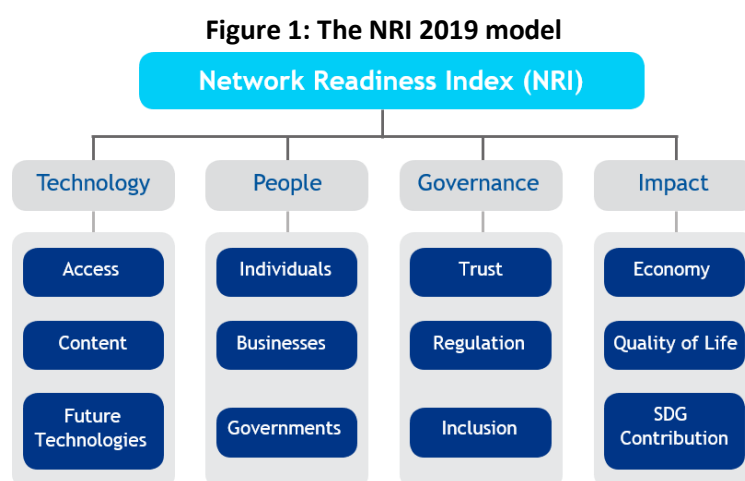
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Network Readiness Index 2019

Kenya

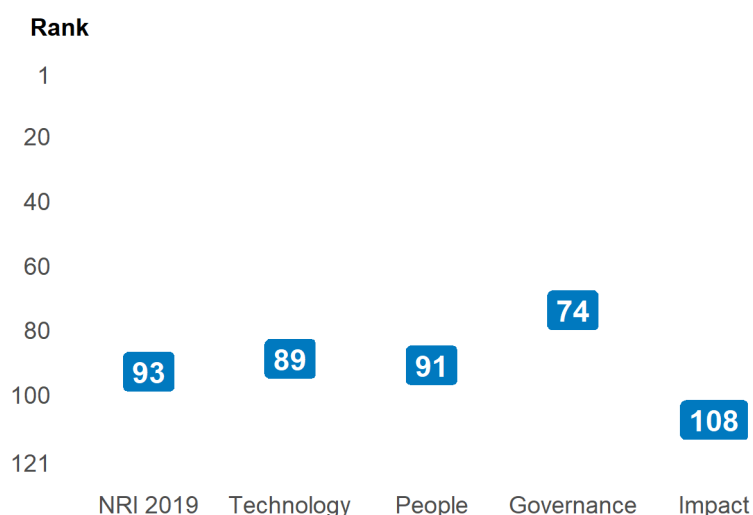
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Global NRI position of Kenya

Kenya ranks 93rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Kenya global ranking, overall and by pillar



Performance at sub-pillar level

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

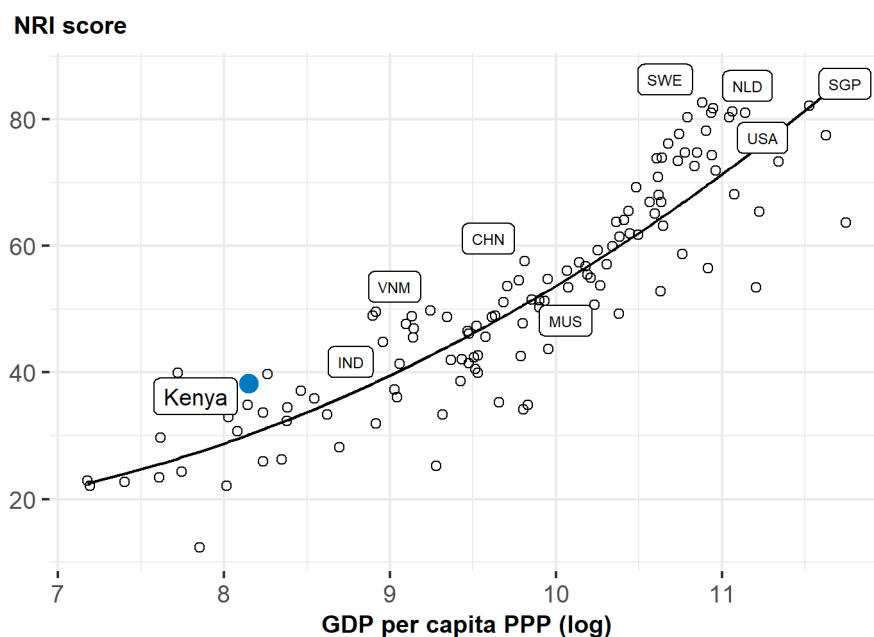
Table 1: Kenya rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	39	Content	97
Governments	48	Quality of Life	98
Regulation	60	Access	99
Inclusion	72	Individuals	106
Businesses	79	Economy	110
Trust	86	SDG Contribution	112

NRI score and income

Figure 3 shows the position of Kenya 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, Kenya 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Kenya belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries

Kenya is ranked 12th 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 three of the four pillars: Score, Technology, People and Governance. At the sub-pillar level, it outperforms lower-middle-income countries in six of the twelve sub-pillars: Future Technology, Businesses, Governments, Trust, Regulation and Inclusion.

Africa

Kenya is ranked 4th within Africa (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Africa in nine of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion and Quality of Life.

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

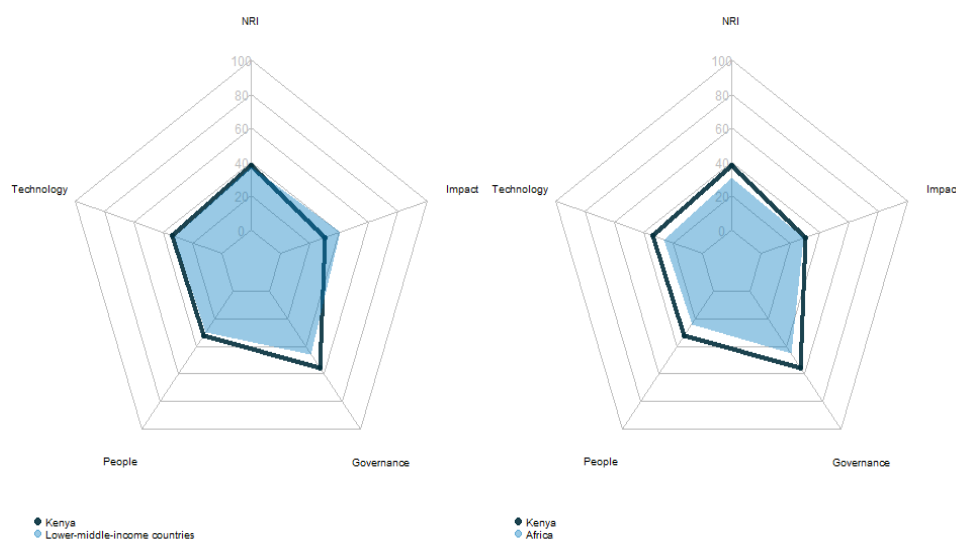


Table 2: Kenya scores vs. averages of its income group and region, overall and by pillar

Dimension	Kenya	Lower-middle-income countries	Africa
NRI	38.19	37.18	31.07
Technology	34.02	32.15	26.03
People	32.50	30.04	23.76
Governance	55.89	46.17	45.32
Impact	30.37	40.35	29.15

Strongest and weakest indicators

The indicators where Kenya performs particularly well include International Internet bandwidth, Government procurement of advanced technology products, and Intellectual property receipts (Table 3). By contrast, the economy's weakest indicators include Access to basic services, Internet users, and Fixed-broadband subscriptions.

Table 3: Top-ranked and bottom-ranked indicators of Kenya

Strongest indicators	Rank	Weakest indicators	Rank
International Internet bandwidth	6	Tertiary enrolment	101
Government procurement of advanced technology products	20	Active mobile-broadband subscriptions	102
Intellectual property receipts	22	Happiness	102
ICT use and government efficiency	23	4G mobile network coverage	106
Rural gap in use of digital payments	26	Use of virtual social networks	106
Company investment in emerging technology	32	Road safety	107
Legal framework's adaptability to digital business models	32	Use of clean fuels and technology	109
Publication and use of open data	35	Fixed-broadband subscriptions	113
Extent of staff training	42	Internet users	114
ICT regulatory environment	43	Access to basic services	115

NRI 2019 At-A-Glance: Kenya

Network Readiness Index

Rank: 93 (out of 121)

Score: 38.19

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	89	34.02	C. Governance pillar	74	55.89
1st sub-pillar: Access	99	37.90	1st sub-pillar: Trust	86	43.64
2nd sub-pillar: Content	97	24.52	2nd sub-pillar: Regulation	60	64.47
3rd sub-pillar: Future Technologies	39	39.64	3rd sub-pillar: Inclusion	72	59.55
B. People pillar	91	32.50	D. Impact pillar	108	30.37
1st sub-pillar: Individuals	106	23.33	1st sub-pillar: Economy	110	7.38
2nd sub-pillar: Businesses	79	25.47	2nd sub-pillar: Quality of Life	98	49.04
3rd sub-pillar: Governments	48	48.72	3rd sub-pillar: SDG Contribution	112	34.69

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	92	49.30	3.1.1 Rule of law	86	43.96
1.1.2 Handset prices	92	33.14	3.1.2 Software piracy rate	74	20.27
1.1.3 Internet access	89	29.21	3.1.3 Secure Internet servers	83	45.89
1.1.4 4G mobile network coverage	106	35.00	3.1.4 Cybersecurity	45	79.93
1.1.5 Fixed-broadband subscriptions	113	0.00	3.1.5 Online trust and safety	85	28.16
1.1.6 International Internet bandwidth	6	80.72	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	86	46.42
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	53	76.03
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	32	59.21
1.2.2 Mobile apps development	99	38.55	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	22	4.02	3.2.5 Social safety net protection	66	41.55
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	43	88.61
1.3.1 Availability of latest technologies	47	61.27	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	32	56.74	3.3.1 E-Participation	96	47.13
1.3.3 Government procurement of advanced technology products	20	60.93	3.3.2 Socioeconomic gap in use of digital payments	55	71.74
1.3.4 ICT PCT patent applications	73	1.09	3.3.3 Availability of local online content	76	43.78
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	26	75.56
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	114	8.93	4.1.1 Medium and high-tech industry	88	18.97
2.1.2 Active mobile-broadband subscriptions	102	14.72	4.1.2 High-tech exports	86	6.85
2.1.3 Use of virtual social networks	106	13.72	4.1.3 PCT patent applications	81	0.04
2.1.4 Tertiary enrolment	101	7.84	4.1.4 Labour productivity per employee	98	3.64
2.1.5 Adult literacy rate	73	71.41	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	102	33.29
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	64	67.81
2.2.1 Firms with website	71	37.26	4.2.3 Income inequality	76	58.42
2.2.2 Internet shopping	69	11.83	4.2.4 Healthy life expectancy at birth	100	36.63
2.2.3 Professionals	NA	NA	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	NA	NA	4.3.1 Access to basic services	115	26.11
2.2.5 Extent of staff training	42	51.06	4.3.2 Pollution	85	77.29
2.2.6 R&D expenditure by businesses	66	1.72	4.3.3 Road safety	107	21.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	60	37.78
2.3.1 Government online services	87	58.46	4.3.5 Maths proficiency in schools	52	35.38
2.3.2 Publication and use of open data	35	40.42	4.3.6 Use of clean fuels and technology	109	10.00
2.3.3 ICT use and government efficiency	23	67.71			
2.3.4 R&D expenditure by governments and higher education	56	28.28			

* Confidential data

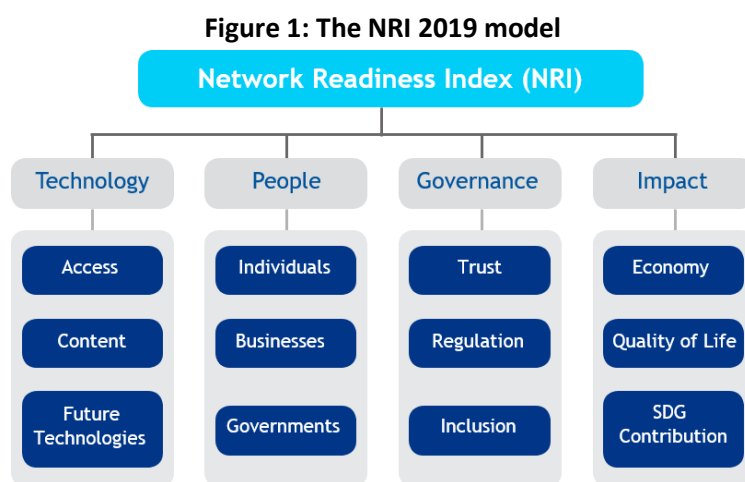
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Network Readiness Index 2019

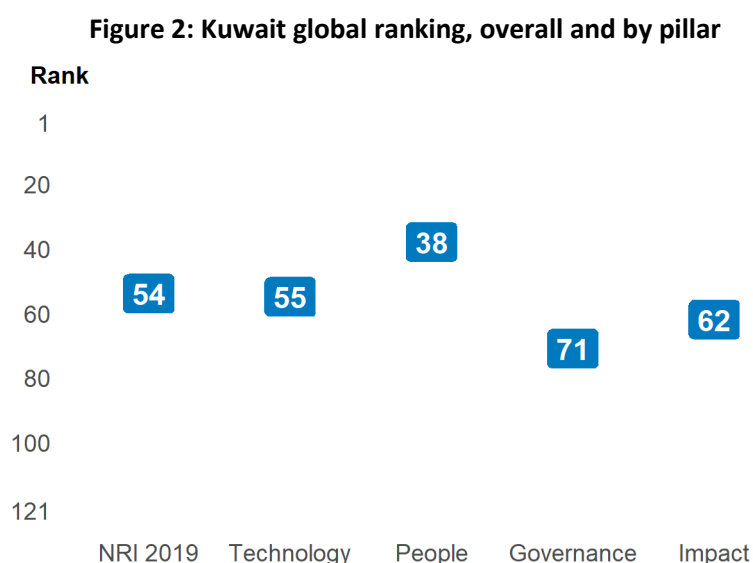
Kuwait

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Kuwait

Kuwait ranks 54th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

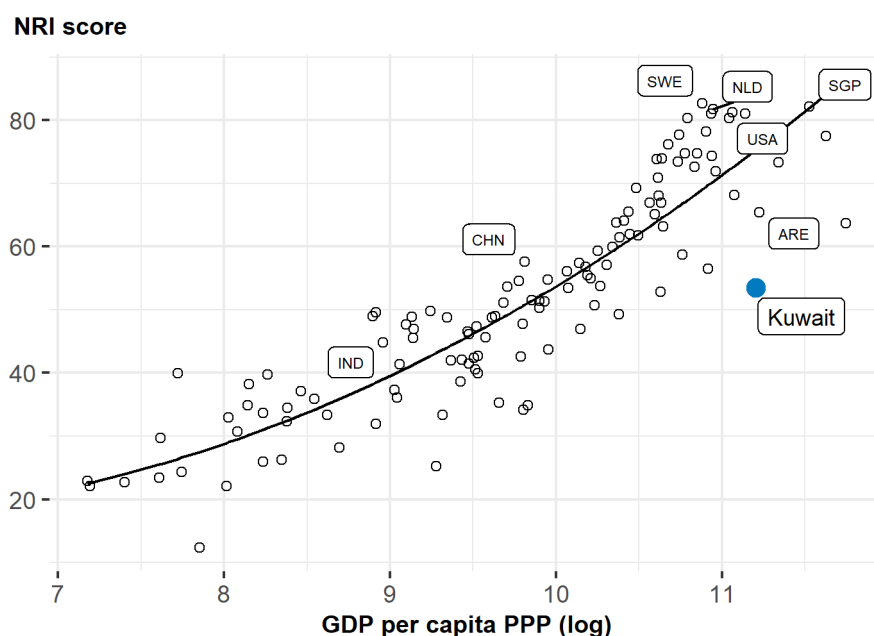
Table 1: Kuwait rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	3	Businesses	59
Access	34	Content	68
Economy	37	Future Technologies	74
Quality of Life	37	Regulation	80
Governments	38	Inclusion	82
Trust	57	SDG Contribution	89

NRI score and income

Figure 3 shows the position of Kuwait 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, Kuwait 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Kuwait belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

High-income countries

Kuwait is ranked 45th 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 outperforms high-income countries in one of the twelve sub-pillars: Individuals.

Arab States

Kuwait is ranked 5th within Arab States (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Arab States in ten of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and Quality of Life.

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

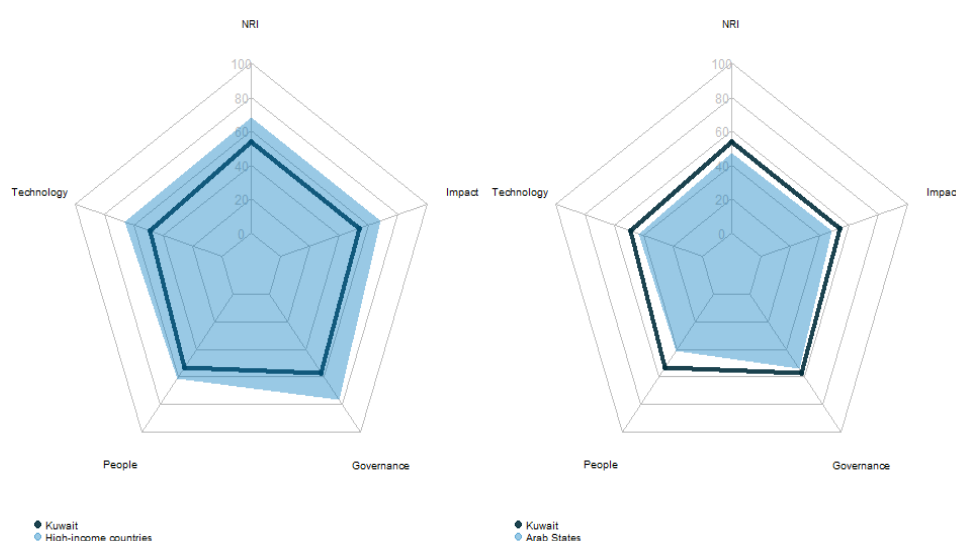


Table 2: Kuwait scores vs. averages of its income group and region, overall and by pillar

Dimension	Kuwait	High-income countries	Arab States
NRI	53.39	68.12	46.82
Technology	49.19	66.07	43.54
People	53.58	61.07	41.30
Governance	57.26	77.07	54.28
Impact	53.54	68.29	48.18

Strongest and weakest indicators

The indicators where Kuwait performs particularly well include Internet access, 4G mobile network coverage, and Access to basic services (Table 3). By contrast, the economy's weakest indicators include Rural gap in use of digital payments, Pollution, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of Kuwait

Strongest indicators	Rank	Weakest indicators	Rank
Internet access	1	Government procurement of advanced technology products	73
4G mobile network coverage	1	Digital participation and content creation	75
Access to basic services	1	Ease of doing business	76
Use of clean fuels and technology	1	Road safety	76
Internet users	2	ICT PCT patent applications	80
Use of virtual social networks	3	High-tech exports	81
Labour productivity per employee	8	Legal framework's adaptability to digital business models	91
Active mobile-broadband subscriptions	11	ICT regulatory environment	106
Gender gap in internet use	17	Pollution	112
Handset prices	18	Rural gap in use of digital payments	116

NRI 2019 At-A-Glance: Kuwait

Network Readiness Index

Rank: 54 (out of 121)

Score: 53.39

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	55	49.19	C. Governance pillar	71	57.26
1st sub-pillar: Access	34	79.82	1st sub-pillar: Trust	57	58.12
2nd sub-pillar: Content	68	39.85	2nd sub-pillar: Regulation	80	58.27
3rd sub-pillar: Future Technologies	74	27.89	3rd sub-pillar: Inclusion	82	55.39
B. People pillar	38	53.58	D. Impact pillar	62	53.54
1st sub-pillar: Individuals	3	75.44	1st sub-pillar: Economy	37	30.25
2nd sub-pillar: Businesses	59	30.41	2nd sub-pillar: Quality of Life	37	69.78
3rd sub-pillar: Governments	38	54.89	3rd sub-pillar: SDG Contribution	89	60.61

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	45	70.35	3.1.1 Rule of law	52	58.14
1.1.2 Handset prices	18	69.57	3.1.2 Software piracy rate	52	43.24
1.1.3 Internet access	1	100.00	3.1.3 Secure Internet servers	70	51.36
1.1.4 4G mobile network coverage	1	100.00	3.1.4 Cybersecurity	68	63.71
1.1.5 Fixed-broadband subscriptions	62	67.67	3.1.5 Online trust and safety	27	74.12
1.1.6 International Internet bandwidth	39	71.33	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	69	50.63
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	76	65.75
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	91	31.84
1.2.2 Mobile apps development	52	65.90	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	31	66.17
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	106	60.23
1.3.1 Availability of latest technologies	53	56.83	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	56	37.71	3.3.1 E-Participation	69	64.97
1.3.3 Government procurement of advanced technology products	73	36.41	3.3.2 Socioeconomic gap in use of digital payments	46	78.29
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	50	58.94
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	17	67.24
1.3.6 Robot density	68	0.04	3.3.5 Rural gap in use of digital payments	116	7.53
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	2	99.94	4.1.1 Medium and high-tech industry	51	37.25
2.1.2 Active mobile-broadband subscriptions	11	51.17	4.1.2 High-tech exports	81	7.80
2.1.3 Use of virtual social networks	3	92.72	4.1.3 PCT patent applications	63	0.45
2.1.4 Tertiary enrolment	53	39.43	4.1.4 Labour productivity per employee	8	75.49
2.1.5 Adult literacy rate	42	93.93	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	46	63.25
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	34	82.34
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	51	25.89	4.2.4 Healthy life expectancy at birth	62	63.74
2.2.3 Professionals	64	25.94	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	67	32.13	4.3.1 Access to basic services	1	100.00
2.2.5 Extent of staff training	63	37.69	4.3.2 Pollution	112	41.94
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	76	53.44
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	50	58.42
2.3.1 Government online services	48	76.93	4.3.5 Maths proficiency in schools	70	9.86
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	49	32.85			

* Confidential data

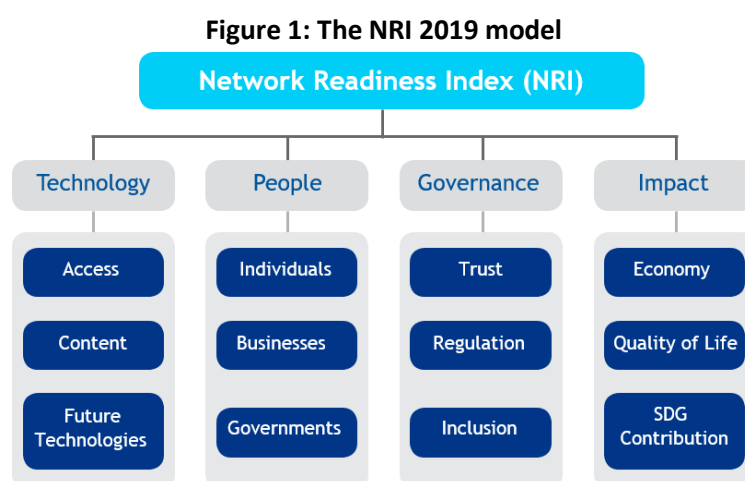
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Network Readiness Index 2019

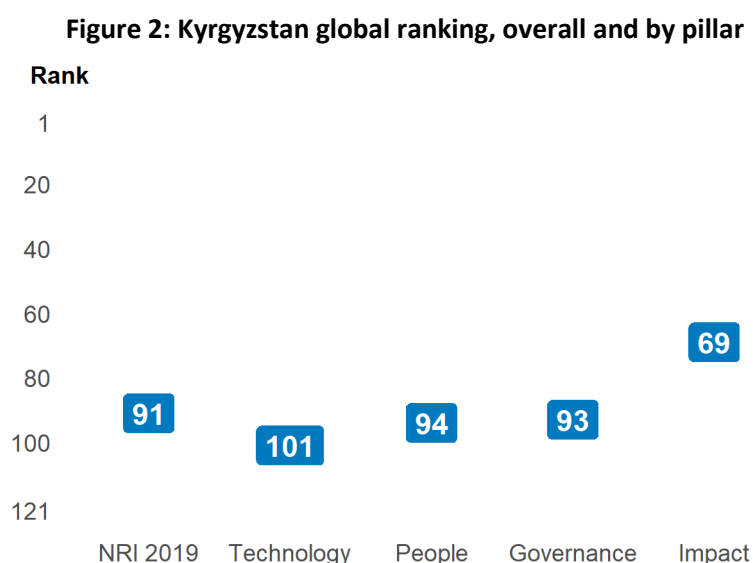
Kyrgyzstan

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Kyrgyzstan

Kyrgyzstan ranks 91st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

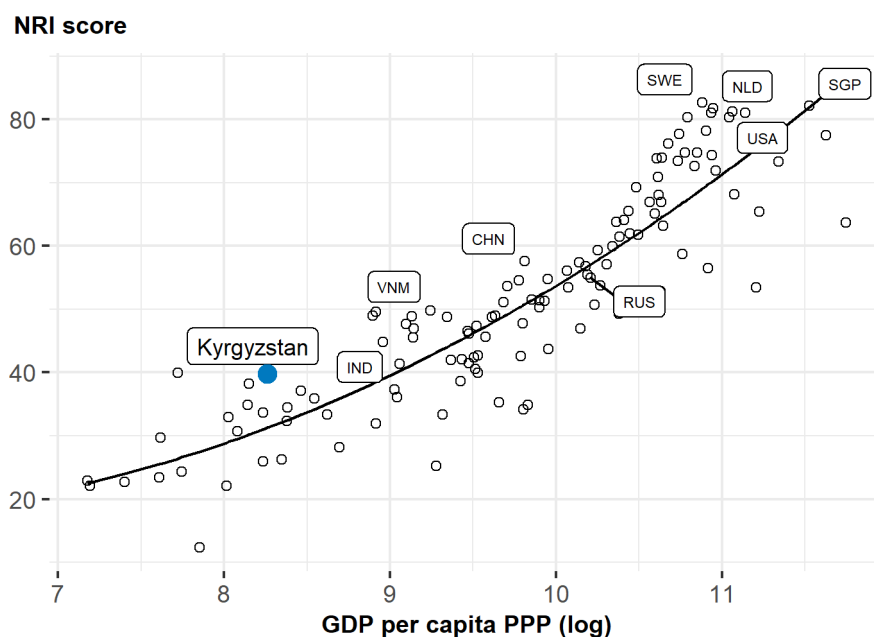
Table 1: Kyrgyzstan rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	30	Regulation	94
SDG Contribution	70	Content	99
Inclusion	74	Economy	101
Individuals	84	Governments	104
Access	90	Trust	109
Businesses	92	Future Technologies	111

NRI score and income

Figure 3 shows the position of Kyrgyzstan 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, Kyrgyzstan 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Kyrgyzstan belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—CIS—is Russia (RUS).

Performance against its income group and region

Lower-middle-income countries

Kyrgyzstan is ranked 10th 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 three of the four pillars: Score, People, Governance and Impact. At the sub-pillar level, it outperforms lower-middle-income countries in six of the twelve sub-pillars: Individuals, Businesses, Regulation, Inclusion, Quality of Life and SDG Contribution.

CIS

Kyrgyzstan is ranked 6th within CIS (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 CIS in one of the twelve sub-pillars: Quality of Life.

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

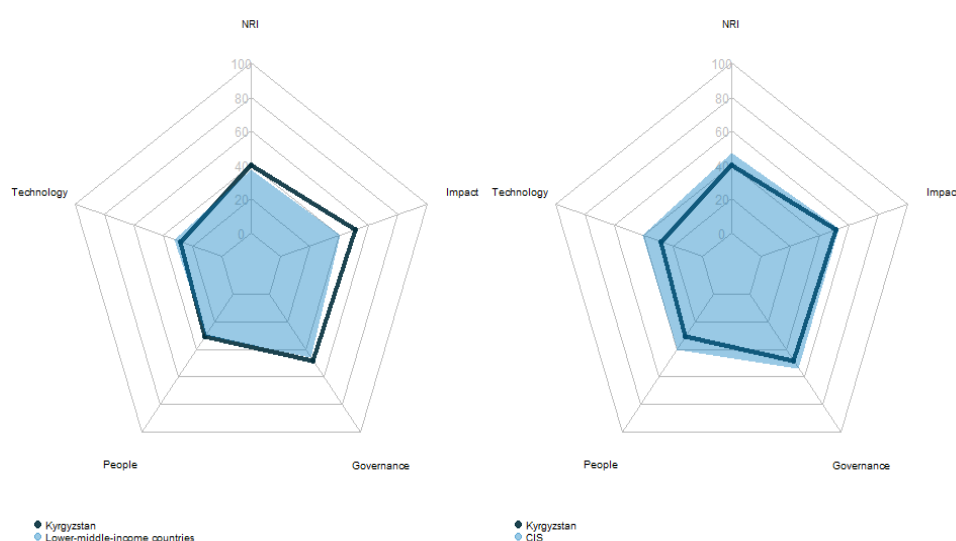


Table 2: Kyrgyzstan scores vs. averages of its income group and region, overall and by pillar

Dimension	Kyrgyzstan	Lower-middle-income countries	CIS
NRI	39.72	37.18	46.89
Technology	28.52	32.15	40.39
People	30.90	30.04	40.30
Governance	48.46	46.17	53.69
Impact	50.99	40.35	53.16

Strongest and weakest indicators

The indicators where Kyrgyzstan performs particularly well include Freedom to make life choices, Income inequality, and Adult literacy rate (Table 3). By contrast, the economy's weakest indicators include Availability of latest technologies, Handset prices, and Extent of staff training.

Table 3: Top-ranked and bottom-ranked indicators of Kyrgyzstan

Strongest indicators	Rank	Weakest indicators	Rank
Freedom to make life choices	5	Legal framework's adaptability to digital business models	101
Income inequality	8	Cybersecurity	104
Adult literacy rate	12	Internet access	106
Active mobile-broadband subscriptions	37	Mobile tariffs	109
Maths proficiency in schools	41	Company investment in emerging technology	110
Internet access in schools	45	Rule of law	112
High-tech exports	50	Medium and high-tech industry	113
Reading proficiency in schools	51	Handset prices	114
Rural gap in use of digital payments	54	Extent of staff training	114
Pollution	56	Availability of latest technologies	116

NRI 2019 At-A-Glance: Kyrgyzstan

Network Readiness Index

Rank: 91 (out of 121)

Score: 39.72

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	101	28.52	C. Governance pillar	93	48.46
1st sub-pillar: Access	90	44.24	1st sub-pillar: Trust	109	34.07
2nd sub-pillar: Content	99	23.70	2nd sub-pillar: Regulation	94	52.91
3rd sub-pillar: Future Technologies	111	17.62	3rd sub-pillar: Inclusion	74	58.42
B. People pillar	94	30.90	D. Impact pillar	69	50.99
1st sub-pillar: Individuals	84	44.78	1st sub-pillar: Economy	101	8.41
2nd sub-pillar: Businesses	92	21.84	2nd sub-pillar: Quality of Life	30	72.63
3rd sub-pillar: Governments	104	26.09	3rd sub-pillar: SDG Contribution	70	71.94

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	109	34.52	3.1.1 Rule of law	112	32.63
1.1.2 Handset prices	114	16.43	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	106	15.83	3.1.3 Secure Internet servers	88	43.81
1.1.4 4G mobile network coverage	87	70.00	3.1.4 Cybersecurity	104	25.77
1.1.5 Fixed-broadband subscriptions	63	64.27	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	73	67.50	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	45	41.13	3.2.1 Regulatory quality	92	43.71
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	73	66.49
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	101	27.97
1.2.2 Mobile apps development	93	45.19	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	64	0.41	3.2.5 Social safety net protection	87	30.72
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	87	73.55
1.3.1 Availability of latest technologies	116	19.19	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	110	12.49	3.3.1 E-Participation	72	64.33
1.3.3 Government procurement of advanced technology products	89	29.72	3.3.2 Socioeconomic gap in use of digital payments	59	70.09
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	99	29.24
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	54	70.01
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	98	31.38	4.1.1 Medium and high-tech industry	113	3.47
2.1.2 Active mobile-broadband subscriptions	37	36.07	4.1.2 High-tech exports	50	17.07
2.1.3 Use of virtual social networks	99	27.23	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	67	29.79	4.1.4 Labour productivity per employee	97	4.71
2.1.5 Adult literacy rate	12	99.40	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	77	46.66
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	5	96.41
2.2.1 Firms with website	60	50.11	4.2.3 Income inequality	8	93.95
2.2.2 Internet shopping	100	3.62	4.2.4 Healthy life expectancy at birth	86	53.48
2.2.3 Professionals	70	23.05	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	61	33.68	4.3.1 Access to basic services	76	89.42
2.2.5 Extent of staff training	114	19.79	4.3.2 Pollution	56	86.01
2.2.6 R&D expenditure by businesses	76	0.80	4.3.3 Road safety	66	60.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	51	57.94
2.3.1 Government online services	81	60.77	4.3.5 Maths proficiency in schools	41	51.30
2.3.2 Publication and use of open data	82	13.24	4.3.6 Use of clean fuels and technology	77	86.67
2.3.3 ICT use and government efficiency	99	24.54			
2.3.4 R&D expenditure by governments and higher education	96	5.80			

* Confidential data

Sources

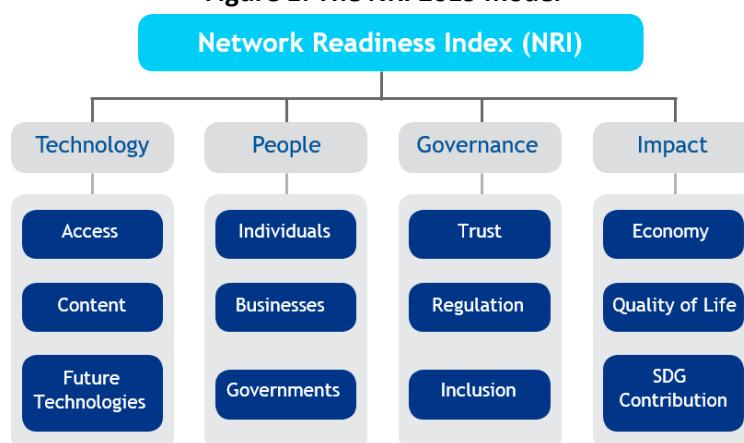
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Network Readiness Index 2019

Laos

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

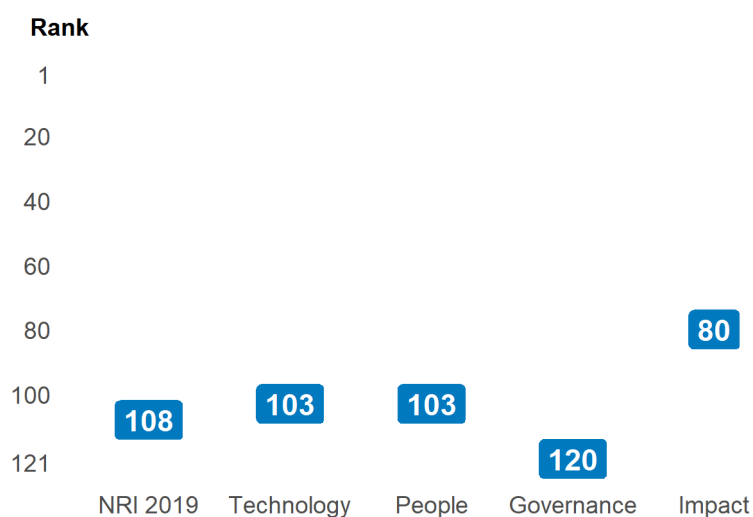
Figure 1: The NRI 2019 model



Global NRI position of Laos

Laos ranks 108th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Laos global ranking, overall and by pillar



Performance at sub-pillar level

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

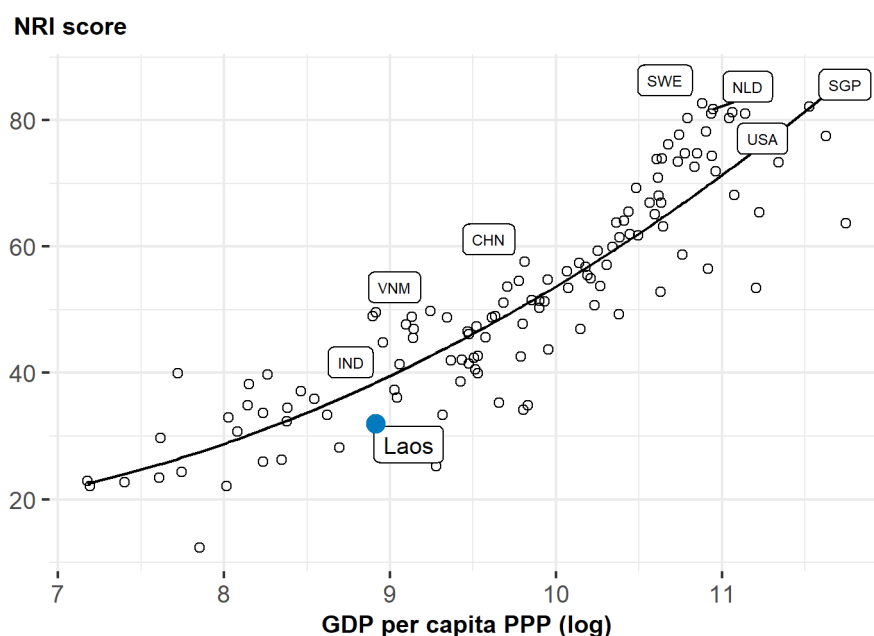
Table 1: Laos rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	25	Governments	103
Future Technologies	42	Access	107
Quality of Life	81	Content	110
Individuals	100	Regulation	114
Businesses	100	Trust	115
SDG Contribution	101	Inclusion	119

NRI score and income

Figure 3 shows the position of Laos 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, Laos 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Laos belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

Laos is ranked 20th 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 three of the twelve sub-pillars: Future Technology, Economy and Quality of Life.

Asia & Pacific

Laos 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 outperforms the average in Asia & Pacific in one of the twelve sub-pillars: Economy.

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



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

Dimension	Laos	Lower-middle-income countries	Asia & Pacific
NRI	31.88	37.18	52.44
Technology	28.19	32.15	48.56
People	25.21	30.04	44.85
Governance	26.32	46.17	61.84
Impact	47.82	40.35	54.50

Strongest and weakest indicators

The indicators where Laos performs particularly well include High-tech exports, Freedom to make life choices, and Maths proficiency in schools (Table 3). By contrast, the economy's weakest indicators include Government online services, E-Participation, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of Laos

Strongest indicators	Rank	Weakest indicators	Rank
High-tech exports	6	E-commerce legislation	110
Freedom to make life choices	24	Use of clean fuels and technology	111
Maths proficiency in schools	44	Secure Internet servers	112
Company investment in emerging technology	51	Digital participation and content creation	113
Government procurement of advanced technology products	52	Ease of doing business	113
ICT use and government efficiency	55	Socioeconomic gap in use of digital payments	114
Legal framework's adaptability to digital business models	57	Rural gap in use of digital payments	115
Income inequality	57	ICT regulatory environment	117
Reading proficiency in schools	68	E-Participation	118
Road safety	71	Government online services	119

NRI 2019 At-A-Glance: Laos

Network Readiness Index

Rank: 108 (out of 121)

Score: 31.88

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	103	28.19	C. Governance pillar	120	26.32
1st sub-pillar: Access	107	33.50	1st sub-pillar: Trust	115	26.32
2nd sub-pillar: Content	110	12.61	2nd sub-pillar: Regulation	114	33.50
3rd sub-pillar: Future Technologies	42	38.44	3rd sub-pillar: Inclusion	119	19.15
B. People pillar	103	25.21	D. Impact pillar	80	47.82
1st sub-pillar: Individuals	100	31.31	1st sub-pillar: Economy	25	40.40
2nd sub-pillar: Businesses	100	17.41	2nd sub-pillar: Quality of Life	81	57.01
3rd sub-pillar: Governments	103	26.91	3rd sub-pillar: SDG Contribution	101	46.05

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	85	51.35	3.1.1 Rule of law	110	34.12
1.1.2 Handset prices	105	23.15	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	97	19.40	3.1.3 Secure Internet servers	112	25.53
1.1.4 4G mobile network coverage	103	43.00	3.1.4 Cybersecurity	109	19.30
1.1.5 Fixed-broadband subscriptions	103	2.93	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	98	61.20	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	109	33.97
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	113	36.42
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	57	44.88
1.2.2 Mobile apps development	102	35.36	3.2.4 E-commerce legislation	110	25.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	86	30.98
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	117	29.73
1.3.1 Availability of latest technologies	105	29.70	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	51	41.87	3.3.1 E-Participation	118	6.37
1.3.3 Government procurement of advanced technology products	52	43.75	3.3.2 Socioeconomic gap in use of digital payments	114	21.08
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	87	37.20
1.3.5 Computer software spending	NA	NA	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	115	11.95
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	106	17.48	4.1.1 Medium and high-tech industry	91	17.11
2.1.2 Active mobile-broadband subscriptions	101	14.76	4.1.2 High-tech exports	6	63.69
2.1.3 Use of virtual social networks	92	37.63	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	96	10.42	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	72	76.26	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	96	37.53
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	24	87.55
2.2.1 Firms with website	98	15.97	4.2.3 Income inequality	57	70.00
2.2.2 Internet shopping	82	7.11	4.2.4 Healthy life expectancy at birth	103	32.97
2.2.3 Professionals	74	18.97	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	103	10.60	4.3.1 Access to basic services	97	71.32
2.2.5 Extent of staff training	74	34.42	4.3.2 Pollution	81	78.83
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	71	56.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	68	23.45
2.3.1 Government online services	119	7.70	4.3.5 Maths proficiency in schools	44	46.13
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	55	46.12			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

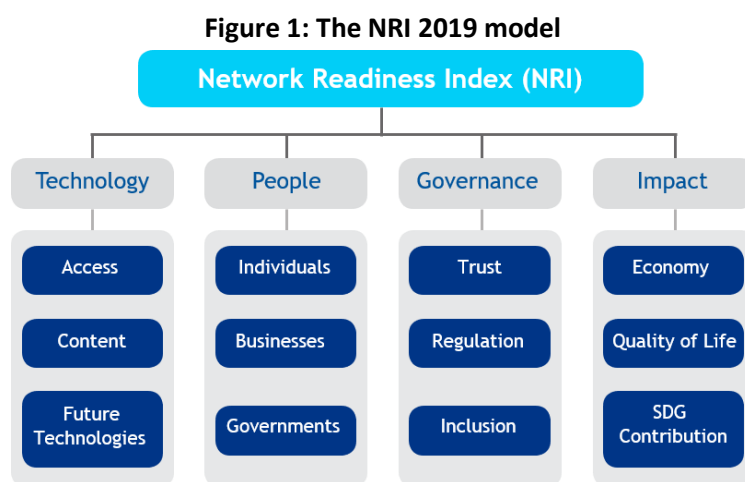
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Network Readiness Index 2019

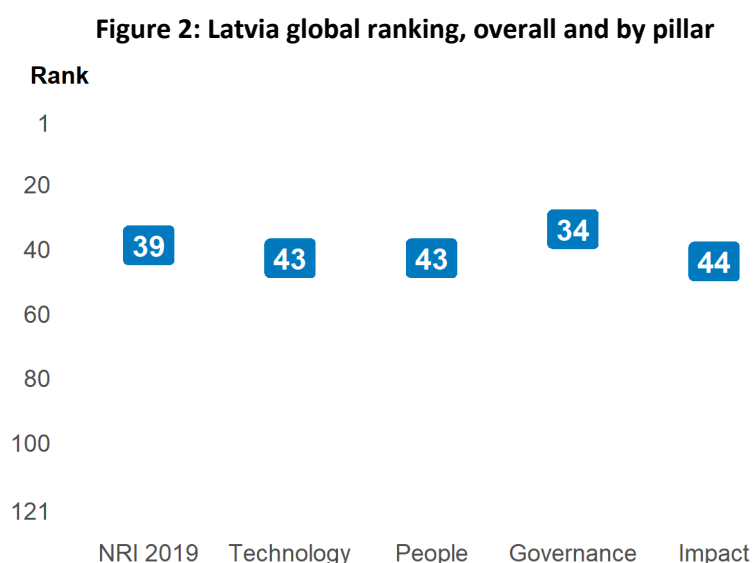
Latvia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Latvia

Latvia ranks 39th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

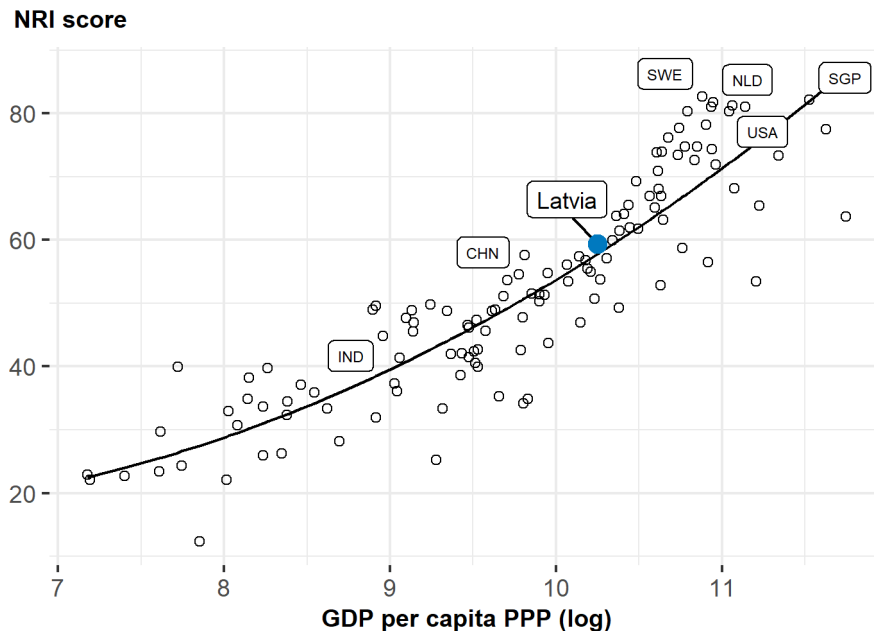
Table 1: Latvia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	20	Access	40
SDG Contribution	21	Regulation	40
Trust	31	Economy	47
Content	32	Governments	74
Businesses	38	Future Technologies	86
Inclusion	39	Quality of Life	88

NRI score and income

Figure 3 shows the position of Latvia 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, Latvia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Latvia belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Latvia is ranked 38th 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 outperforms high-income countries in two of the twelve sub-pillars: Individuals and SDG Contribution.

Europe

Latvia is ranked 28th 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 four of the twelve sub-pillars: Individuals, Trust, Inclusion and SDG Contribution.

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



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

Dimension	Latvia	High-income countries	Europe
NRI	59.31	68.12	65.20
Technology	55.82	66.07	63.08
People	50.80	61.07	57.50
Governance	72.75	77.07	73.99
Impact	57.86	68.29	66.24

Strongest and weakest indicators

The indicators where Latvia performs particularly well include Internet access in schools, E-commerce legislation, and Reading proficiency in schools (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Government procurement of advanced technology products, and Legal framework's adaptability to digital business models.

Table 3: Top-ranked and bottom-ranked indicators of Latvia

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Intellectual property receipts	67
E-commerce legislation	1	Use of virtual social networks	69
Reading proficiency in schools	1	ICT use and government efficiency	72
Use of clean fuels and technology	1	E-Participation	72
Adult literacy rate	2	Medium and high-tech industry	73
Tertiary enrolment	9	Government online services	74
Gender gap in internet use	9	Computer software spending	77
Active mobile-broadband subscriptions	12	Legal framework's adaptability to digital business models	100
Ease of doing business	18	Government procurement of advanced technology products	105
ICT skills	20	Freedom to make life choices	113

NRI 2019 At-A-Glance: Latvia

Network Readiness Index

Rank: 39 (out of 121)

Score: 59.31

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	43	55.82	C. Governance pillar	34	72.75
1st sub-pillar: Access	40	78.12	1st sub-pillar: Trust	31	73.06
2nd sub-pillar: Content	32	64.44	2nd sub-pillar: Regulation	40	72.28
3rd sub-pillar: Future Technologies	86	24.92	3rd sub-pillar: Inclusion	39	72.90
B. People pillar	43	50.80	D. Impact pillar	44	57.86
1st sub-pillar: Individuals	20	68.41	1st sub-pillar: Economy	47	26.30
2nd sub-pillar: Businesses	38	42.91	2nd sub-pillar: Quality of Life	88	54.21
3rd sub-pillar: Governments	74	41.09	3rd sub-pillar: SDG Contribution	21	93.08

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	57	67.24	3.1.1 Rule of law	32	75.16
1.1.2 Handset prices	54	50.09	3.1.2 Software piracy rate	40	55.41
1.1.3 Internet access	41	80.34	3.1.3 Secure Internet servers	30	81.76
1.1.4 4G mobile network coverage	53	95.00	3.1.4 Cybersecurity	45	79.93
1.1.5 Fixed-broadband subscriptions	47	80.11	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	24	74.06	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	26	77.62
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	18	88.53
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	100	29.23
1.2.2 Mobile apps development	35	75.77	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	67	0.25	3.2.5 Social safety net protection	56	46.20
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	28	92.09
1.3.1 Availability of latest technologies	40	67.62	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	53	40.19	3.3.1 E-Participation	72	64.33
1.3.3 Government procurement of advanced technology products	105	23.56	3.3.2 Socioeconomic gap in use of digital payments	27	87.48
1.3.4 ICT PCT patent applications	53	7.61	3.3.3 Availability of local online content	31	72.78
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	9	68.60
1.3.6 Robot density	48	1.45	3.3.5 Rural gap in use of digital payments	49	71.31
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	30	82.11	4.1.1 Medium and high-tech industry	73	27.30
2.1.2 Active mobile-broadband subscriptions	12	50.91	4.1.2 High-tech exports	21	36.63
2.1.3 Use of virtual social networks	69	50.10	4.1.3 PCT patent applications	33	3.91
2.1.4 Tertiary enrolment	9	64.25	4.1.4 Labour productivity per employee	47	37.37
2.1.5 Adult literacy rate	2	99.88	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	20	63.21	4.2.1 Happiness	55	59.24
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	113	18.43
2.2.1 Firms with website	52	57.64	4.2.3 Income inequality	46	75.79
2.2.2 Internet shopping	34	44.25	4.2.4 Healthy life expectancy at birth	65	63.37
2.2.3 Professionals	35	43.60	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	27	59.66	4.3.1 Access to basic services	60	93.92
2.2.5 Extent of staff training	49	48.79	4.3.2 Pollution	29	92.11
2.2.6 R&D expenditure by businesses	56	3.54	4.3.3 Road safety	39	79.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	1	100.00
2.3.1 Government online services	74	63.08	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	55	27.89	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	72	40.05			
2.3.4 R&D expenditure by governments and higher education	48	33.33			

* Confidential data

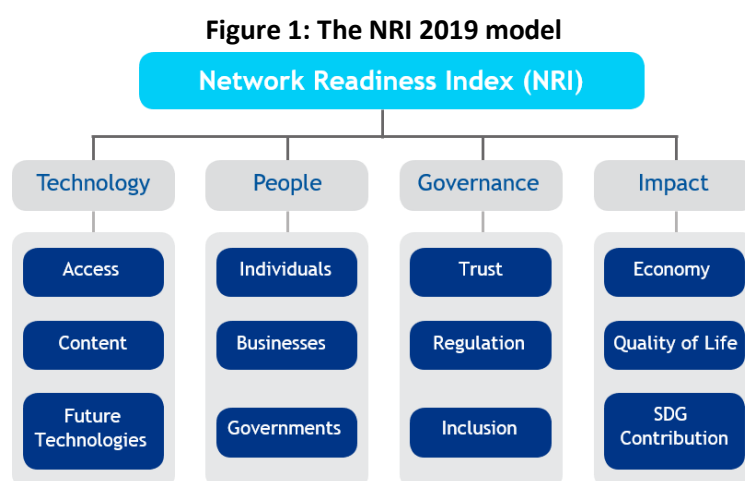
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Network Readiness Index 2019

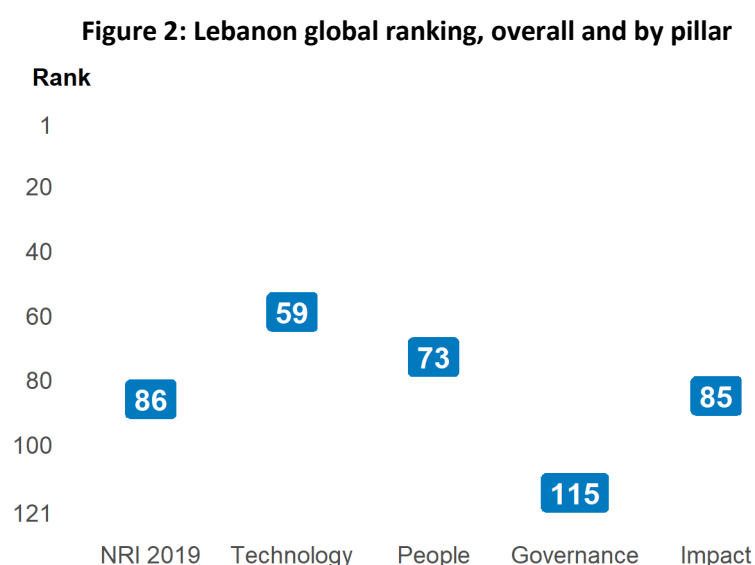
Lebanon

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Global NRI position of Lebanon

Lebanon ranks 86th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Lebanon relate to Individuals, Businesses and Content, among others (Table 1). More could be done, though, to improve the economy's performances in the Trust, Governments and Regulation sub-pillars.

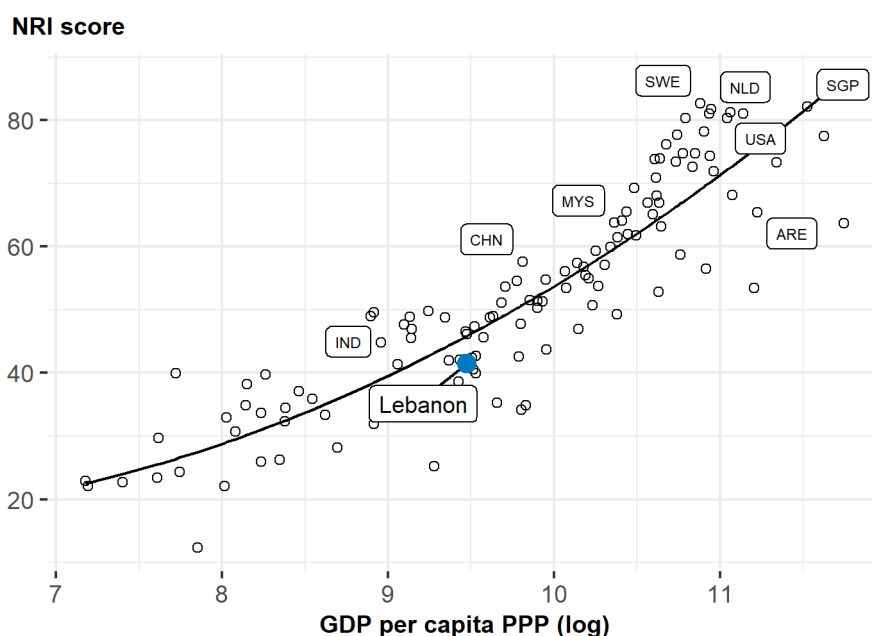
Table 1: Lebanon rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	34	Future Technologies	92
Businesses	46	Quality of Life	95
Content	51	Inclusion	105
Access	57	Trust	111
SDG Contribution	67	Governments	112
Economy	91	Regulation	120

NRI score and income

Figure 3 shows the position of Lebanon 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, Lebanon 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Lebanon belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

Upper-middle-income countries

Lebanon is ranked 31st 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: Technology. At the sub-pillar level, it outperforms upper-middle-income countries in four of the twelve sub-pillars: Access, Content, Individuals and Businesses.

Arab States

Lebanon is ranked 9th within Arab States (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Technology. With regard to sub-pillars, it outperforms the average in Arab States in five of the twelve sub-pillars: Access, Content, Individuals, Businesses and SDG Contribution.

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



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

Dimension	Lebanon	Upper-middle-income countries	Arab States
NRI	41.44	47.40	46.82
Technology	47.76	42.66	43.54
People	40.01	41.07	41.30
Governance	33.18	56.24	54.28
Impact	44.82	49.62	48.18

Strongest and weakest indicators

The indicators where Lebanon performs particularly well include Income inequality, Internet access in schools, and Internet access (Table 3). By contrast, the economy's weakest indicators include ICT regulatory environment, E-commerce legislation, and Freedom to make life choices.

Table 3: Top-ranked and bottom-ranked indicators of Lebanon

Strongest indicators	Rank	Weakest indicators	Rank
Income inequality	24	Government online services	103
Internet access in schools	31	Rule of law	103
Internet access	34	ICT use and government efficiency	106
Use of virtual social networks	35	Ease of doing business	110
4G mobile network coverage	36	Cybersecurity	111
Mobile apps development	46	Social safety net protection	111
Internet users	46	Socioeconomic gap in use of digital payments	112
Rural gap in use of digital payments	48	Freedom to make life choices	114
Adult literacy rate	49	E-commerce legislation	117
Firms with website	50	ICT regulatory environment	118

NRI 2019 At-A-Glance: Lebanon

Network Readiness Index

Rank: 86 (out of 121)

Score: 41.44

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	59	47.76	C. Governance pillar	115	33.18
1st sub-pillar: Access	57	70.49	1st sub-pillar: Trust	111	31.31
2nd sub-pillar: Content	51	50.14	2nd sub-pillar: Regulation	120	25.70
3rd sub-pillar: Future Technologies	92	22.66	3rd sub-pillar: Inclusion	105	42.52
B. People pillar	73	40.01	D. Impact pillar	85	44.82
1st sub-pillar: Individuals	34	62.57	1st sub-pillar: Economy	91	10.03
2nd sub-pillar: Businesses	46	36.78	2nd sub-pillar: Quality of Life	95	51.80
3rd sub-pillar: Governments	112	20.69	3rd sub-pillar: SDG Contribution	67	72.61

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	94	47.41	3.1.1 Rule of law	103	35.90
1.1.2 Handset prices	77	41.05	3.1.2 Software piracy rate	71	27.03
1.1.3 Internet access	34	83.32	3.1.3 Secure Internet servers	87	44.02
1.1.4 4G mobile network coverage	36	98.20	3.1.4 Cybersecurity	111	18.31
1.1.5 Fixed-broadband subscriptions	NA	NA	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	86	63.15	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	31	89.84	3.2.1 Regulatory quality	91	43.89
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	110	42.63
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	102	27.14
1.2.2 Mobile apps development	46	68.16	3.2.4 E-commerce legislation	117	0.00
1.2.3 Intellectual property receipts	59	0.53	3.2.5 Social safety net protection	111	16.63
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	118	23.94
1.3.1 Availability of latest technologies	100	35.18	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	61	35.91	3.3.1 E-Participation	102	36.94
1.3.3 Government procurement of advanced technology products	100	27.11	3.3.2 Socioeconomic gap in use of digital payments	112	30.08
1.3.4 ICT PCT patent applications	55	6.01	3.3.3 Availability of local online content	98	31.68
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	48	71.37
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	46	76.10	4.1.1 Medium and high-tech industry	78	25.29
2.1.2 Active mobile-broadband subscriptions	100	16.09	4.1.2 High-tech exports	93	4.45
2.1.3 Use of virtual social networks	35	65.70	4.1.3 PCT patent applications	65	0.35
2.1.4 Tertiary enrolment	NA	NA	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	49	92.40	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	85	43.95
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	114	18.16
2.2.1 Firms with website	50	58.93	4.2.3 Income inequality	24	82.11
2.2.2 Internet shopping	64	17.64	4.2.4 Healthy life expectancy at birth	66	63.00
2.2.3 Professionals	NA	NA	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	NA	NA	4.3.1 Access to basic services	58	94.11
2.2.5 Extent of staff training	76	33.78	4.3.2 Pollution	91	71.85
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	80	51.88
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	103	41.54	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	94	5.82	4.3.6 Use of clean fuels and technology	NA	NA
2.3.3 ICT use and government efficiency	106	14.71			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

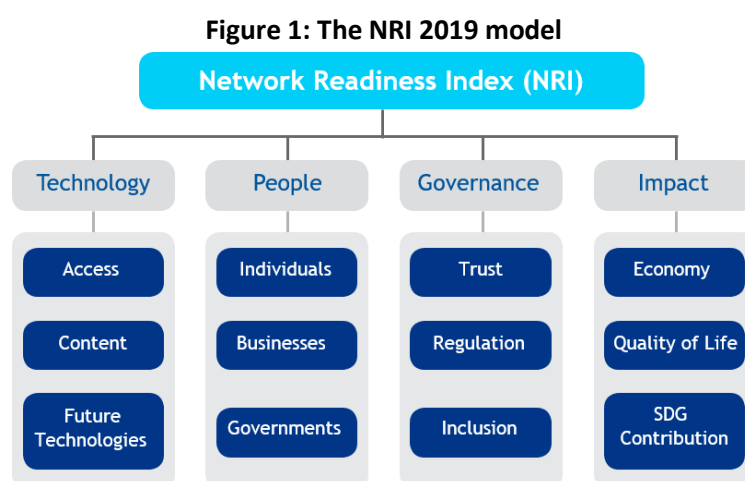
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Network Readiness Index 2019

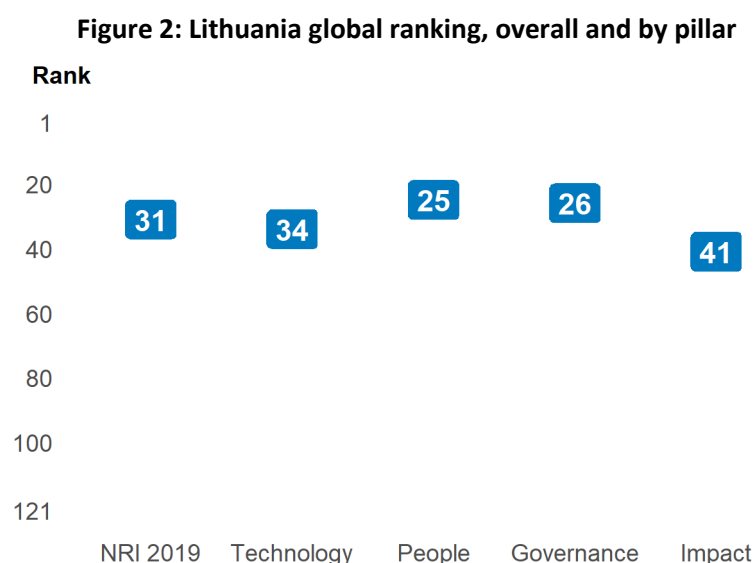
Lithuania

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Lithuania

Lithuania ranks 31st out of the 121 economies included in the NRI 2019 (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 Lithuania relate to Content, Governments and Trust, among others (Table 1). More could be done, though, to improve the economy's performances in the Economy, Future Technologies and Quality of Life sub-pillars.

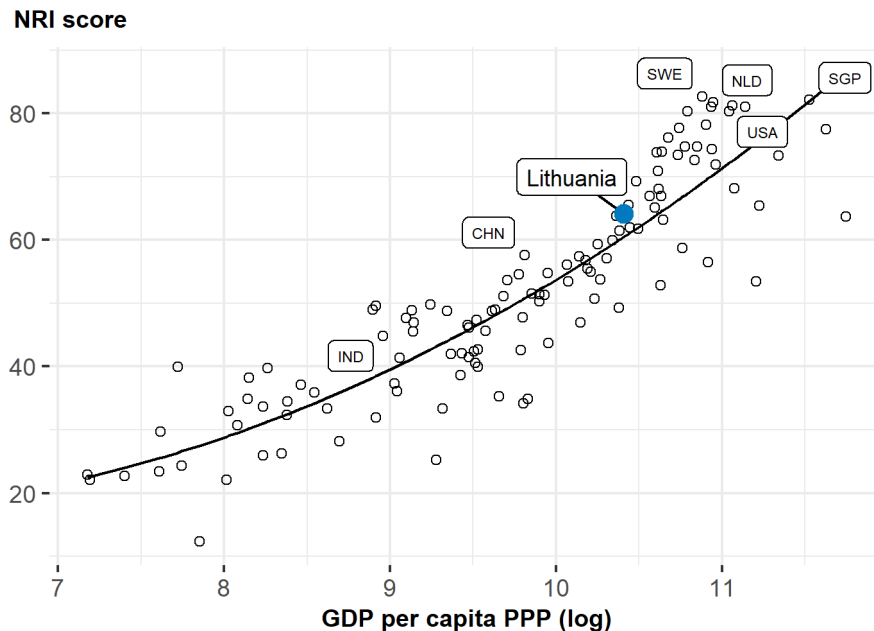
Table 1: Lithuania rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	22	Businesses	29
Governments	23	Access	30
Trust	24	Regulation	34
Inclusion	24	Economy	48
SDG Contribution	24	Future Technologies	57
Individuals	28	Quality of Life	70

NRI score and income

Figure 3 shows the position of Lithuania 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, Lithuania 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Lithuania belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Lithuania is ranked 31st 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 outperforms high-income countries in five of the twelve sub-pillars: Content, Governments, Trust, Inclusion and SDG Contribution.

Europe

Lithuania is ranked 22nd within Europe (Figure 4, right panel). It has a score above the regional average in two of the four pillars: People and Governance. With regard to sub-pillars, it outperforms the average in Europe in seven of the twelve sub-pillars: Access, Content, Individuals, Governments, Trust, Inclusion and SDG Contribution.

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



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

Dimension	Lithuania	High-income countries	Europe
NRI	64.13	68.12	65.20
Technology	60.67	66.07	63.08
People	59.54	61.07	57.50
Governance	77.03	77.07	73.99
Impact	59.29	68.29	66.24

Strongest and weakest indicators

The indicators where Lithuania performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Adult literacy rate (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Social safety net protection, and Government procurement of advanced technology products.

Table 3: Top-ranked and bottom-ranked indicators of Lithuania

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Technicians and associate professionals	52
Use of clean fuels and technology	1	Medium and high-tech industry	52
Adult literacy rate	4	Access to basic services	59
Cybersecurity	4	Income inequality	60
ICT regulatory environment	5	Intellectual property receipts	63
International Internet bandwidth	9	Healthy life expectancy at birth	66
Rural gap in use of digital payments	10	Computer software spending	77
Ease of doing business	11	Government procurement of advanced technology products	88
Professionals	13	Social safety net protection	90
Gender gap in internet use	14	Freedom to make life choices	101

NRI 2019 At-A-Glance: Lithuania

Network Readiness Index

Rank: 31 (out of 121)

Score: 64.13

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	34	60.67	C. Governance pillar	26	77.03
1st sub-pillar: Access	30	81.30	1st sub-pillar: Trust	24	77.28
2nd sub-pillar: Content	22	68.49	2nd sub-pillar: Regulation	34	75.87
3rd sub-pillar: Future Technologies	57	32.23	3rd sub-pillar: Inclusion	24	77.93
B. People pillar	25	59.54	D. Impact pillar	41	59.29
1st sub-pillar: Individuals	28	64.68	1st sub-pillar: Economy	48	25.76
2nd sub-pillar: Businesses	29	50.34	2nd sub-pillar: Quality of Life	70	59.39
3rd sub-pillar: Governments	23	63.60	3rd sub-pillar: SDG Contribution	24	92.73

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	19	84.23	3.1.1 Rule of law	31	75.17
1.1.2 Handset prices	49	53.94	3.1.2 Software piracy rate	43	52.70
1.1.3 Internet access	49	76.93	3.1.3 Secure Internet servers	24	83.76
1.1.4 4G mobile network coverage	38	98.00	3.1.4 Cybersecurity	4	97.48
1.1.5 Fixed-broadband subscriptions	21	94.58	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	9	80.10	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	29	75.93
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	11	90.90
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	28	61.16
1.2.2 Mobile apps development	24	83.19	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	63	0.45	3.2.5 Social safety net protection	90	29.94
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	5	97.30
1.3.1 Availability of latest technologies	30	74.54	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	29	58.52	3.3.1 E-Participation	51	77.71
1.3.3 Government procurement of advanced technology products	88	30.56	3.3.2 Socioeconomic gap in use of digital payments	35	82.71
1.3.4 ICT PCT patent applications	42	16.79	3.3.3 Availability of local online content	20	82.46
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	14	67.59
1.3.6 Robot density	44	3.88	3.3.5 Rural gap in use of digital payments	10	79.18
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	42	77.82	4.1.1 Medium and high-tech industry	52	35.50
2.1.2 Active mobile-broadband subscriptions	28	38.77	4.1.2 High-tech exports	38	22.94
2.1.3 Use of virtual social networks	49	58.42	4.1.3 PCT patent applications	39	3.03
2.1.4 Tertiary enrolment	24	52.73	4.1.4 Labour productivity per employee	40	41.57
2.1.5 Adult literacy rate	4	99.75	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	22	60.59	4.2.1 Happiness	34	67.73
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	101	39.44
2.2.1 Firms with website	22	77.30	4.2.3 Income inequality	60	67.37
2.2.2 Internet shopping	32	52.88	4.2.4 Healthy life expectancy at birth	66	63.00
2.2.3 Professionals	13	60.92	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	52	41.41	4.3.1 Access to basic services	59	94.00
2.2.5 Extent of staff training	29	61.41	4.3.2 Pollution	22	93.50
2.2.6 R&D expenditure by businesses	47	8.13	4.3.3 Road safety	33	83.44
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	45	77.69	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	31	61.39			
2.3.4 R&D expenditure by governments and higher education	30	51.73			

* Confidential data

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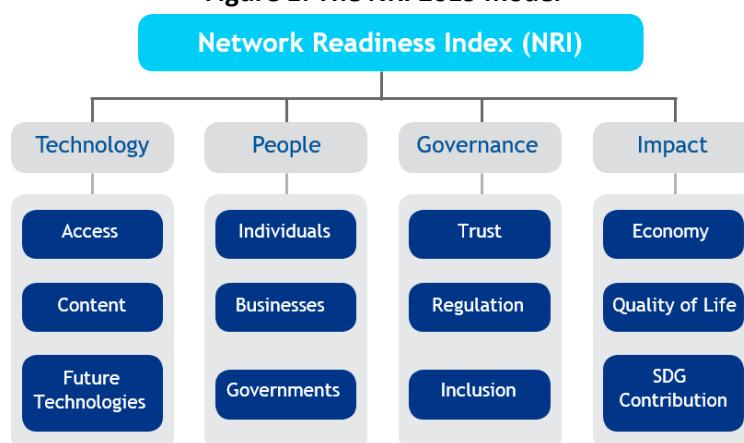
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Network Readiness Index 2019

Luxembourg

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

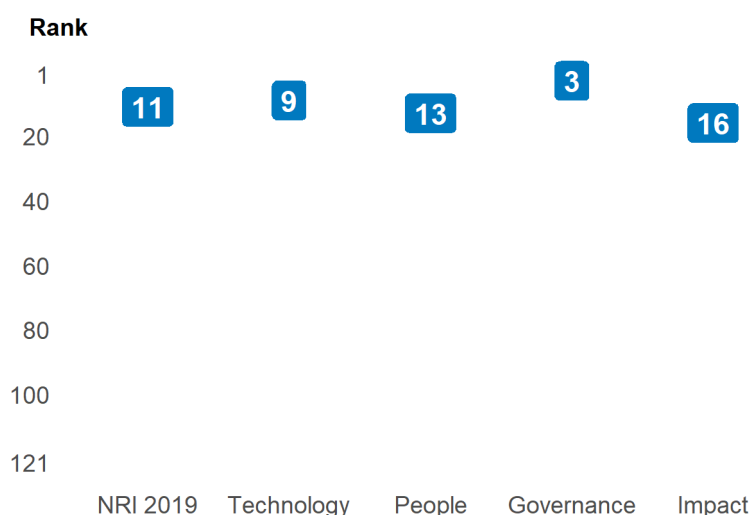
Figure 1: The NRI 2019 model



Global NRI position of Luxembourg

Luxembourg ranks 11th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Luxembourg global ranking, overall and by pillar



Performance at sub-pillar level

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

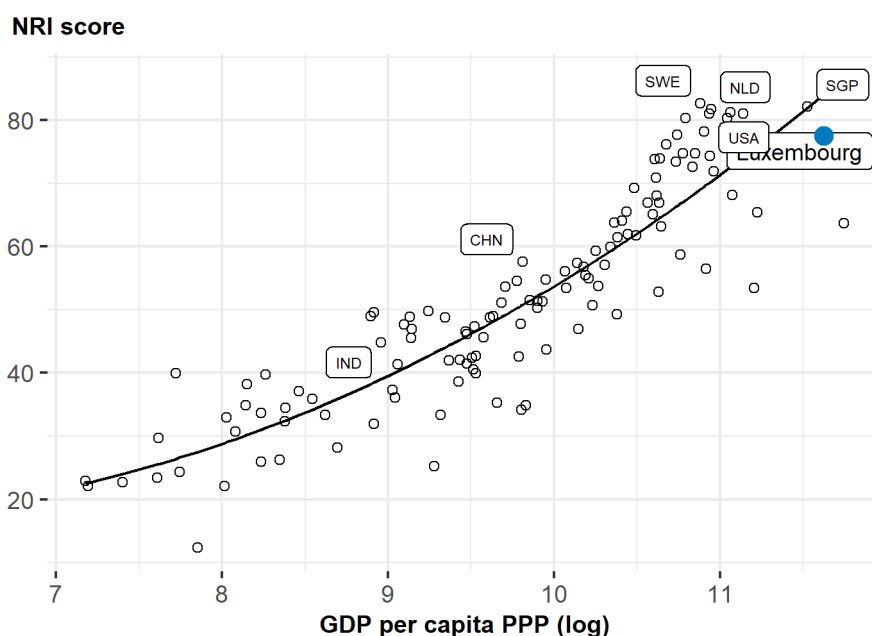
Table 1: Luxembourg rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Access	1	Content	14
Trust	1	Inclusion	14
Businesses	8	Governments	15
Regulation	8	Quality of Life	15
Future Technologies	9	Economy	23
SDG Contribution	13	Individuals	39

NRI score and income

Figure 3 shows the position of Luxembourg 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, Luxembourg 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Luxembourg belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Luxembourg is ranked 11th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Luxembourg is ranked 9th 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 eleven of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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

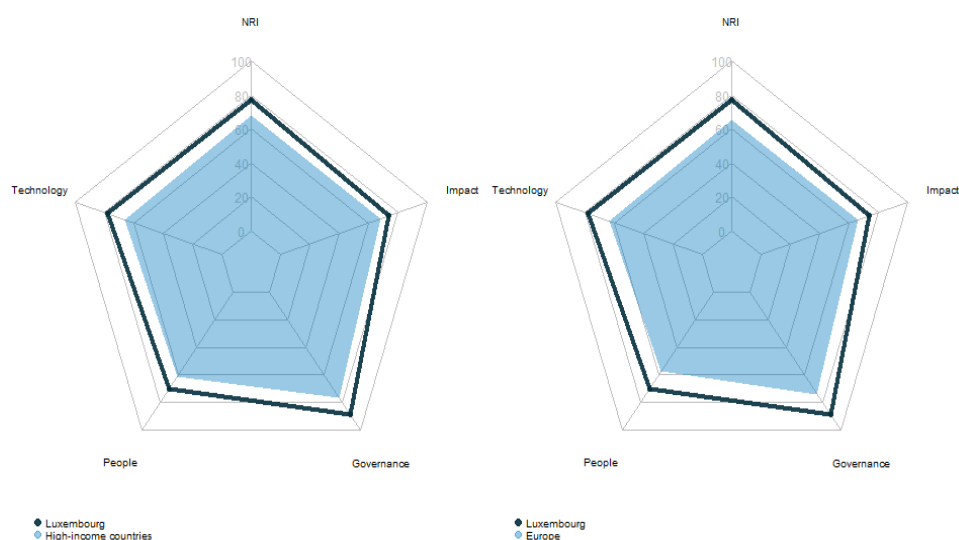


Table 2: Luxembourg scores vs. averages of its income group and region, overall and by pillar

Dimension	Luxembourg	High-income countries	Europe
NRI	77.46	68.12	65.20
Technology	77.66	66.07	63.08
People	69.86	61.07	57.50
Governance	88.92	77.07	73.99
Impact	73.39	68.29	66.24

Strongest and weakest indicators

The indicators where Luxembourg performs particularly well include International Internet bandwidth, Professionals, and E-commerce legislation (Table 3). By contrast, the economy's weakest indicators include Tertiary enrolment, Medium and high-tech industry, Ease of doing business, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of Luxembourg

Strongest indicators	Rank	Weakest indicators	Rank
International Internet bandwidth	1	Income inequality	42
Professionals	1	Fixed-broadband subscriptions	44
E-commerce legislation	1	4G mobile network coverage	45
Use of clean fuels and technology	1	Use of virtual social networks	45
Mobile tariffs	3	Computer software spending	59
ICT skills	3	High-tech exports	64
Extent of staff training	3	Ease of doing business	65
Legal framework's adaptability to digital business models	3	ICT regulatory environment	65
Social safety net protection	3	Medium and high-tech industry	68
Software piracy rate	4	Tertiary enrolment	93

NRI 2019 At-A-Glance: Luxembourg

Network Readiness Index

Rank: 11 (out of 121)

Score: 77.46

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	9	77.66	C. Governance pillar	3	88.92
1st sub-pillar: Access	1	92.27	1st sub-pillar: Trust	1	94.51
2nd sub-pillar: Content	14	73.41	2nd sub-pillar: Regulation	8	89.72
3rd sub-pillar: Future Technologies	9	67.30	3rd sub-pillar: Inclusion	14	82.53
B. People pillar	13	69.86	D. Impact pillar	16	73.39
1st sub-pillar: Individuals	39	61.60	1st sub-pillar: Economy	23	41.37
2nd sub-pillar: Businesses	8	72.35	2nd sub-pillar: Quality of Life	15	83.28
3rd sub-pillar: Governments	15	75.61	3rd sub-pillar: SDG Contribution	13	95.51

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	3	97.81	3.1.1 Rule of law	10	94.63
1.1.2 Handset prices	6	82.46	3.1.2 Software piracy rate	4	97.30
1.1.3 Internet access	15	92.52	3.1.3 Secure Internet servers	10	91.06
1.1.4 4G mobile network coverage	45	97.00	3.1.4 Cybersecurity	12	95.07
1.1.5 Fixed-broadband subscriptions	44	83.86	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	1	100.00	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	11	90.12
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	65	69.64
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	3	96.06
1.2.2 Mobile apps development	10	89.20	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	13	12.24	3.2.5 Social safety net protection	3	99.11
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	65	83.40
1.3.1 Availability of latest technologies	10	91.76	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	10	77.85	3.3.1 E-Participation	19	92.99
1.3.3 Government procurement of advanced technology products	9	78.29	3.3.2 Socioeconomic gap in use of digital payments	8	97.26
1.3.4 ICT PCT patent applications	8	70.42	3.3.3 Availability of local online content	18	83.16
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	35	62.99
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	20	76.25
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	7	97.12	4.1.1 Medium and high-tech industry	68	27.92
2.1.2 Active mobile-broadband subscriptions	38	36.06	4.1.2 High-tech exports	64	13.20
2.1.3 Use of virtual social networks	45	61.54	4.1.3 PCT patent applications	12	41.91
2.1.4 Tertiary enrolment	93	13.50	4.1.4 Labour productivity per employee	4	82.46
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	3	99.80	4.2.1 Happiness	10	87.18
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	35	82.28
2.2.1 Firms with website	11	84.09	4.2.3 Income inequality	42	76.84
2.2.2 Internet shopping	20	65.55	4.2.4 Healthy life expectancy at birth	15	86.81
2.2.3 Professionals	1	100.00	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	10	77.19	4.3.1 Access to basic services	40	98.34
2.2.5 Extent of staff training	3	90.11	4.3.2 Pollution	15	94.94
2.2.6 R&D expenditure by businesses	28	17.18	4.3.3 Road safety	25	88.75
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	22	91.54	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	8	83.08			
2.3.4 R&D expenditure by governments and higher education	27	52.21			

* Confidential data

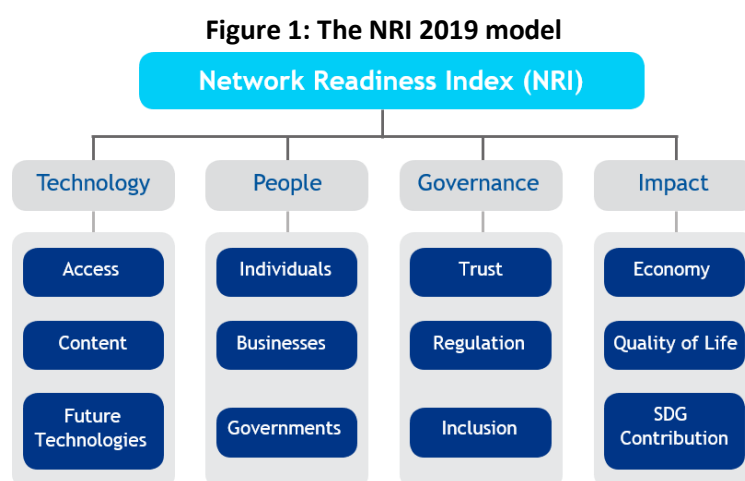
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Network Readiness Index 2019

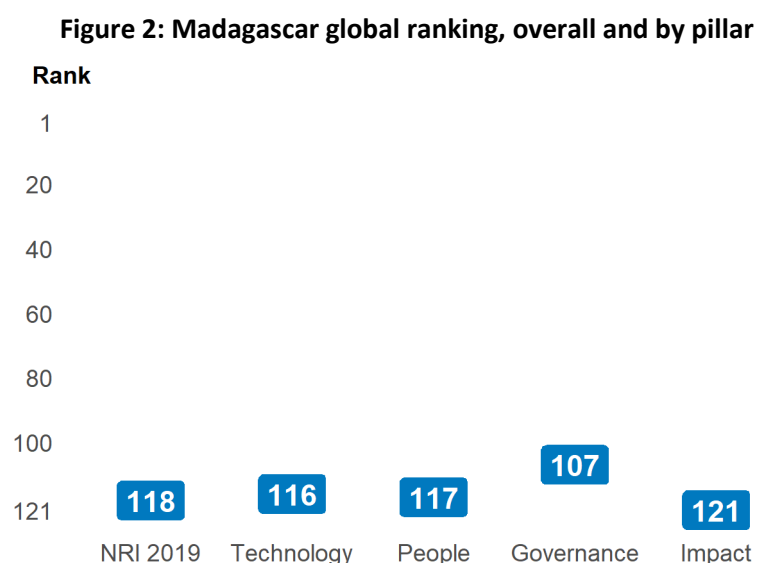
Madagascar

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Madagascar

Madagascar ranks 118th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

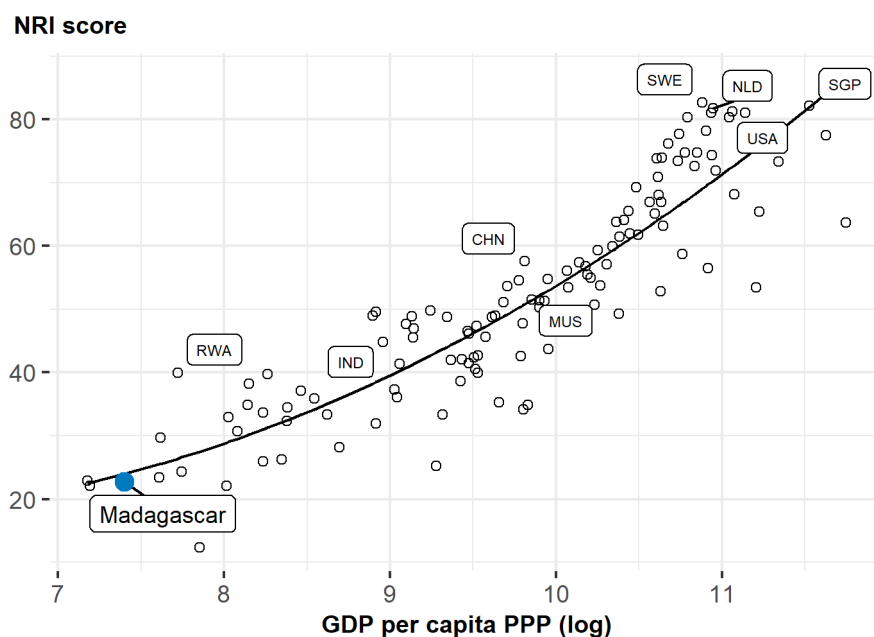
Table 1: Madagascar rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	99	Access	117
Regulation	103	SDG Contribution	117
Trust	107	Governments	118
Inclusion	109	Businesses	119
Content	112	Quality of Life	119
Individuals	115	Economy	120

NRI score and income

Figure 3 shows the position of Madagascar 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, Madagascar 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Madagascar belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Low-income countries

Madagascar is ranked 9th in the group of low-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 outperforms low-income countries in two of the twelve sub-pillars: Content and Regulation.

Africa

Madagascar is ranked 18th within Africa (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 Madagascar against its income group and region, overall and by pillar



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

Dimension	Madagascar	Low-income countries	Africa
NRI	22.73	26.91	31.07
Technology	17.77	20.09	26.03
People	13.62	18.24	23.76
Governance	40.01	41.33	45.32
Impact	19.54	27.97	29.15

Strongest and weakest indicators

The indicators where Madagascar performs particularly well include E-commerce legislation, Online trust and safety, and Intellectual property receipts (Table 3). By contrast, the economy's weakest indicators include Internet users, Freedom to make life choices, and Access to basic services.

Table 3: Top-ranked and bottom-ranked indicators of Madagascar

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	4G mobile network coverage	114
Online trust and safety	30	Technicians and associate professionals	115
Intellectual property receipts	60	Ease of doing business	116
Internet access in schools	65	Internet access	118
Pollution	71	Active mobile-broadband subscriptions	118
Socioeconomic gap in use of digital payments	75	Secure Internet servers	118
Income inequality	81	Mobile tariffs	119
Company investment in emerging technology	82	Freedom to make life choices	120
Adult literacy rate	82	Access to basic services	120
Fixed-broadband subscriptions	84	Internet users	121

NRI 2019 At-A-Glance: Madagascar

Network Readiness Index

Rank: 118 (out of 121)

Score: 22.73

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	116	17.77	C. Governance pillar	107	40.01
1st sub-pillar: Access	117	19.87	1st sub-pillar: Trust	107	34.93
2nd sub-pillar: Content	112	12.09	2nd sub-pillar: Regulation	103	46.12
3rd sub-pillar: Future Technologies	99	21.35	3rd sub-pillar: Inclusion	109	38.98
B. People pillar	117	13.62	D. Impact pillar	121	19.54
1st sub-pillar: Individuals	115	14.93	1st sub-pillar: Economy	120	1.92
2nd sub-pillar: Businesses	119	9.70	2nd sub-pillar: Quality of Life	119	28.63
3rd sub-pillar: Governments	118	16.22	3rd sub-pillar: SDG Contribution	117	28.06

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	119	7.62	3.1.1 Rule of law	106	34.77
1.1.2 Handset prices	103	23.56	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	118	2.06	3.1.3 Secure Internet servers	118	13.70
1.1.4 4G mobile network coverage	114	25.00	3.1.4 Cybersecurity	108	19.41
1.1.5 Fixed-broadband subscriptions	84	27.87	3.1.5 Online trust and safety	30	71.84
1.1.6 International Internet bandwidth	110	53.01	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	65	0.00	3.2.1 Regulatory quality	107	35.26
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	116	30.94
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	99	29.52
1.2.2 Mobile apps development	108	29.14	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	60	0.51	3.2.5 Social safety net protection	113	13.24
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	99	67.76
1.3.1 Availability of latest technologies	107	28.84	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	82	28.28	3.3.1 E-Participation	110	23.56
1.3.3 Government procurement of advanced technology products	92	28.29	3.3.2 Socioeconomic gap in use of digital payments	75	58.79
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	92	34.85
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	106	38.73
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	121	0.00	4.1.1 Medium and high-tech industry	112	4.24
2.1.2 Active mobile-broadband subscriptions	118	3.94	4.1.2 High-tech exports	112	1.06
2.1.3 Use of virtual social networks	111	6.44	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	111	3.28	4.1.4 Labour productivity per employee	107	0.46
2.1.5 Adult literacy rate	82	60.98	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	112	21.10
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	120	5.29
2.2.1 Firms with website	100	14.15	4.2.3 Income inequality	81	53.68
2.2.2 Internet shopping	112	1.24	4.2.4 Healthy life expectancy at birth	102	34.43
2.2.3 Professionals	112	3.26	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	115	2.77	4.3.1 Access to basic services	120	10.90
2.2.5 Extent of staff training	98	27.09	4.3.2 Pollution	71	82.27
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	108	19.06
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	113	23.08	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	98	25.57			
2.3.4 R&D expenditure by governments and higher education	105	0.00			

* Confidential data

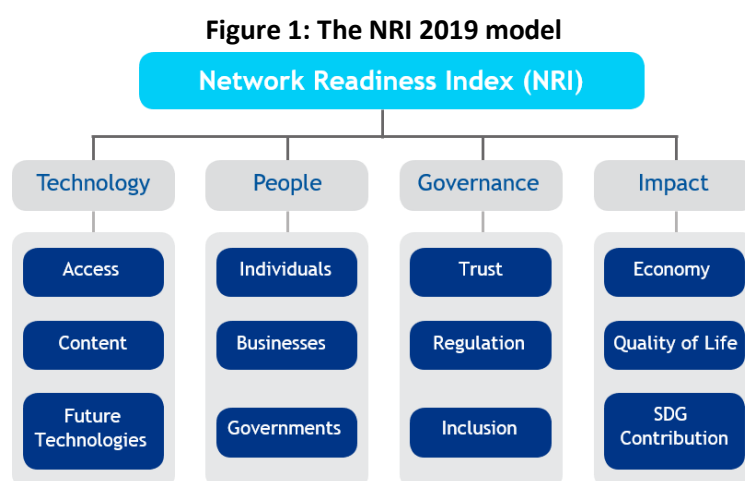
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Network Readiness Index 2019

Malawi

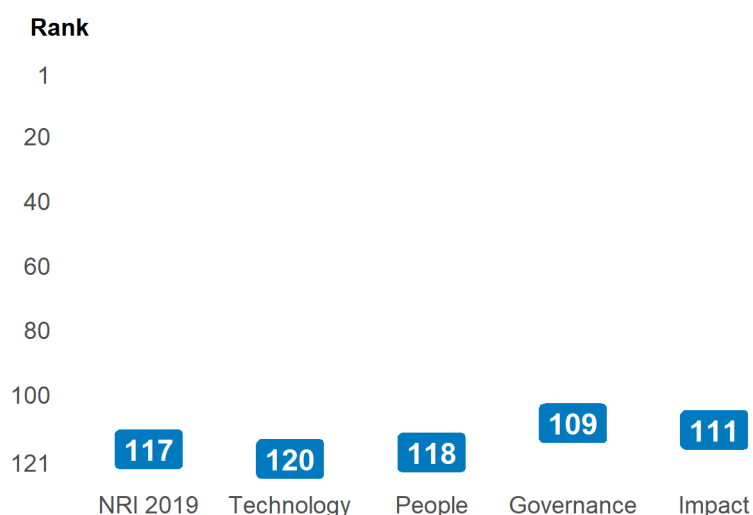
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Malawi

Malawi ranks 117th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Malawi global ranking, overall and by pillar



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Malawi relate to Economy, Regulation and Trust, among others (Table 1). More could be done, though, to improve the economy's performances in the Inclusion, Access and Governments sub-pillars.

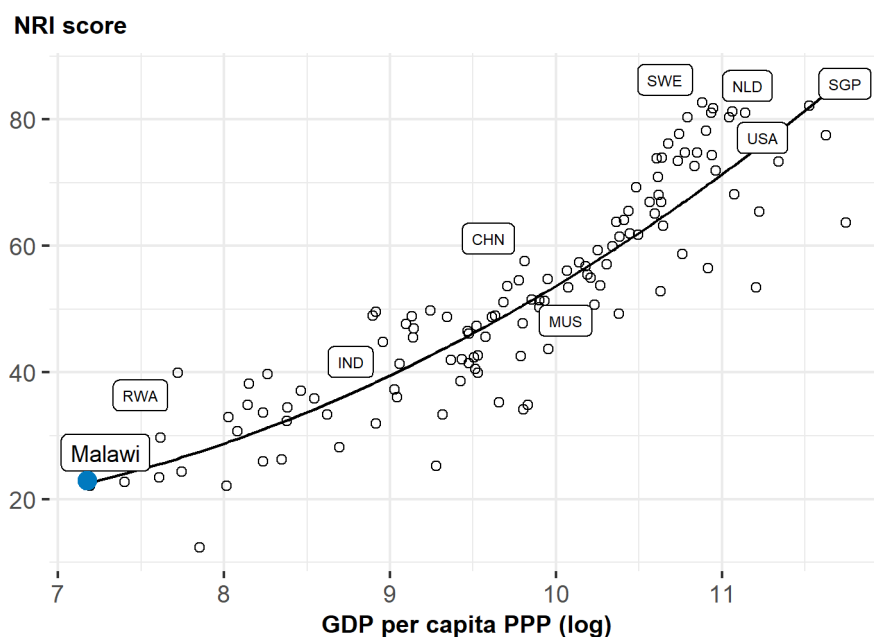
Table 1: Malawi rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	85	Future Technologies	116
Regulation	90	Individuals	117
Trust	94	Content	118
Businesses	107	Inclusion	118
Quality of Life	113	Access	119
SDG Contribution	113	Governments	119

NRI score and income

Figure 3 shows the position of Malawi 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, Malawi 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Malawi belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Low-income countries

Malawi is ranked 8th in the group of low-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 outperforms low-income countries in four of the twelve sub-pillars: Businesses, Trust, Regulation and Economy.

Africa

Malawi is ranked 17th within Africa (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 Africa in two of the twelve sub-pillars: Regulation and Economy.

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



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

Dimension	Malawi	Low-income countries	Africa
NRI	22.90	26.91	31.07
Technology	12.09	20.09	26.03
People	13.57	18.24	23.76
Governance	39.08	41.33	45.32
Impact	26.86	27.97	29.15

Strongest and weakest indicators

The indicators where Malawi performs particularly well include E-commerce legislation, High-tech exports, and Maths proficiency in schools (Table 3). By contrast, the economy's weakest indicators include Mobile apps development, Use of virtual social networks, and Happiness.

Table 3: Top-ranked and bottom-ranked indicators of Malawi

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	E-Participation	115
High-tech exports	40	Availability of local online content	115
Maths proficiency in schools	42	Technicians and associate professionals	116
Online trust and safety	43	Road safety	116
ICT regulatory environment	45	Handset prices	117
Reading proficiency in schools	69	Mobile tariffs	118
Rural gap in use of digital payments	71	Internet users	118
Freedom to make life choices	72	Happiness	120
Pollution	73	Mobile apps development	121
Firms with website	75	Use of virtual social networks	121

NRI 2019 At-A-Glance: Malawi

Network Readiness Index

Rank: 117 (out of 121)

Score: 22.90

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	120	12.09	C. Governance pillar	109	39.08
1st sub-pillar: Access	119	16.37	1st sub-pillar: Trust	94	40.69
2nd sub-pillar: Content	118	5.40	2nd sub-pillar: Regulation	90	54.10
3rd sub-pillar: Future Technologies	116	14.51	3rd sub-pillar: Inclusion	118	22.44
B. People pillar	118	13.57	D. Impact pillar	111	26.86
1st sub-pillar: Individuals	117	10.89	1st sub-pillar: Economy	85	12.01
2nd sub-pillar: Businesses	107	14.67	2nd sub-pillar: Quality of Life	113	35.82
3rd sub-pillar: Governments	119	15.14	3rd sub-pillar: SDG Contribution	113	32.75

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	118	8.23	3.1.1 Rule of law	82	44.66
1.1.2 Handset prices	117	4.10	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	114	5.12	3.1.3 Secure Internet servers	115	23.06
1.1.4 4G mobile network coverage	113	30.00	3.1.4 Cybersecurity	100	28.07
1.1.5 Fixed-broadband subscriptions	107	0.77	3.1.5 Online trust and safety	43	66.97
1.1.6 International Internet bandwidth	115	50.01	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	105	36.64
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	93	54.31
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	104	24.43
1.2.2 Mobile apps development	121	0.00	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	105	21.21
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	45	88.03
1.3.1 Availability of latest technologies	115	20.21	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	108	13.00	3.3.1 E-Participation	115	9.55
1.3.3 Government procurement of advanced technology products	103	24.81	3.3.2 Socioeconomic gap in use of digital payments	104	39.05
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	115	0.00
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	85	0.00
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	71	63.63
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	118	4.43	4.1.1 Medium and high-tech industry	95	14.23
2.1.2 Active mobile-broadband subscriptions	112	8.69	4.1.2 High-tech exports	40	21.80
2.1.3 Use of virtual social networks	121	0.00	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	115	0.00	4.1.4 Labour productivity per employee	108	0.00
2.1.5 Adult literacy rate	89	41.35	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	120	5.77
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	72	62.60
2.2.1 Firms with website	75	34.14	4.2.3 Income inequality	89	48.16
2.2.2 Internet shopping	108	2.93	4.2.4 Healthy life expectancy at birth	109	26.74
2.2.3 Professionals	108	5.71	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	116	0.00	4.3.1 Access to basic services	114	31.06
2.2.5 Extent of staff training	89	30.57	4.3.2 Pollution	73	81.48
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	116	11.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	69	21.39
2.3.1 Government online services	115	17.69	4.3.5 Maths proficiency in schools	42	50.98
2.3.2 Publication and use of open data	88	10.51	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	104	17.21			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

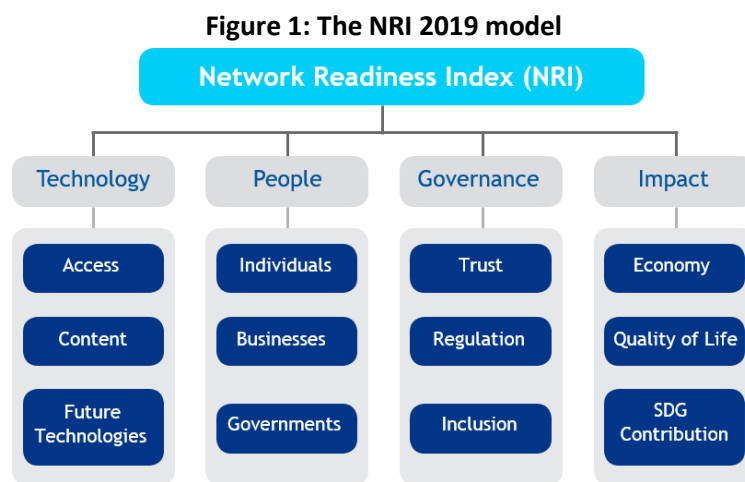
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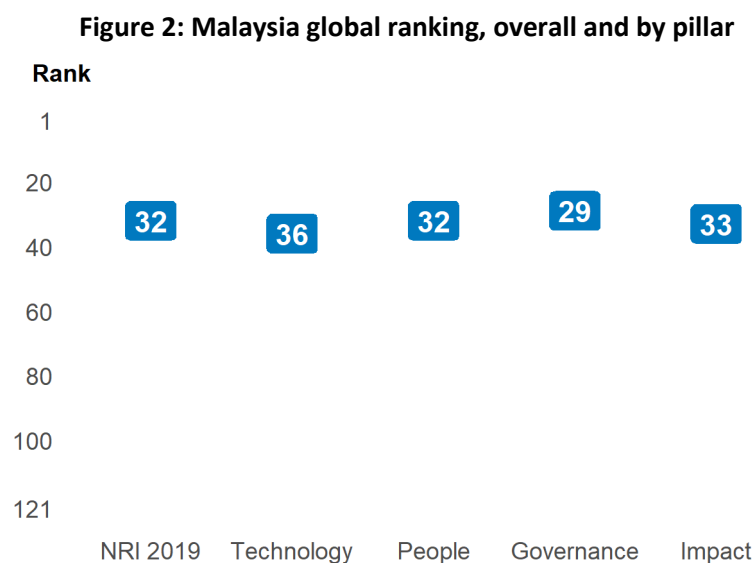
Network Readiness Index 2019 Malaysia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Malaysia

Malaysia ranks 32nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

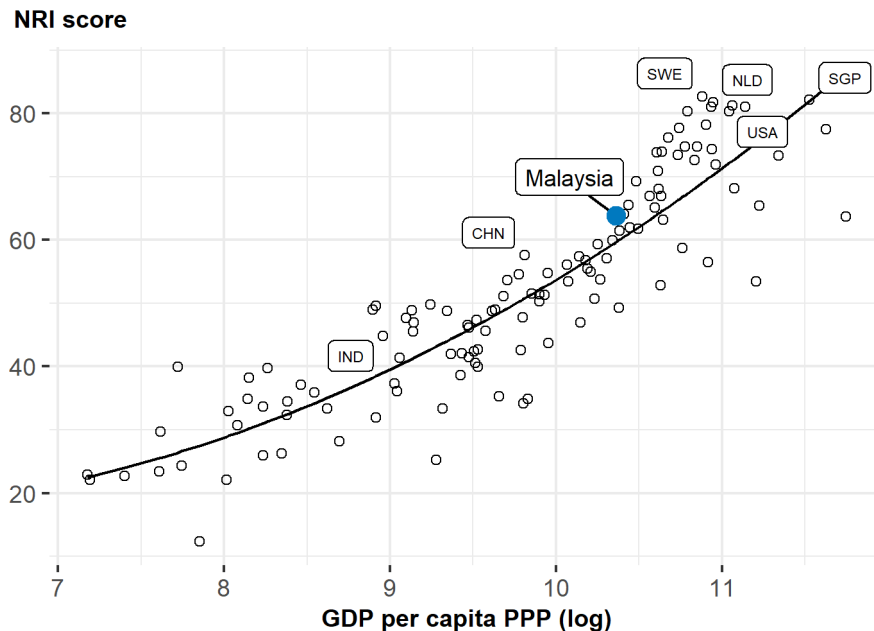
Table 1: Malaysia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	15	Inclusion	41
Regulation	17	Businesses	42
Governments	22	Content	47
Future Technologies	24	Access	48
Individuals	32	Quality of Life	57
Trust	33	SDG Contribution	57

NRI score and income

Figure 3 shows the position of Malaysia 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, Malaysia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Malaysia belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Upper-middle-income countries

Malaysia is ranked 1st 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 has a higher score than the average of upper-middle-income countries in all of them.

Asia & Pacific

Malaysia is ranked 7th within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Asia & Pacific in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

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

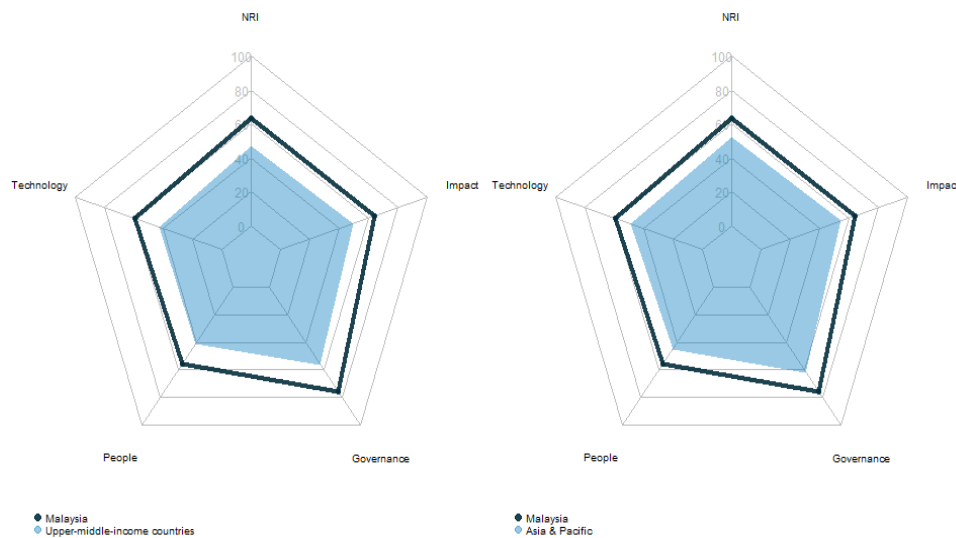


Table 2: Malaysia scores vs. averages of its income group and region, overall and by pillar

Dimension	Malaysia	Upper-middle-income countries	Asia & Pacific
NRI	63.76	47.40	52.44
Technology	59.49	42.66	48.56
People	55.62	41.07	44.85
Governance	75.92	56.24	61.84
Impact	64.01	49.62	54.50

Strongest and weakest indicators

The indicators where Malaysia performs particularly well include E-commerce legislation, High-tech exports, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Firms with website, Road safety, and Rural gap in use of digital payments.

Table 3: Top-ranked and bottom-ranked indicators of Malaysia

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Intellectual property receipts	61
High-tech exports	1	Gender gap in internet use	63
Use of clean fuels and technology	1	Fixed-broadband subscriptions	64
Government procurement of advanced technology products	4	Tertiary enrolment	65
Extent of staff training	4	Handset prices	70
ICT use and government efficiency	6	Happiness	76
Legal framework's adaptability to digital business models	7	Income inequality	77
Cybersecurity	8	Rural gap in use of digital payments	79
Use of virtual social networks	10	Firms with website	97
Company investment in emerging technology	12	Road safety	97

NRI 2019 At-A-Glance: Malaysia

Network Readiness Index

Rank: 32 (out of 121)

Score: 63.76

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	36	59.49	C. Governance pillar	29	75.92
1st sub-pillar: Access	48	74.63	1st sub-pillar: Trust	33	72.08
2nd sub-pillar: Content	47	51.83	2nd sub-pillar: Regulation	17	84.18
3rd sub-pillar: Future Technologies	24	52.03	3rd sub-pillar: Inclusion	41	71.49
B. People pillar	32	55.62	D. Impact pillar	33	64.01
1st sub-pillar: Individuals	32	62.85	1st sub-pillar: Economy	15	49.54
2nd sub-pillar: Businesses	42	40.15	2nd sub-pillar: Quality of Life	57	62.59
3rd sub-pillar: Governments	22	63.86	3rd sub-pillar: SDG Contribution	57	79.91

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	53	68.41	3.1.1 Rule of law	37	67.55
1.1.2 Handset prices	70	43.54	3.1.2 Software piracy rate	45	51.35
1.1.3 Internet access	28	86.11	3.1.3 Secure Internet servers	44	73.81
1.1.4 4G mobile network coverage	60	93.00	3.1.4 Cybersecurity	8	95.83
1.1.5 Fixed-broadband subscriptions	64	64.04	3.1.5 Online trust and safety	30	71.84
1.1.6 International Internet bandwidth	50	70.11	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	28	97.17	3.2.1 Regulatory quality	39	66.44
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	12	90.64
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	7	85.02
1.2.2 Mobile apps development	47	67.93	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	61	0.49	3.2.5 Social safety net protection	21	74.93
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	45	88.03
1.3.1 Availability of latest technologies	34	70.39	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	12	77.10	3.3.1 E-Participation	32	87.26
1.3.3 Government procurement of advanced technology products	4	86.00	3.3.2 Socioeconomic gap in use of digital payments	49	76.98
1.3.4 ICT PCT patent applications	31	27.00	3.3.3 Availability of local online content	26	79.42
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	63	56.70
1.3.6 Robot density	27	15.32	3.3.5 Rural gap in use of digital payments	79	57.10
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	35	79.47	4.1.1 Medium and high-tech industry	21	56.32
2.1.2 Active mobile-broadband subscriptions	18	45.37	4.1.2 High-tech exports	1	100.00
2.1.3 Use of virtual social networks	10	78.17	4.1.3 PCT patent applications	44	2.57
2.1.4 Tertiary enrolment	65	32.63	4.1.4 Labour productivity per employee	43	39.27
2.1.5 Adult literacy rate	55	90.33	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	37	51.15	4.2.1 Happiness	76	47.52
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	40	80.11
2.2.1 Firms with website	97	16.75	4.2.3 Income inequality	77	57.89
2.2.2 Internet shopping	35	43.46	4.2.4 Healthy life expectancy at birth	58	64.84
2.2.3 Professionals	53	31.18	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	47	44.40	4.3.1 Access to basic services	44	97.54
2.2.5 Extent of staff training	4	84.46	4.3.2 Pollution	49	88.37
2.2.6 R&D expenditure by businesses	25	20.64	4.3.3 Road safety	97	34.69
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	25	86.98
2.3.1 Government online services	27	87.69	4.3.5 Maths proficiency in schools	21	71.90
2.3.2 Publication and use of open data	54	28.06	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	6	83.22			
2.3.4 R&D expenditure by governments and higher education	22	56.49			

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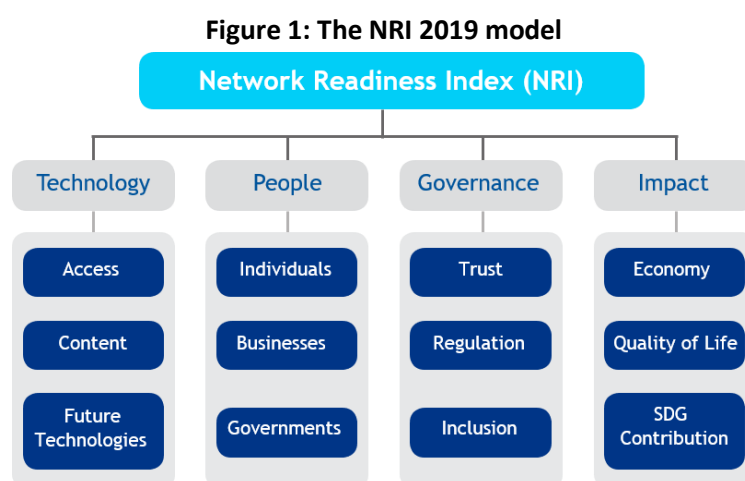
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Network Readiness Index 2019

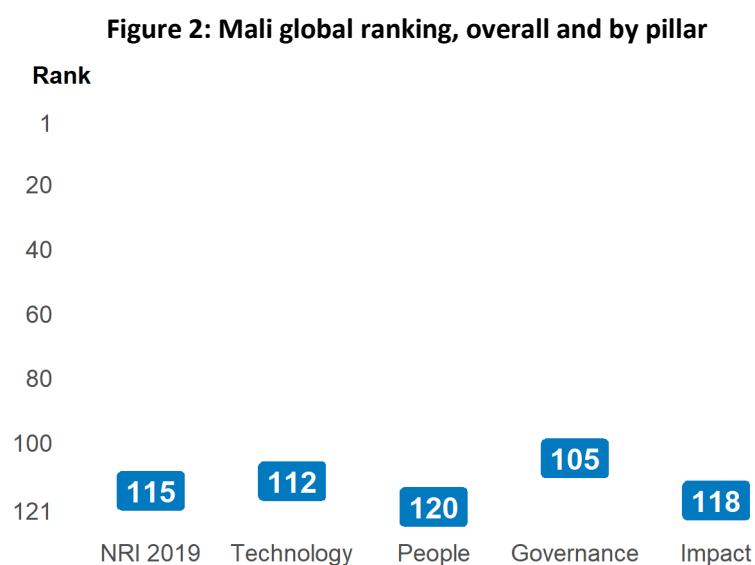
Mali

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Mali

Mali ranks 115th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

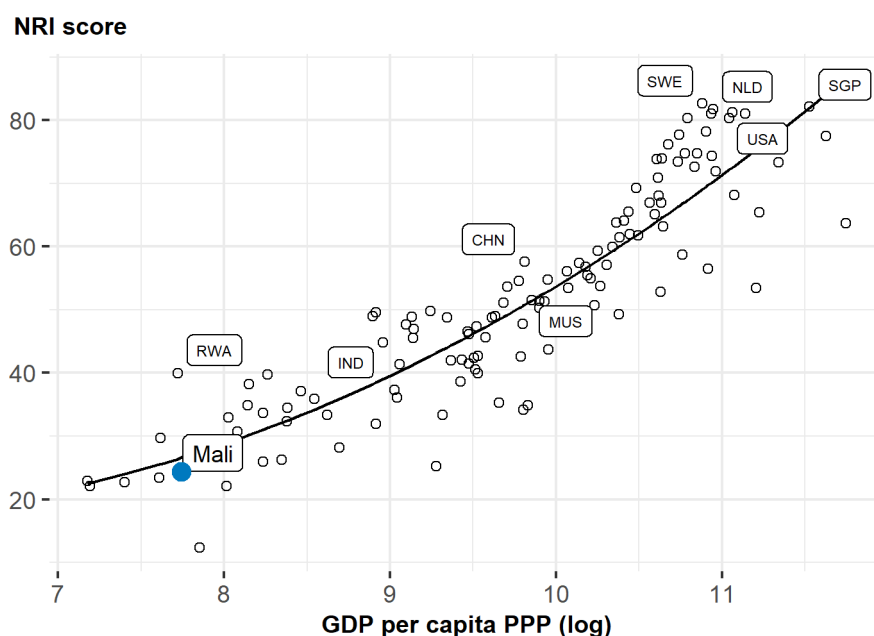
Table 1: Mali rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	77	Content	113
Regulation	99	Governments	115
Businesses	104	Access	116
Inclusion	107	Economy	118
Trust	108	SDG Contribution	118
Quality of Life	108	Individuals	121

NRI score and income

Figure 3 shows the position of Mali 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, Mali 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Mali belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Low-income countries

Mali is ranked 6th in the group of low-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: Technology. At the sub-pillar level, it outperforms low-income countries in four of the twelve sub-pillars: Content, Future Technology, Businesses and Regulation.

Africa

Mali is ranked 15th within Africa (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 Africa in one of the twelve sub-pillars: Quality of Life.

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



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

Dimension	Mali	Low-income countries	Africa
NRI	24.29	26.91	31.07
Technology	20.24	20.09	26.03
People	12.94	18.24	23.76
Governance	41.04	41.33	45.32
Impact	22.94	27.97	29.15

Strongest and weakest indicators

The indicators where Mali performs particularly well include Online trust and safety, Income inequality, and Government procurement of advanced technology products (Table 3). By contrast, the economy's weakest indicators include Internet users, Cybersecurity, and Healthy life expectancy at birth.

Table 3: Top-ranked and bottom-ranked indicators of Mali

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	21	Technicians and associate professionals	113
Income inequality	36	Government online services	114
Government procurement of advanced technology products	41	E-Participation	114
Socioeconomic gap in use of digital payments	47	Digital participation and content creation	115
ICT use and government efficiency	69	Handset prices	116
Legal framework's adaptability to digital business models	71	Mobile tariffs	117
Social safety net protection	71	Secure Internet servers	117
Reading proficiency in schools	73	Cybersecurity	118
Maths proficiency in schools	73	Healthy life expectancy at birth	118
ICT regulatory environment	78	Internet users	119

NRI 2019 At-A-Glance: Mali

Network Readiness Index

Rank: 115 (out of 121)

Score: 24.29

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	112	20.24	C. Governance pillar	105	41.04
1st sub-pillar: Access	116	21.39	1st sub-pillar: Trust	108	34.74
2nd sub-pillar: Content	113	11.62	2nd sub-pillar: Regulation	99	47.98
3rd sub-pillar: Future Technologies	77	27.70	3rd sub-pillar: Inclusion	107	40.39
B. People pillar	120	12.94	D. Impact pillar	118	22.94
1st sub-pillar: Individuals	121	4.51	1st sub-pillar: Economy	118	2.49
2nd sub-pillar: Businesses	104	15.40	2nd sub-pillar: Quality of Life	108	40.53
3rd sub-pillar: Governments	115	18.91	3rd sub-pillar: SDG Contribution	118	25.78

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	117	18.92	3.1.1 Rule of law	105	35.14
1.1.2 Handset prices	116	7.48	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	110	11.84	3.1.3 Secure Internet servers	117	19.71
1.1.4 4G mobile network coverage	111	31.00	3.1.4 Cybersecurity	118	7.24
1.1.5 Fixed-broadband subscriptions	98	6.25	3.1.5 Online trust and safety	21	76.86
1.1.6 International Internet bandwidth	111	52.87	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	100	39.31
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	112	40.17
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	71	39.42
1.2.2 Mobile apps development	105	32.88	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	94	0.01	3.2.5 Social safety net protection	71	38.69
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	78	80.31
1.3.1 Availability of latest technologies	94	36.53	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	84	27.52	3.3.1 E-Participation	114	14.01
1.3.3 Government procurement of advanced technology products	41	46.74	3.3.2 Socioeconomic gap in use of digital payments	47	78.28
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	104	24.43
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	101	44.85
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	119	3.56	4.1.1 Medium and high-tech industry	NA	NA
2.1.2 Active mobile-broadband subscriptions	110	9.95	4.1.2 High-tech exports	103	2.35
2.1.3 Use of virtual social networks	112	5.61	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	110	3.45	4.1.4 Labour productivity per employee	102	2.63
2.1.5 Adult literacy rate	95	0.00	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	106	28.29
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	94	48.30
2.2.1 Firms with website	79	30.64	4.2.3 Income inequality	36	78.95
2.2.2 Internet shopping	104	3.32	4.2.4 Healthy life expectancy at birth	118	6.59
2.2.3 Professionals	107	6.14	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	113	4.15	4.3.1 Access to basic services	108	45.96
2.2.5 Extent of staff training	80	32.75	4.3.2 Pollution	93	71.28
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	95	36.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	73	0.92
2.3.1 Government online services	114	18.46	4.3.5 Maths proficiency in schools	73	0.29
2.3.2 Publication and use of open data	99	2.46	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	69	41.38			
2.3.4 R&D expenditure by governments and higher education	84	13.35			

* Confidential data

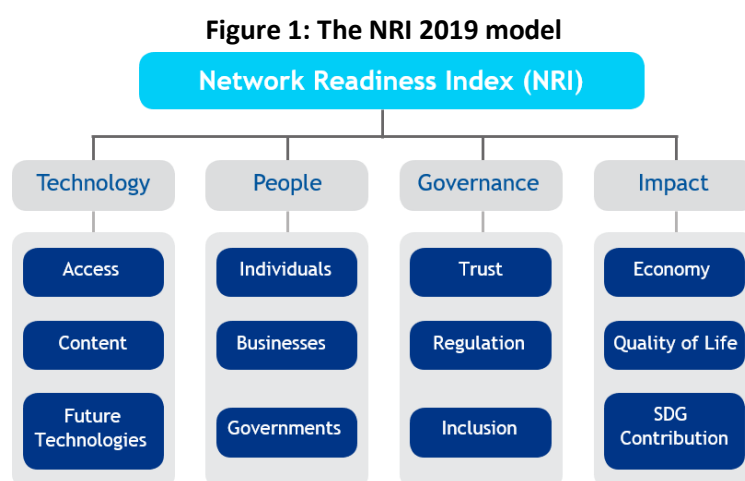
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Network Readiness Index 2019

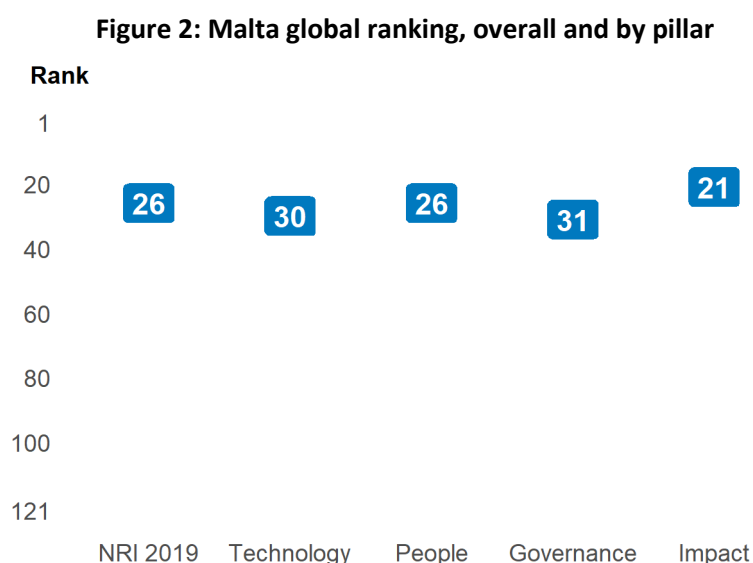
Malta

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Malta

Malta ranks 26th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

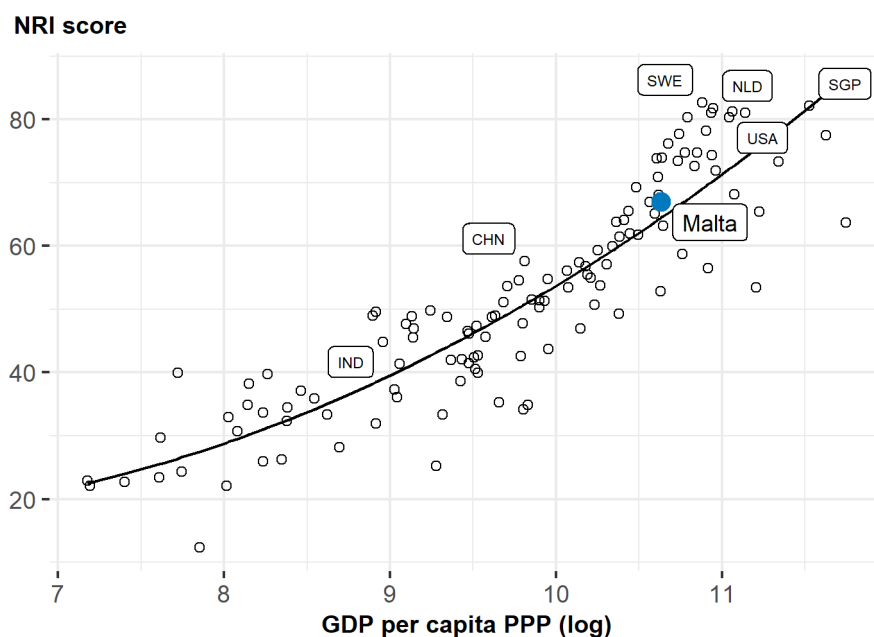
Table 1: Malta rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	11	Access	31
Individuals	23	Future Technologies	33
Content	24	Governments	34
Economy	24	Inclusion	36
Regulation	26	Trust	41
Businesses	27	SDG Contribution	44

NRI score and income

Figure 3 shows the position of Malta 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, Malta 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Malta belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Malta is ranked 26th 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 five of the twelve sub-pillars: Content, Individuals, Regulation, Economy and Quality of Life.

Europe

Malta is ranked 18th within Europe (Figure 4, right panel). It has a score above the regional average in three of the four pillars: Score, Technology, People and Impact. With regard to sub-pillars, it outperforms the average in Europe in nine of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Regulation, Inclusion, Economy and Quality of Life.

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



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

Dimension	Malta	High-income countries	Europe
NRI	66.94	68.12	65.20
Technology	63.86	66.07	63.08
People	58.98	61.07	57.50
Governance	73.58	77.07	73.99
Impact	71.32	68.29	66.24

Strongest and weakest indicators

The indicators where Malta performs particularly well include 4G mobile network coverage, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Ease of doing business, Cybersecurity, and R&D expenditure by governments and higher education.

Table 3: Top-ranked and bottom-ranked indicators of Malta

Strongest indicators	Rank	Weakest indicators	Rank
4G mobile network coverage	1	Extent of staff training	41
E-commerce legislation	1	R&D expenditure by businesses	44
Use of clean fuels and technology	1	Medium and high-tech industry	44
Fixed-broadband subscriptions	2	Availability of local online content	47
Use of virtual social networks	4	Adult literacy rate	51
ICT regulatory environment	5	Tertiary enrolment	60
High-tech exports	7	Mobile tariffs	66
International Internet bandwidth	8	R&D expenditure by governments and higher education	74
Intellectual property receipts	9	Cybersecurity	80
Access to basic services	9	Ease of doing business	81

NRI 2019 At-A-Glance: Malta

Network Readiness Index

Rank: 26 (out of 121)

Score: 66.94

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	30	63.86	C. Governance pillar	31	73.58
1st sub-pillar: Access	31	80.50	1st sub-pillar: Trust	41	67.92
2nd sub-pillar: Content	24	67.55	2nd sub-pillar: Regulation	26	78.95
3rd sub-pillar: Future Technologies	33	43.52	3rd sub-pillar: Inclusion	36	73.86
B. People pillar	26	58.98	D. Impact pillar	21	71.32
1st sub-pillar: Individuals	23	66.86	1st sub-pillar: Economy	24	41.18
2nd sub-pillar: Businesses	27	52.76	2nd sub-pillar: Quality of Life	11	86.59
3rd sub-pillar: Governments	34	57.33	3rd sub-pillar: SDG Contribution	44	86.20

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	66	61.50	3.1.1 Rule of law	27	77.37
1.1.2 Handset prices	40	58.24	3.1.2 Software piracy rate	32	62.16
1.1.3 Internet access	33	83.34	3.1.3 Secure Internet servers	31	81.72
1.1.4 4G mobile network coverage	1	100.00	3.1.4 Cybersecurity	80	50.44
1.1.5 Fixed-broadband subscriptions	2	99.73	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	8	80.19	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	21	80.86
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	81	63.51
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	31	60.40
1.2.2 Mobile apps development	15	86.35	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	9	14.03	3.2.5 Social safety net protection	24	71.61
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	5	97.30
1.3.1 Availability of latest technologies	24	77.65	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	38	49.75	3.3.1 E-Participation	39	82.80
1.3.3 Government procurement of advanced technology products	26	54.64	3.3.2 Socioeconomic gap in use of digital payments	34	83.08
1.3.4 ICT PCT patent applications	28	31.15	3.3.3 Availability of local online content	47	61.31
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	19	67.14
1.3.6 Robot density	34	11.58	3.3.5 Rural gap in use of digital payments	33	74.97
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	34	79.69	4.1.1 Medium and high-tech industry	44	41.44
2.1.2 Active mobile-broadband subscriptions	23	42.84	4.1.2 High-tech exports	7	61.04
2.1.3 Use of virtual social networks	4	88.57	4.1.3 PCT patent applications	27	9.80
2.1.4 Tertiary enrolment	60	35.19	4.1.4 Labour productivity per employee	27	52.44
2.1.5 Adult literacy rate	51	91.52	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	19	63.34	4.2.1 Happiness	19	80.24
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	13	92.34
2.2.1 Firms with website	12	83.99	4.2.3 Income inequality	18	88.42
2.2.2 Internet shopping	25	59.74	4.2.4 Healthy life expectancy at birth	18	85.35
2.2.3 Professionals	30	46.85	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	20	65.94	4.3.1 Access to basic services	9	99.97
2.2.5 Extent of staff training	41	51.36	4.3.2 Pollution	35	90.70
2.2.6 R&D expenditure by businesses	44	8.70	4.3.3 Road safety	22	89.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	33	73.49
2.3.1 Government online services	36	82.31	4.3.5 Maths proficiency in schools	30	63.69
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	20	71.88			
2.3.4 R&D expenditure by governments and higher education	74	17.80			

* Confidential data

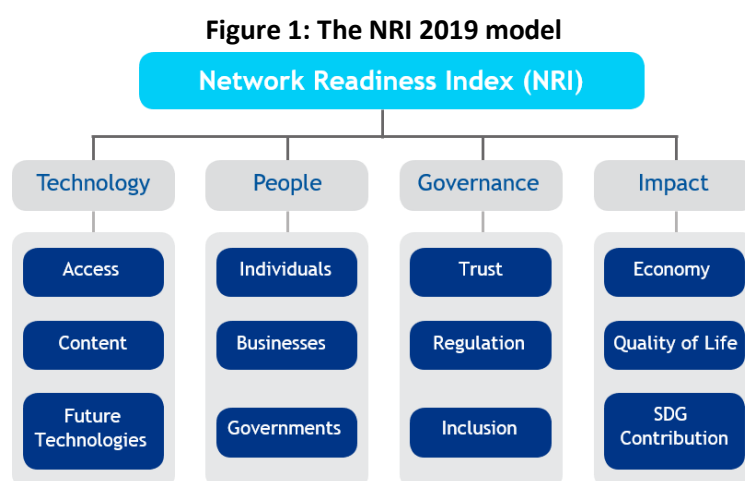
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Network Readiness Index 2019

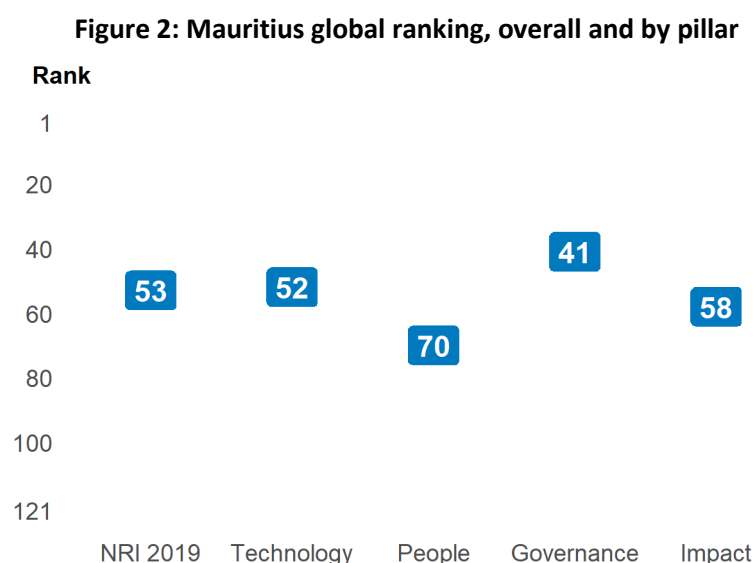
Mauritius

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Mauritius

Mauritius ranks 53rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

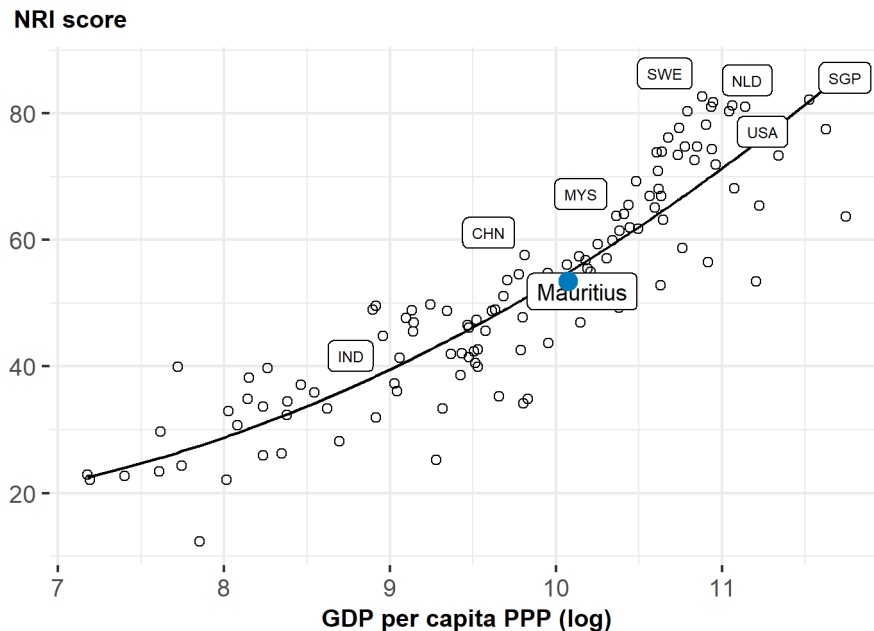
Table 1: Mauritius rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Trust	32	Inclusion	60
SDG Contribution	40	Access	63
Future Technologies	44	Businesses	68
Regulation	45	Governments	69
Quality of Life	49	Individuals	73
Content	60	Economy	100

NRI score and income

Figure 3 shows the position of Mauritius 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, Mauritius 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Mauritius belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Upper-middle-income countries

Mauritius is ranked 9th 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 three of the four pillars: Score, Technology, Governance and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in nine of the twelve sub-pillars: Access, Content, Future Technology, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

Africa

Mauritius is ranked 1st within Africa (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Africa in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

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

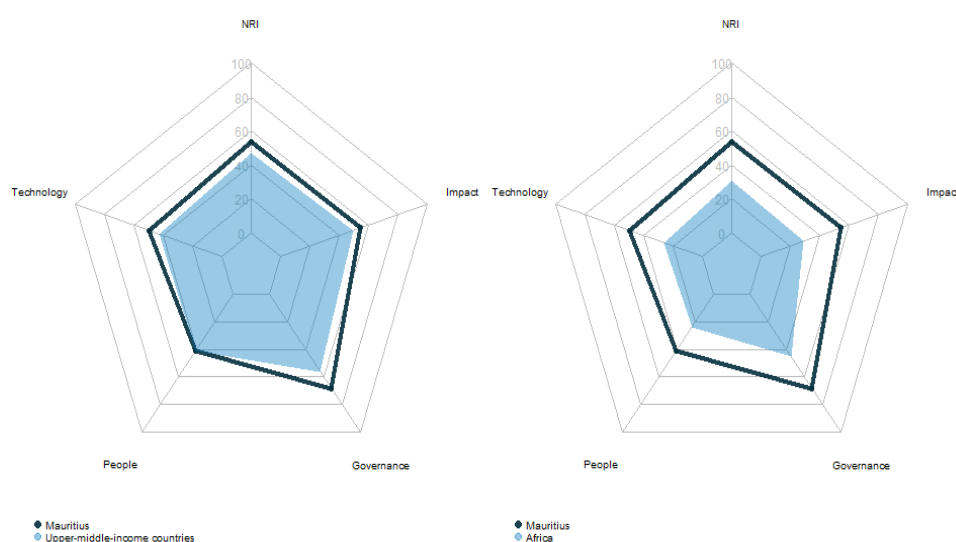


Table 2: Mauritius scores vs. averages of its income group and region, overall and by pillar

Dimension	Mauritius	Upper-middle-income countries	Africa
NRI	53.40	47.40	31.07
Technology	49.88	42.66	26.03
People	40.92	41.07	23.76
Governance	68.49	56.24	45.32
Impact	54.30	49.62	29.15

Strongest and weakest indicators

The indicators where Mauritius performs particularly well include Use of clean fuels and technology, Ease of doing business, and Cybersecurity (Table 3). By contrast, the economy's weakest indicators include Medium and high-tech industry, Firms with website, and High-tech exports.

Table 3: Top-ranked and bottom-ranked indicators of Mauritius

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Healthy life expectancy at birth	71
Ease of doing business	13	ICT regulatory environment	75
Cybersecurity	15	Intellectual property receipts	76
International Internet bandwidth	21	Company investment in emerging technology	78
4G mobile network coverage	24	Active mobile-broadband subscriptions	80
Regulatory quality	31	R&D expenditure by businesses	80
Pollution	33	Internet users	81
Rule of law	34	Firms with website	91
Use of virtual social networks	38	High-tech exports	91
Extent of staff training	38	Medium and high-tech industry	98

NRI 2019 At-A-Glance: Mauritius

Network Readiness Index

Rank: 53 (out of 121)

Score: 53.40

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	52	49.88	C. Governance pillar	41	68.49
1st sub-pillar: Access	63	65.29	1st sub-pillar: Trust	32	73.01
2nd sub-pillar: Content	60	47.78	2nd sub-pillar: Regulation	45	69.53
3rd sub-pillar: Future Technologies	44	36.56	3rd sub-pillar: Inclusion	60	62.93
B. People pillar	70	40.92	D. Impact pillar	58	54.30
1st sub-pillar: Individuals	73	51.83	1st sub-pillar: Economy	100	8.57
2nd sub-pillar: Businesses	68	28.05	2nd sub-pillar: Quality of Life	49	65.89
3rd sub-pillar: Governments	69	42.88	3rd sub-pillar: SDG Contribution	40	88.44

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	68	60.96	3.1.1 Rule of law	34	71.11
1.1.2 Handset prices	58	47.59	3.1.2 Software piracy rate	46	50.00
1.1.3 Internet access	63	67.71	3.1.3 Secure Internet servers	40	76.51
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	15	94.41
1.1.5 Fixed-broadband subscriptions	45	80.82	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	21	74.20	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	53	26.74	3.2.1 Regulatory quality	31	74.04
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	13	90.63
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	54	45.50
1.2.2 Mobile apps development	63	61.94	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	76	0.15	3.2.5 Social safety net protection	48	51.14
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	75	80.89
1.3.1 Availability of latest technologies	58	55.07	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	78	29.46	3.3.1 E-Participation	69	64.97
1.3.3 Government procurement of advanced technology products	53	43.54	3.3.2 Socioeconomic gap in use of digital payments	53	73.97
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	70	50.43
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	69	53.85
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	47	71.42
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	81	54.31	4.1.1 Medium and high-tech industry	98	12.23
2.1.2 Active mobile-broadband subscriptions	80	24.30	4.1.2 High-tech exports	91	4.92
2.1.3 Use of virtual social networks	38	64.66	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	69	29.29	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	62	86.59	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	58	58.83
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	43	78.35
2.2.1 Firms with website	91	22.46	4.2.3 Income inequality	67	64.47
2.2.2 Internet shopping	62	18.46	4.2.4 Healthy life expectancy at birth	71	61.90
2.2.3 Professionals	68	24.11	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	46	48.15	4.3.1 Access to basic services	48	96.95
2.2.5 Extent of staff training	38	54.68	4.3.2 Pollution	33	91.19
2.2.6 R&D expenditure by businesses	80	0.43	4.3.3 Road safety	58	65.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	63	70.00	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	58	26.30	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	48	49.98			
2.3.4 R&D expenditure by governments and higher education	62	25.26			

* Confidential data

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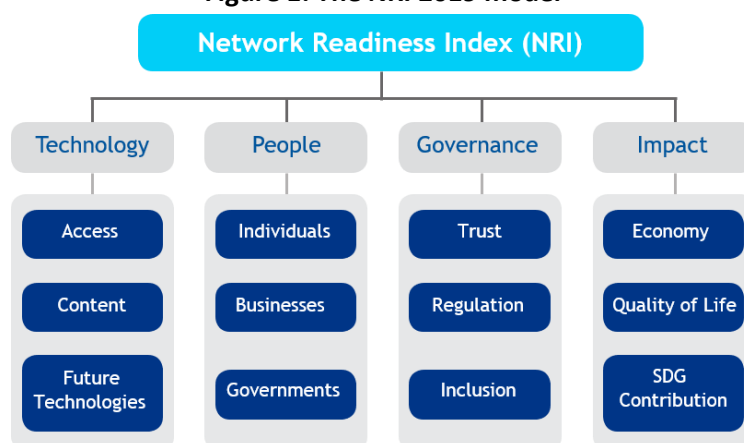
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Network Readiness Index 2019

Mexico

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

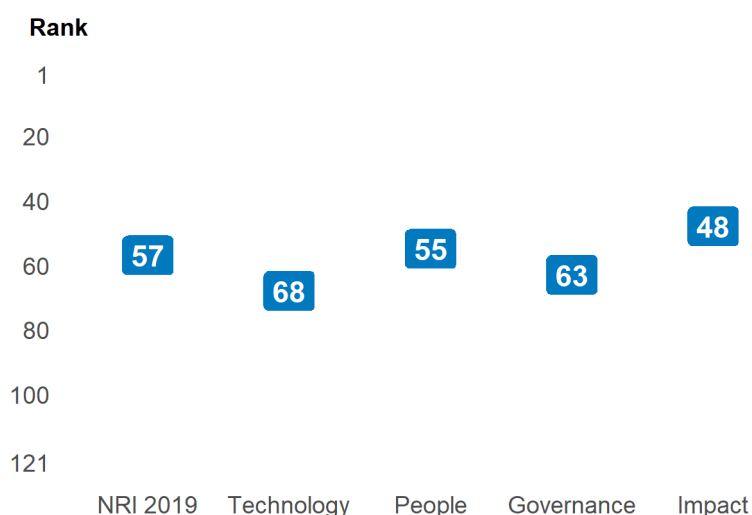
Figure 1: The NRI 2019 model



Global NRI position of Mexico

Mexico ranks 57th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Mexico global ranking, overall and by pillar



Performance at sub-pillar level

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

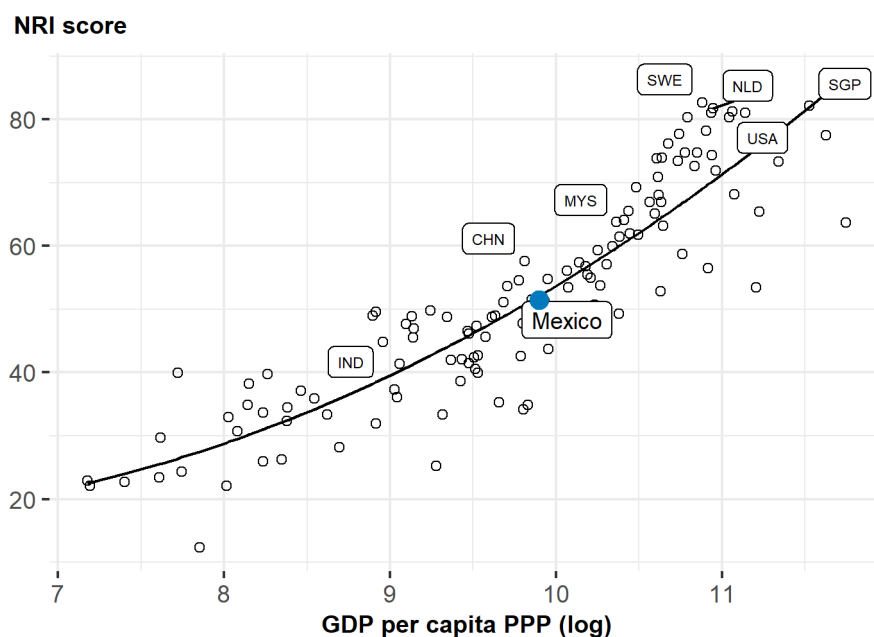
Table 1: Mexico rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	28	Quality of Life	62
Economy	38	Content	67
Regulation	50	Access	70
Trust	59	Future Technologies	80
SDG Contribution	59	Inclusion	85
Individuals	62	Businesses	89

NRI score and income

Figure 3 shows the position of Mexico 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, Mexico 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Mexico belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Mexico is ranked 11th 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 nine of the twelve sub-pillars: Access, Future Technology, Individuals, Governments, Trust, Regulation, Economy, Quality of Life and SDG Contribution.

The Americas

Mexico is ranked 6th within The Americas (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in The Americas in seven of the twelve sub-pillars: Access, Individuals, Governments, Trust, Regulation, Economy and SDG Contribution.

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



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

Dimension	Mexico	Upper-middle-income countries	The Americas
NRI	51.44	47.40	49.08
Technology	43.29	42.66	43.12
People	45.73	41.07	43.32
Governance	59.87	56.24	57.13
Impact	56.86	49.62	52.73

Strongest and weakest indicators

The indicators where Mexico performs particularly well include E-commerce legislation, Publication and use of open data, and Online trust and safety (Table 3). By contrast, the economy's weakest indicators include Rural gap in use of digital payments, Rule of law, Socioeconomic gap in use of digital payments, and Income inequality.

Table 3: Top-ranked and bottom-ranked indicators of Mexico

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Internet shopping	78
Publication and use of open data	11	Mobile tariffs	79
Online trust and safety	15	Firms with website	81
E-Participation	17	Secure Internet servers	82
High-tech exports	18	4G mobile network coverage	85
Government online services	22	Intellectual property receipts	92
Maths proficiency in schools	23	Socioeconomic gap in use of digital payments	94
Medium and high-tech industry	25	Income inequality	94
Happiness	26	Rule of law	100
ICT regulatory environment	30	Rural gap in use of digital payments	111

NRI 2019 At-A-Glance: Mexico

Network Readiness Index

Rank: 57 (out of 121)

Score: 51.44

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	68	43.29	C. Governance pillar	63	59.87
1st sub-pillar: Access	70	61.22	1st sub-pillar: Trust	59	57.19
2nd sub-pillar: Content	67	41.37	2nd sub-pillar: Regulation	50	67.60
3rd sub-pillar: Future Technologies	80	27.28	3rd sub-pillar: Inclusion	85	54.83
B. People pillar	55	45.73	D. Impact pillar	48	56.86
1st sub-pillar: Individuals	62	55.43	1st sub-pillar: Economy	38	30.07
2nd sub-pillar: Businesses	89	21.99	2nd sub-pillar: Quality of Life	62	61.72
3rd sub-pillar: Governments	28	59.77	3rd sub-pillar: SDG Contribution	59	78.80

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	79	56.51	3.1.1 Rule of law	100	37.97
1.1.2 Handset prices	36	60.23	3.1.2 Software piracy rate	42	54.05
1.1.3 Internet access	77	49.71	3.1.3 Secure Internet servers	82	46.22
1.1.4 4G mobile network coverage	85	70.91	3.1.4 Cybersecurity	65	66.89
1.1.5 Fixed-broadband subscriptions	40	86.62	3.1.5 Online trust and safety	15	80.82
1.1.6 International Internet bandwidth	77	65.96	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	49	38.63	3.2.1 Regulatory quality	60	54.74
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	56	74.51
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	50	47.01
1.2.2 Mobile apps development	71	54.76	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	92	0.01	3.2.5 Social safety net protection	73	37.82
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	30	91.51
1.3.1 Availability of latest technologies	51	58.81	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	64	34.63	3.3.1 E-Participation	17	93.63
1.3.3 Government procurement of advanced technology products	77	34.46	3.3.2 Socioeconomic gap in use of digital payments	94	44.00
1.3.4 ICT PCT patent applications	57	5.56	3.3.3 Availability of local online content	62	53.30
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	51	59.21
1.3.6 Robot density	33	12.04	3.3.5 Rural gap in use of digital payments	111	24.03
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	69	62.29	4.1.1 Medium and high-tech industry	25	53.10
2.1.2 Active mobile-broadband subscriptions	73	26.21	4.1.2 High-tech exports	18	39.87
2.1.3 Use of virtual social networks	32	66.74	4.1.3 PCT patent applications	58	0.73
2.1.4 Tertiary enrolment	70	29.02	4.1.4 Labour productivity per employee	57	26.57
2.1.5 Adult literacy rate	46	92.88	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	26	72.74
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	68	66.60
2.2.1 Firms with website	81	29.66	4.2.3 Income inequality	94	38.68
2.2.2 Internet shopping	78	8.94	4.2.4 Healthy life expectancy at birth	45	68.86
2.2.3 Professionals	69	23.57	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	72	30.46	4.3.1 Access to basic services	61	93.74
2.2.5 Extent of staff training	71	35.57	4.3.2 Pollution	65	83.81
2.2.6 R&D expenditure by businesses	55	3.77	4.3.3 Road safety	53	67.50
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	40	67.21
2.3.1 Government online services	22	91.54	4.3.5 Maths proficiency in schools	23	70.57
2.3.2 Publication and use of open data	11	73.45	4.3.6 Use of clean fuels and technology	75	90.00
2.3.3 ICT use and government efficiency	54	46.90			
2.3.4 R&D expenditure by governments and higher education	57	27.18			

* Confidential data

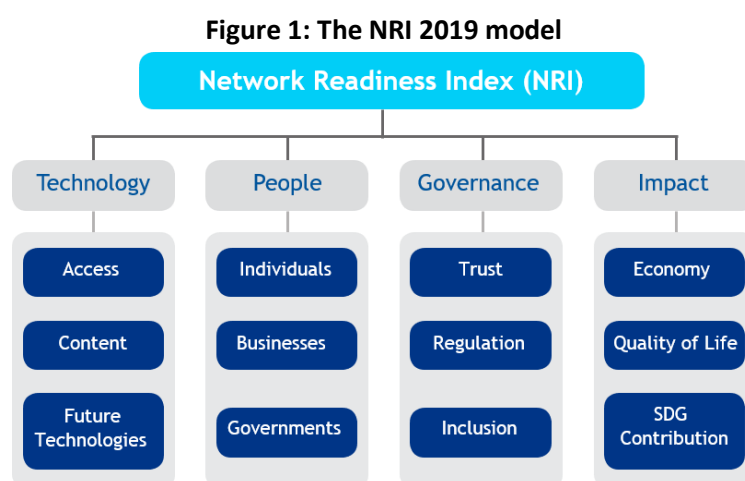
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Network Readiness Index 2019

Moldova

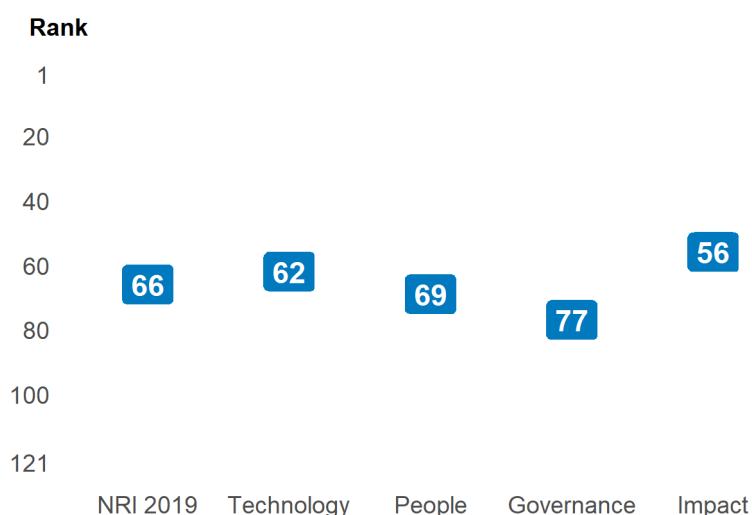
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Moldova

Moldova ranks 66th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Moldova global ranking, overall and by pillar



Performance at sub-pillar level

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

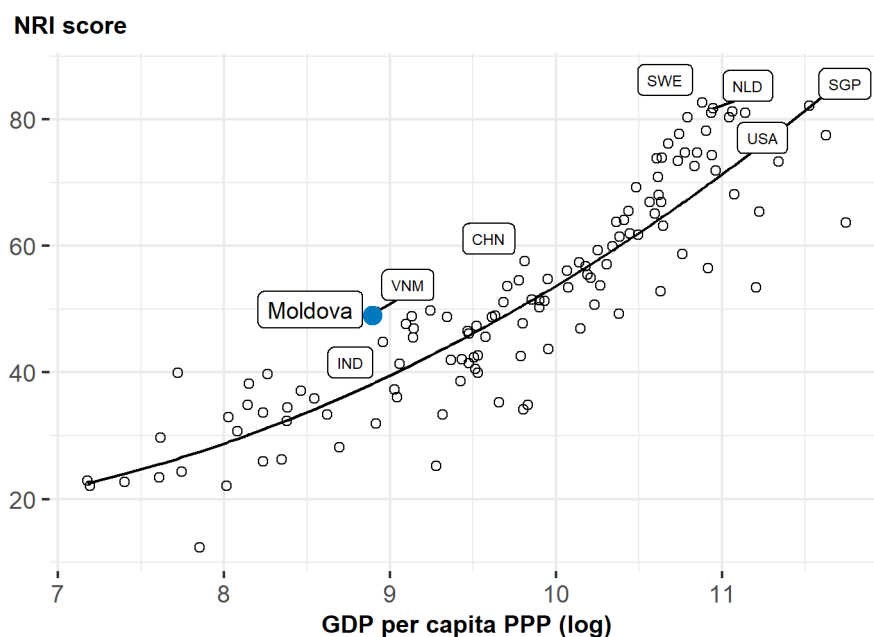
Table 1: Moldova rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	42	Inclusion	71
SDG Contribution	46	Individuals	77
Access	56	Trust	81
Content	58	Regulation	81
Governments	65	Economy	96
Businesses	71	Future Technologies	113

NRI score and income

Figure 3 shows the position of Moldova 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, Moldova 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Moldova belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Lower-middle-income countries

Moldova is ranked 2nd 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 each of the four pillars. At the sub-pillar level, it outperforms lower-middle-income countries in ten of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

Europe

Moldova is ranked 36th within Europe (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 Moldova against its income group and region, overall and by pillar

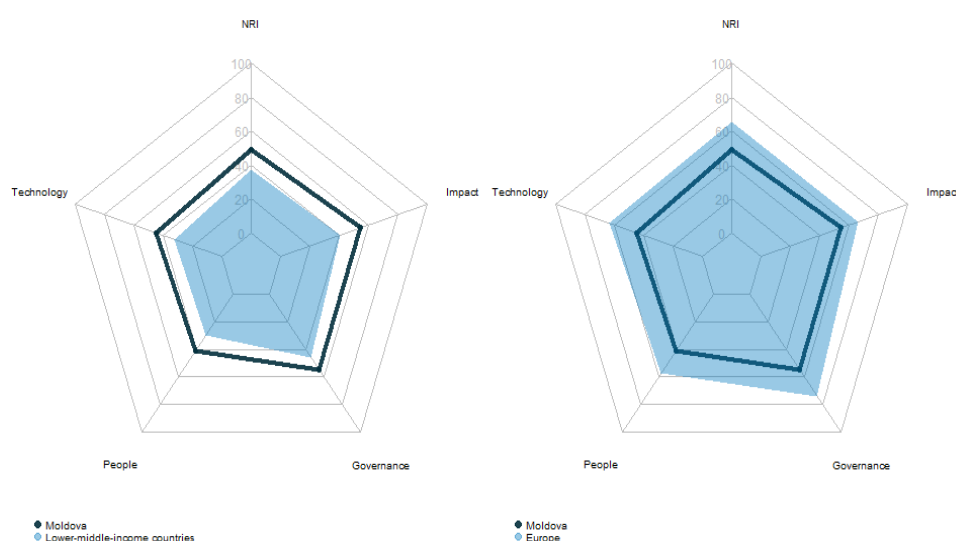


Table 2: Moldova scores vs. averages of its income group and region, overall and by pillar

Dimension	Moldova	Lower-middle-income countries	Europe
NRI	48.93	37.18	65.20
Technology	45.02	32.15	63.08
People	40.93	30.04	57.50
Governance	55.19	46.17	73.99
Impact	54.58	40.35	66.24

Strongest and weakest indicators

The indicators where Moldova performs particularly well include Income inequality, Adult literacy rate, and Fixed-broadband subscriptions (Table 3). By contrast, the economy's weakest indicators include Government procurement of advanced technology products, Company investment in emerging technology, and Social safety net protection.

Table 3: Top-ranked and bottom-ranked indicators of Moldova

Strongest indicators	Rank	Weakest indicators	Rank
Income inequality	4	Socioeconomic gap in use of digital payments	89
Adult literacy rate	14	Handset prices	90
Fixed-broadband subscriptions	18	High-tech exports	92
International Internet bandwidth	29	Software piracy rate	93
Internet access in schools	30	Access to basic services	94
Publication and use of open data	32	Use of virtual social networks	97
ICT regulatory environment	34	Extent of staff training	106
E-Participation	37	Social safety net protection	107
Road safety	41	Company investment in emerging technology	109
4G mobile network coverage	45	Government procurement of advanced technology products	113

NRI 2019 At-A-Glance: Moldova

Network Readiness Index

Rank: 66 (out of 121)

Score: 48.93

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	62	45.02	C. Governance pillar	77	55.19
1st sub-pillar: Access	56	70.93	1st sub-pillar: Trust	81	47.70
2nd sub-pillar: Content	58	48.21	2nd sub-pillar: Regulation	81	58.18
3rd sub-pillar: Future Technologies	113	15.94	3rd sub-pillar: Inclusion	71	59.71
B. People pillar	69	40.93	D. Impact pillar	56	54.58
1st sub-pillar: Individuals	77	51.44	1st sub-pillar: Economy	96	9.44
2nd sub-pillar: Businesses	71	27.11	2nd sub-pillar: Quality of Life	42	68.63
3rd sub-pillar: Governments	65	44.24	3rd sub-pillar: SDG Contribution	46	85.65

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	74	58.54	3.1.1 Rule of law	88	43.90
1.1.2 Handset prices	90	34.50	3.1.2 Software piracy rate	93	8.11
1.1.3 Internet access	79	47.23	3.1.3 Secure Internet servers	49	68.29
1.1.4 4G mobile network coverage	45	97.00	3.1.4 Cybersecurity	54	70.50
1.1.5 Fixed-broadband subscriptions	18	95.63	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	29	73.09	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	30	90.52	3.2.1 Regulatory quality	73	50.33
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	47	78.11
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	81	35.83
1.2.2 Mobile apps development	70	56.67	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	45	0.85	3.2.5 Social safety net protection	107	20.02
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	34	89.77
1.3.1 Availability of latest technologies	81	42.28	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	109	12.70	3.3.1 E-Participation	37	84.08
1.3.3 Government procurement of advanced technology products	113	18.77	3.3.2 Socioeconomic gap in use of digital payments	89	49.27
1.3.4 ICT PCT patent applications	45	12.66	3.3.3 Availability of local online content	58	55.30
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	76	45.86
1.3.6 Robot density	66	0.10	3.3.5 Rural gap in use of digital payments	68	64.02
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	49	73.81	4.1.1 Medium and high-tech industry	84	20.70
2.1.2 Active mobile-broadband subscriptions	70	27.36	4.1.2 High-tech exports	92	4.79
2.1.3 Use of virtual social networks	97	28.27	4.1.3 PCT patent applications	53	0.95
2.1.4 Tertiary enrolment	71	28.72	4.1.4 Labour productivity per employee	84	11.34
2.1.5 Adult literacy rate	14	99.05	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	65	54.68
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	63	68.36
2.2.1 Firms with website	58	51.92	4.2.3 Income inequality	4	97.63
2.2.2 Internet shopping	54	23.53	4.2.4 Healthy life expectancy at birth	85	53.85
2.2.3 Professionals	46	36.14	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	79	25.53	4.3.1 Access to basic services	94	77.16
2.2.5 Extent of staff training	106	24.07	4.3.2 Pollution	48	88.45
2.2.6 R&D expenditure by businesses	69	1.45	4.3.3 Road safety	41	78.12
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	53	74.61	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	32	43.68	4.3.6 Use of clean fuels and technology	66	98.89
2.3.3 ICT use and government efficiency	80	37.30			
2.3.4 R&D expenditure by governments and higher education	67	21.35			

* Confidential data

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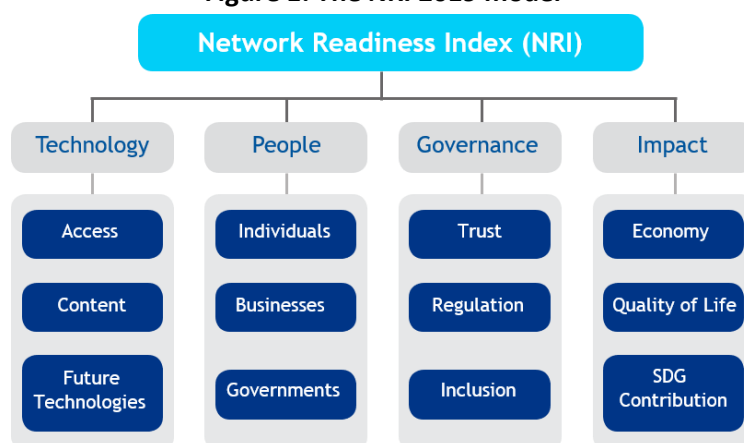
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Network Readiness Index 2019

Mongolia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

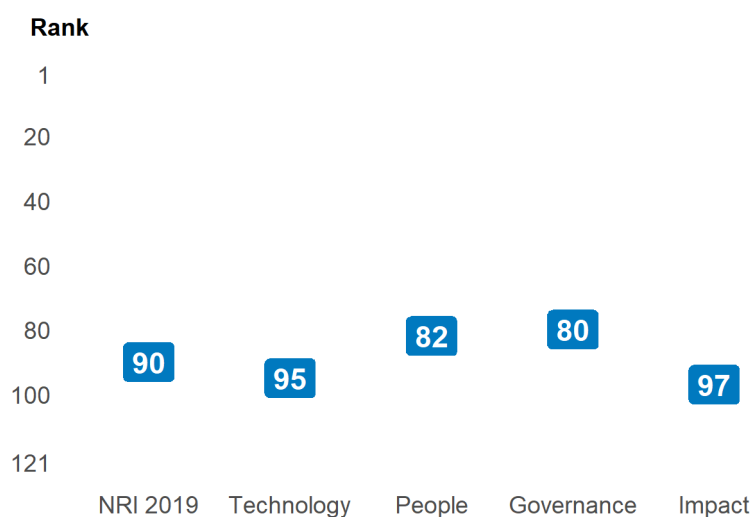
Figure 1: The NRI 2019 model



Global NRI position of Mongolia

Mongolia ranks 90th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Mongolia global ranking, overall and by pillar



Performance at sub-pillar level

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

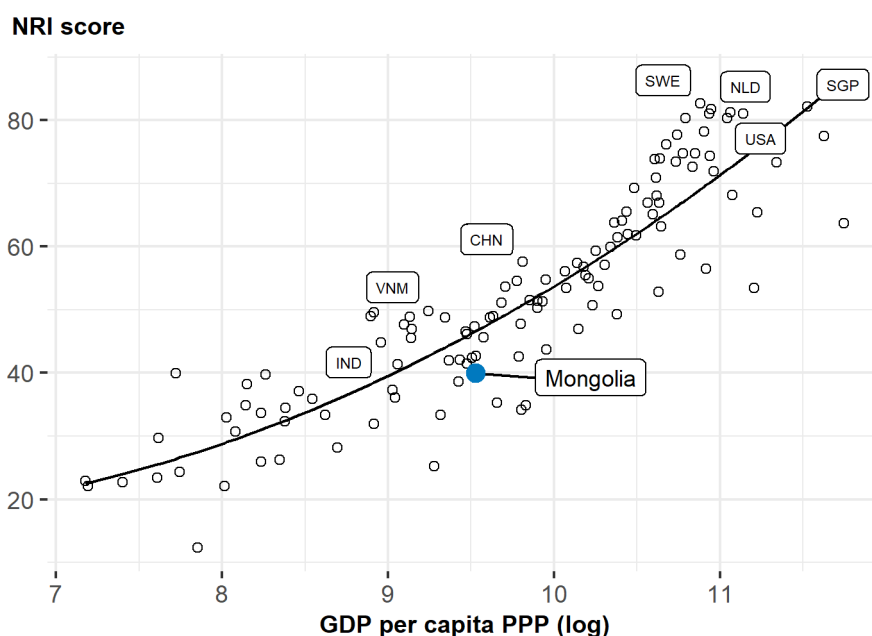
Table 1: Mongolia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Inclusion	33	SDG Contribution	94
Individuals	71	Access	96
Content	79	Businesses	98
Quality of Life	86	Future Technologies	100
Trust	89	Regulation	105
Governments	91	Economy	114

NRI score and income

Figure 3 shows the position of Mongolia 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, Mongolia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Mongolia belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

Mongolia is ranked 9th 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 two of the four pillars: Score, People and Governance. At the sub-pillar level, it outperforms lower-middle-income countries in seven of the twelve sub-pillars: Content, Individuals, Governments, Trust, Inclusion, Quality of Life and SDG Contribution.

Asia & Pacific

Mongolia is ranked 16th within Asia & Pacific (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 Asia & Pacific in two of the twelve sub-pillars: Individuals and Inclusion.

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

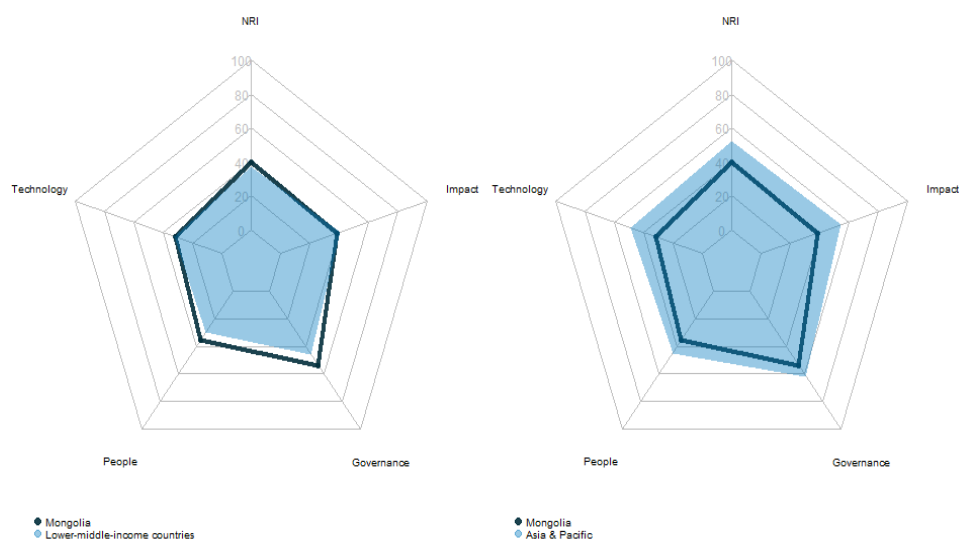


Table 2: Mongolia scores vs. averages of its income group and region, overall and by pillar

Dimension	Mongolia	Lower-middle-income countries	Asia & Pacific
NRI	39.91	37.18	52.44
Technology	31.90	32.15	48.56
People	35.79	30.04	44.85
Governance	53.78	46.17	61.84
Impact	38.18	40.35	54.50

Strongest and weakest indicators

The indicators where Mongolia performs particularly well include Gender gap in internet use, Rural gap in use of digital payments, and Adult literacy rate (Table 3). By contrast, the economy's weakest indicators include Fixed-broadband subscriptions, E-commerce legislation, and Medium and high-tech industry.

Table 3: Top-ranked and bottom-ranked indicators of Mongolia

Strongest indicators	Rank	Weakest indicators	Rank
Gender gap in internet use	1	Freedom to make life choices	102
Rural gap in use of digital payments	12	Access to basic services	102
Adult literacy rate	25	Internet access	103
Socioeconomic gap in use of digital payments	26	Legal framework's adaptability to digital business models	103
Use of virtual social networks	27	Pollution	104
Income inequality	29	Technicians and associate professionals	105
Internet access in schools	36	Internet users	108
Tertiary enrolment	38	Fixed-broadband subscriptions	110
Professionals	38	E-commerce legislation	110
Active mobile-broadband subscriptions	54	Medium and high-tech industry	110

NRI 2019 At-A-Glance: Mongolia

Network Readiness Index

Rank: 90 (out of 121)

Score: 39.91

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	95	31.90	C. Governance pillar	80	53.78
1st sub-pillar: Access	96	39.67	1st sub-pillar: Trust	89	42.63
2nd sub-pillar: Content	79	34.86	2nd sub-pillar: Regulation	105	44.67
3rd sub-pillar: Future Technologies	100	21.16	3rd sub-pillar: Inclusion	33	74.05
B. People pillar	82	35.79	D. Impact pillar	97	38.18
1st sub-pillar: Individuals	71	52.50	1st sub-pillar: Economy	114	5.41
2nd sub-pillar: Businesses	98	19.49	2nd sub-pillar: Quality of Life	86	54.30
3rd sub-pillar: Governments	91	35.38	3rd sub-pillar: SDG Contribution	94	54.83

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	86	50.51	3.1.1 Rule of law	75	47.26
1.1.2 Handset prices	97	30.61	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	103	17.84	3.1.3 Secure Internet servers	57	63.41
1.1.4 4G mobile network coverage	101	45.00	3.1.4 Cybersecurity	83	48.90
1.1.5 Fixed-broadband subscriptions	110	0.58	3.1.5 Online trust and safety	87	10.96
1.1.6 International Internet bandwidth	92	62.59	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	36	70.54	3.2.1 Regulatory quality	68	50.76
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	74	66.40
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	103	26.15
1.2.2 Mobile apps development	62	62.55	3.2.4 E-commerce legislation	110	25.00
1.2.3 Intellectual property receipts	78	0.12	3.2.5 Social safety net protection	83	31.77
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	97	67.96
1.3.1 Availability of latest technologies	89	40.66	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	85	27.26	3.3.1 E-Participation	62	70.07
1.3.3 Government procurement of advanced technology products	97	27.35	3.3.2 Socioeconomic gap in use of digital payments	26	89.54
1.3.4 ICT PCT patent applications	70	1.45	3.3.3 Availability of local online content	96	32.41
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	1	100.00
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	12	78.22
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	108	15.49	4.1.1 Medium and high-tech industry	110	6.79
2.1.2 Active mobile-broadband subscriptions	54	31.85	4.1.2 High-tech exports	78	9.40
2.1.3 Use of virtual social networks	27	69.85	4.1.3 PCT patent applications	83	0.03
2.1.4 Tertiary enrolment	38	47.70	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	25	97.60	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	71	50.14
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	102	38.66
2.2.1 Firms with website	86	24.53	4.2.3 Income inequality	29	80.79
2.2.2 Internet shopping	76	9.46	4.2.4 Healthy life expectancy at birth	92	47.62
2.2.3 Professionals	38	41.92	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	105	10.10	4.3.1 Access to basic services	102	61.61
2.2.5 Extent of staff training	86	30.82	4.3.2 Pollution	104	60.85
2.2.6 R&D expenditure by businesses	86	0.10	4.3.3 Road safety	70	56.88
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	89	55.38	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	99	40.00
2.3.3 ICT use and government efficiency	73	40.04			
2.3.4 R&D expenditure by governments and higher education	88	10.71			

* Confidential data

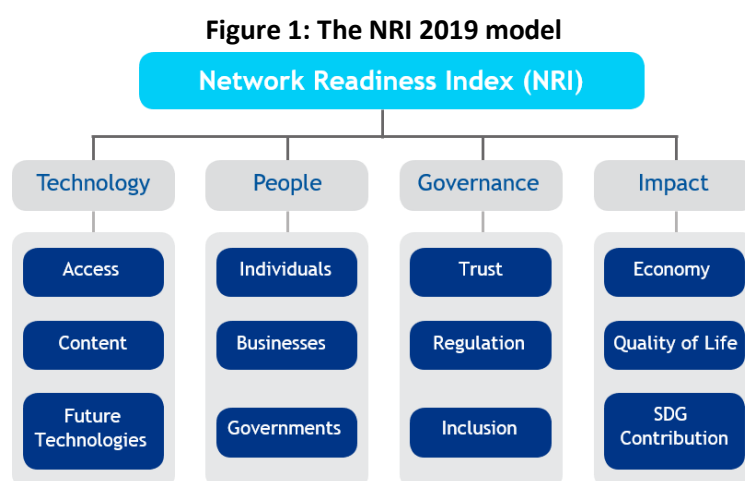
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Network Readiness Index 2019

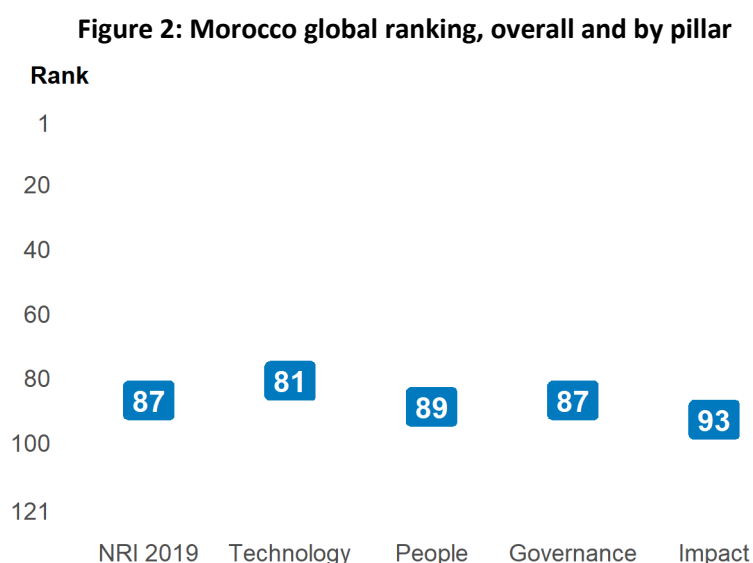
Morocco

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Morocco

Morocco ranks 87th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Morocco relate to Regulation, Access and Trust, among others (Table 1). More could be done, though, to improve the economy's performances in the Content, Businesses and Inclusion sub-pillars.

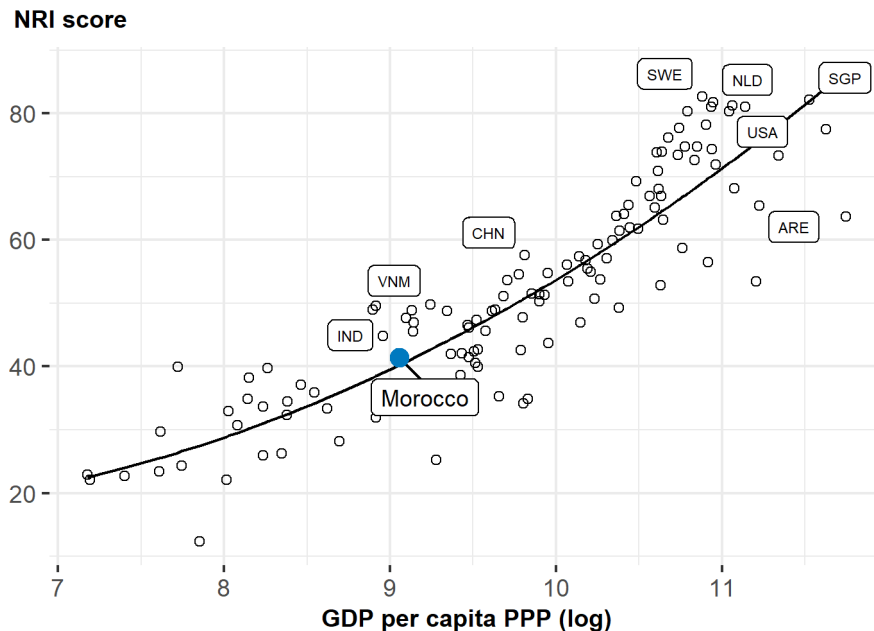
Table 1: Morocco rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Regulation	65	Quality of Life	87
Access	68	Governments	90
Trust	74	SDG Contribution	91
Economy	80	Content	92
Future Technologies	81	Businesses	95
Individuals	87	Inclusion	106

NRI score and income

Figure 3 shows the position of Morocco 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, Morocco 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Morocco belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

Lower-middle-income countries

Morocco is ranked 8th 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 each of the four pillars. At the sub-pillar level, it outperforms lower-middle-income countries in ten of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Quality of Life and SDG Contribution.

Arab States

Morocco is ranked 10th within Arab States (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 Arab States in two of the twelve sub-pillars: Trust and Regulation.

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

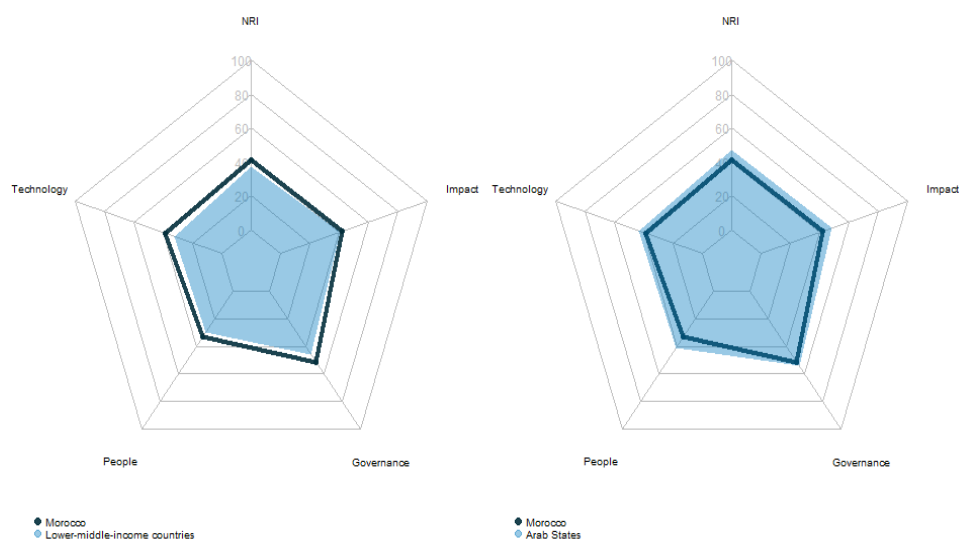


Table 2: Morocco scores vs. averages of its income group and region, overall and by pillar

Dimension	Morocco	Lower-middle-income countries	Arab States
NRI	41.38	37.18	46.82
Technology	38.45	32.15	43.54
People	33.01	30.04	41.30
Governance	51.84	46.17	54.28
Impact	42.20	40.35	48.18

Strongest and weakest indicators

The indicators where Morocco performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Online trust and safety (Table 3). By contrast, the economy's weakest indicators include Rural gap in use of digital payments, Professionals, and Socioeconomic gap in use of digital payments.

Table 3: Top-ranked and bottom-ranked indicators of Morocco

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Technicians and associate professionals	91
Use of clean fuels and technology	1	Digital participation and content creation	92
Online trust and safety	18	Pollution	92
Computer software spending	30	Happiness	94
ICT regulatory environment	34	Mobile tariffs	97
Internet access in schools	35	Social safety net protection	97
Firms with website	36	Internet shopping	110
ICT skills	43	Socioeconomic gap in use of digital payments	111
Availability of latest technologies	49	Professionals	114
Robot density	50	Rural gap in use of digital payments	117

NRI 2019 At-A-Glance: Morocco

Network Readiness Index

Rank: 87 (out of 121)

Score: 41.38

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	81	38.45	C. Governance pillar	87	51.84
1st sub-pillar: Access	68	61.42	1st sub-pillar: Trust	74	50.98
2nd sub-pillar: Content	92	26.75	2nd sub-pillar: Regulation	65	63.68
3rd sub-pillar: Future Technologies	81	27.19	3rd sub-pillar: Inclusion	106	40.87
B. People pillar	89	33.01	D. Impact pillar	93	42.20
1st sub-pillar: Individuals	87	42.29	1st sub-pillar: Economy	80	14.22
2nd sub-pillar: Businesses	95	20.92	2nd sub-pillar: Quality of Life	87	54.22
3rd sub-pillar: Governments	90	35.82	3rd sub-pillar: SDG Contribution	91	58.18

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	97	45.77	3.1.1 Rule of law	66	50.18
1.1.2 Handset prices	85	36.55	3.1.2 Software piracy rate	63	33.78
1.1.3 Internet access	55	72.44	3.1.3 Secure Internet servers	76	48.53
1.1.4 4G mobile network coverage	51	96.00	3.1.4 Cybersecurity	90	44.96
1.1.5 Fixed-broadband subscriptions	81	30.87	3.1.5 Online trust and safety	18	77.47
1.1.6 International Internet bandwidth	56	69.42	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	35	78.88	3.2.1 Regulatory quality	87	46.06
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	51	76.32
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	61	43.51
1.2.2 Mobile apps development	86	48.65	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	80	0.10	3.2.5 Social safety net protection	97	26.38
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	34	89.77
1.3.1 Availability of latest technologies	49	60.43	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	79	29.43	3.3.1 E-Participation	56	74.52
1.3.3 Government procurement of advanced technology products	66	39.45	3.3.2 Socioeconomic gap in use of digital payments	111	30.50
1.3.4 ICT PCT patent applications	58	5.17	3.3.3 Availability of local online content	66	51.41
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	74	47.90
1.3.6 Robot density	50	1.40	3.3.5 Rural gap in use of digital payments	117	0.00
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	72	61.22	4.1.1 Medium and high-tech industry	54	35.30
2.1.2 Active mobile-broadband subscriptions	84	21.76	4.1.2 High-tech exports	85	7.27
2.1.3 Use of virtual social networks	80	45.95	4.1.3 PCT patent applications	67	0.32
2.1.4 Tertiary enrolment	74	25.86	4.1.4 Labour productivity per employee	78	13.98
2.1.5 Adult literacy rate	85	59.34	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	43	39.61	4.2.1 Happiness	94	38.31
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	81	56.64
2.2.1 Firms with website	36	65.94	4.2.3 Income inequality	70	61.84
2.2.2 Internet shopping	110	2.04	4.2.4 Healthy life expectancy at birth	78	60.07
2.2.3 Professionals	114	2.58	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	91	18.45	4.3.1 Access to basic services	89	83.70
2.2.5 Extent of staff training	85	31.10	4.3.2 Pollution	92	71.49
2.2.6 R&D expenditure by businesses	51	5.43	4.3.3 Road safety	85	47.19
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	63	32.71
2.3.1 Government online services	74	63.08	4.3.5 Maths proficiency in schools	66	14.00
2.3.2 Publication and use of open data	76	16.86	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	50	49.41			
2.3.4 R&D expenditure by governments and higher education	82	13.94			

* Confidential data

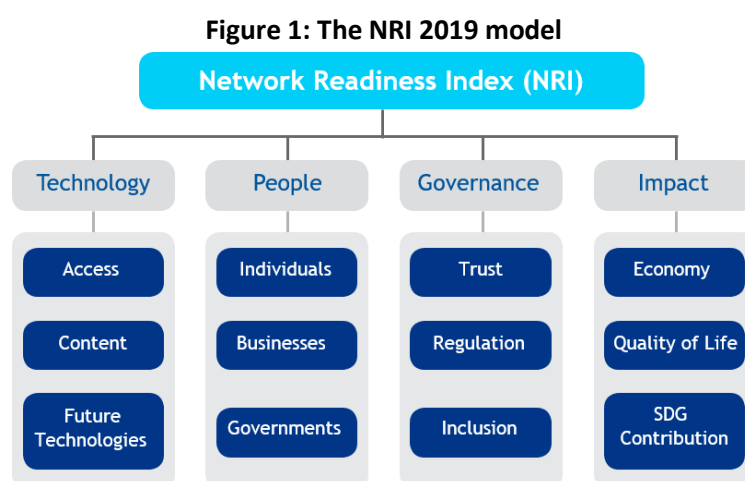
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Network Readiness Index 2019

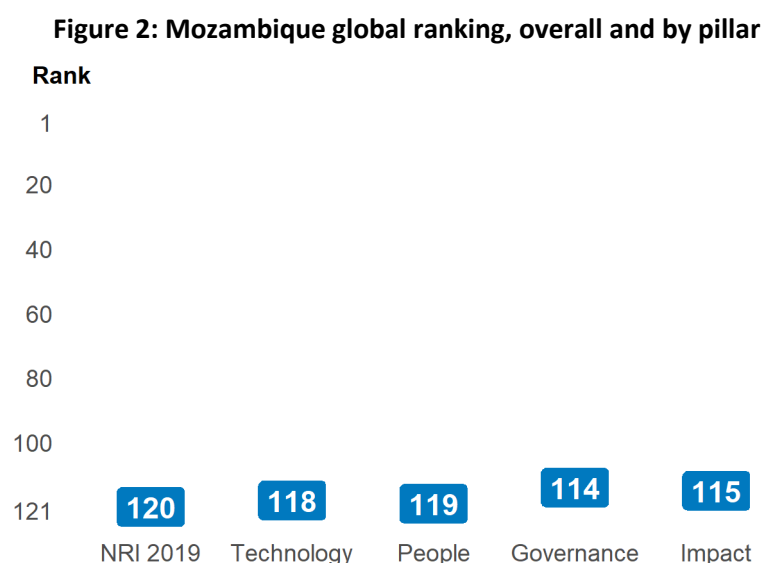
Mozambique

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Mozambique

Mozambique ranks 120th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

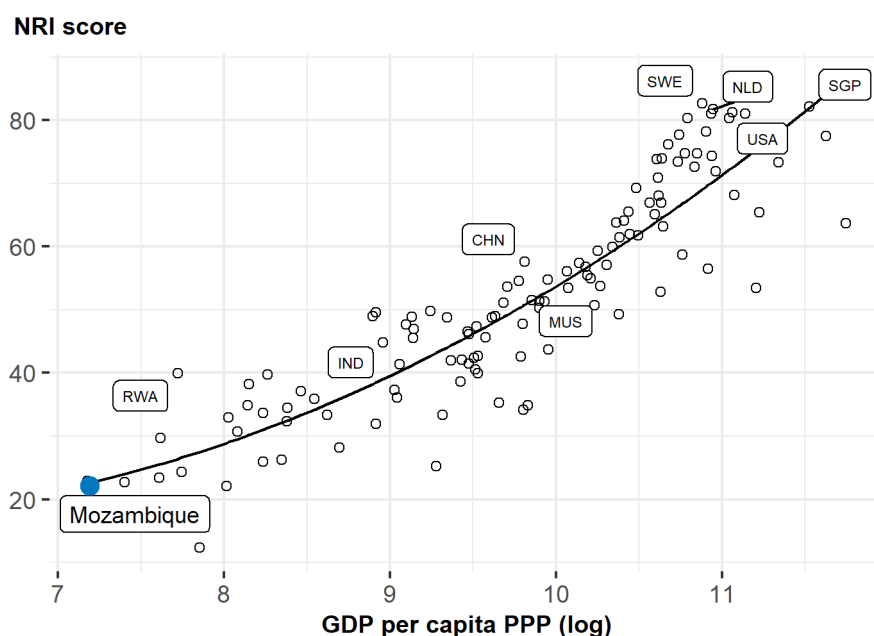
Table 1: Mozambique rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	102	Inclusion	115
Trust	104	SDG Contribution	116
Future Technologies	106	Individuals	118
Governments	111	Regulation	118
Quality of Life	111	Content	119
Access	114	Businesses	121

NRI score and income

Figure 3 shows the position of Mozambique 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, Mozambique 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Mozambique belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Low-income countries

Mozambique is ranked 10th in the group of low-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 outperforms low-income countries in one of the twelve sub-pillars: Economy.

Africa

Mozambique is ranked 20th within Africa (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 Mozambique against its income group and region, overall and by pillar



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

Dimension	Mozambique	Low-income countries	Africa
NRI	22.07	26.91	31.07
Technology	15.82	20.09	26.03
People	13.26	18.24	23.76
Governance	33.29	41.33	45.32
Impact	25.90	27.97	29.15

Strongest and weakest indicators

The indicators where Mozambique performs particularly well include Online trust and safety, Freedom to make life choices, and Pollution (Table 3). By contrast, the economy's weakest indicators include Internet users, Digital participation and content creation, and Active mobile-broadband subscriptions.

Table 3: Top-ranked and bottom-ranked indicators of Mozambique

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	9	Internet access	115
Freedom to make life choices	29	Secure Internet servers	116
Pollution	63	Healthy life expectancy at birth	116
R&D expenditure by governments and higher education	64	E-commerce legislation	117
High-tech exports	70	Mobile apps development	118
Firms with website	83	Extent of staff training	118
Government procurement of advanced technology products	86	Access to basic services	118
Rural gap in use of digital payments	87	Digital participation and content creation	119
R&D expenditure by businesses	89	Active mobile-broadband subscriptions	119
Internet shopping	90	Internet users	120

NRI 2019 At-A-Glance: Mozambique

Network Readiness Index

Rank: 120 (out of 121)

Score: 22.07

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	118	15.82	C. Governance pillar	114	33.29
1st sub-pillar: Access	114	24.25	1st sub-pillar: Trust	104	37.19
2nd sub-pillar: Content	119	4.14	2nd sub-pillar: Regulation	118	29.74
3rd sub-pillar: Future Technologies	106	19.07	3rd sub-pillar: Inclusion	115	32.95
B. People pillar	119	13.26	D. Impact pillar	115	25.90
1st sub-pillar: Individuals	118	10.66	1st sub-pillar: Economy	102	8.38
2nd sub-pillar: Businesses	121	8.43	2nd sub-pillar: Quality of Life	111	38.56
3rd sub-pillar: Governments	111	20.69	3rd sub-pillar: SDG Contribution	116	30.77

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	108	34.78	3.1.1 Rule of law	114	29.53
1.1.2 Handset prices	115	11.68	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	115	4.83	3.1.3 Secure Internet servers	116	20.74
1.1.4 4G mobile network coverage	109	33.00	3.1.4 Cybersecurity	114	15.24
1.1.5 Fixed-broadband subscriptions	108	0.67	3.1.5 Online trust and safety	9	83.26
1.1.6 International Internet bandwidth	101	60.56	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	106	35.42
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	107	43.80
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	109	20.98
1.2.2 Mobile apps development	118	14.19	3.2.4 E-commerce legislation	117	0.00
1.2.3 Intellectual property receipts	98	0.00	3.2.5 Social safety net protection	100	24.17
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	111	54.06
1.3.1 Availability of latest technologies	113	25.69	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	100	19.74	3.3.1 E-Participation	102	36.94
1.3.3 Government procurement of advanced technology products	86	30.86	3.3.2 Socioeconomic gap in use of digital payments	107	35.96
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	113	5.10
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	87	53.79
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	120	0.22	4.1.1 Medium and high-tech industry	97	13.65
2.1.2 Active mobile-broadband subscriptions	119	3.73	4.1.2 High-tech exports	70	10.69
2.1.3 Use of virtual social networks	114	5.51	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	107	4.78	4.1.4 Labour productivity per employee	105	0.80
2.1.5 Adult literacy rate	91	39.04	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	103	33.25
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	29	85.22
2.2.1 Firms with website	83	28.17	4.2.3 Income inequality	104	23.68
2.2.2 Internet shopping	90	5.48	4.2.4 Healthy life expectancy at birth	116	12.09
2.2.3 Professionals	113	3.23	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	111	5.47	4.3.1 Access to basic services	118	24.19
2.2.5 Extent of staff training	118	8.20	4.3.2 Pollution	63	84.53
2.2.6 R&D expenditure by businesses	89	0.04	4.3.3 Road safety	113	14.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	107	36.15	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	98	3.46	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	102	19.31			
2.3.4 R&D expenditure by governments and higher education	64	23.84			

* Confidential data

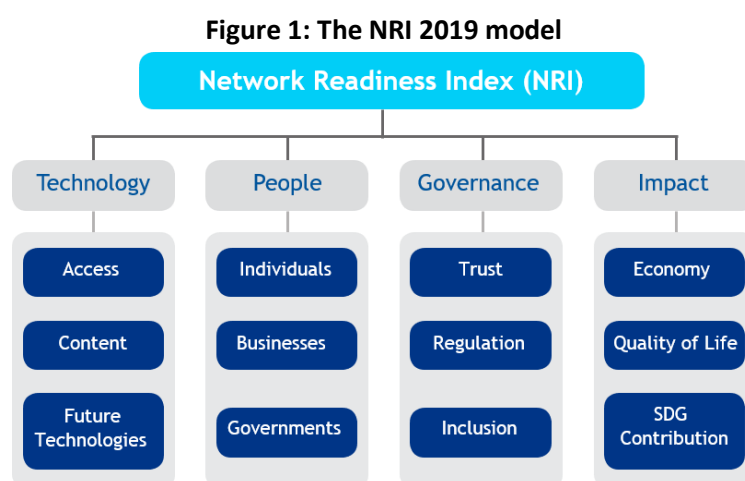
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Network Readiness Index 2019

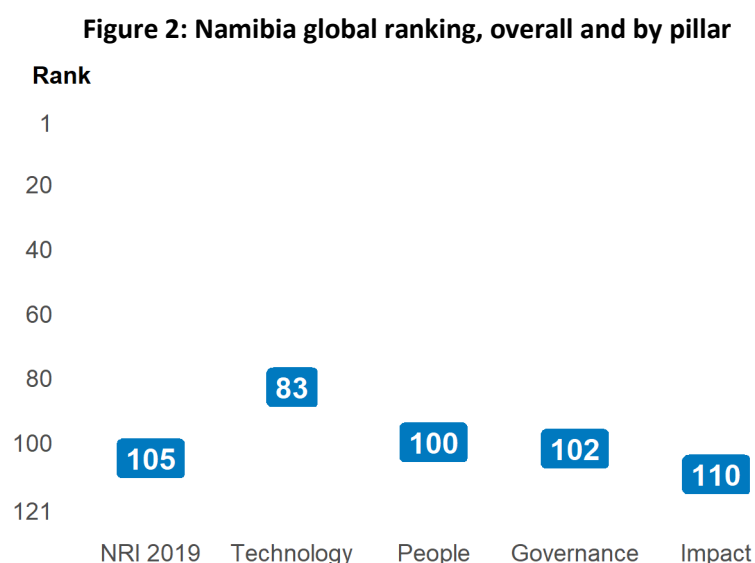
Namibia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Namibia

Namibia ranks 105th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

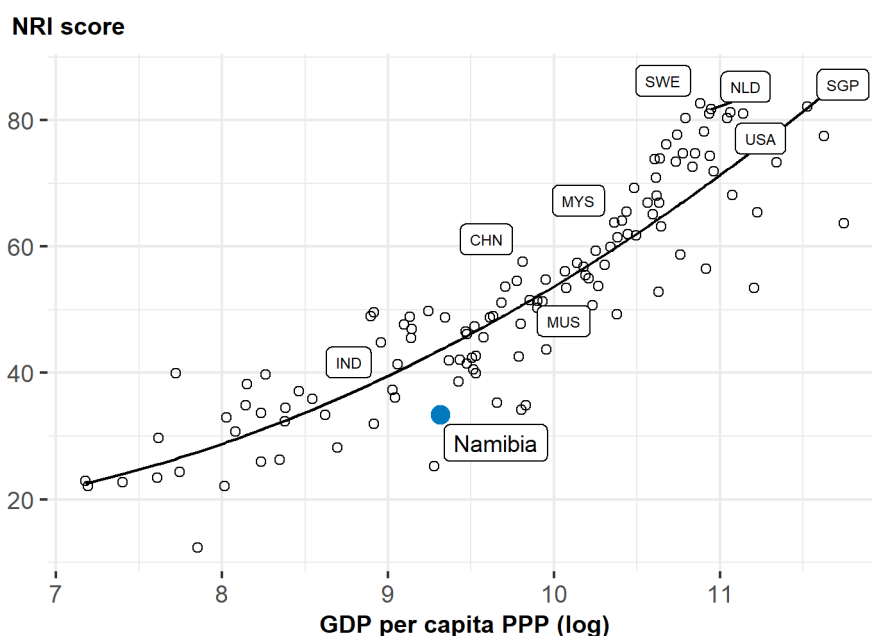
Table 1: Namibia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	48	Trust	101
Content	82	SDG Contribution	103
Individuals	90	Governments	105
Inclusion	98	Regulation	108
Access	101	Economy	115
Businesses	101	Quality of Life	116

NRI score and income

Figure 3 shows the position of Namibia 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, Namibia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Namibia belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Upper-middle-income countries

Namibia is ranked 37th in the group of upper-middle-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 outperforms upper-middle-income countries in one of the twelve sub-pillars: Future Technology.

Africa

Namibia is ranked 8th within Africa (Figure 4, right panel). It has a score above the regional average in two of the four pillars: Score, Technology and People. With regard to sub-pillars, it outperforms the average in Africa in seven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Inclusion and SDG Contribution.

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

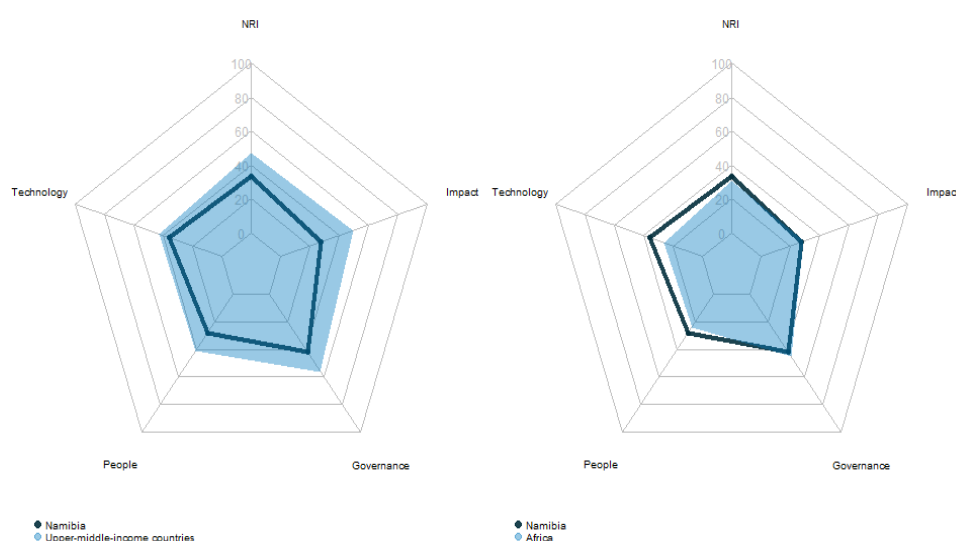


Table 2: Namibia scores vs. averages of its income group and region, overall and by pillar

Dimension	Namibia	Upper-middle-income countries	Africa
NRI	33.34	47.40	31.07
Technology	35.73	42.66	26.03
People	28.11	41.07	23.76
Governance	42.26	56.24	45.32
Impact	27.26	49.62	29.15

Strongest and weakest indicators

The indicators where Namibia performs particularly well include Active mobile-broadband subscriptions, Rule of law, and Availability of latest technologies (Table 3). By contrast, the economy's weakest indicators include E-commerce legislation, Cybersecurity, High-tech exports, and Road safety.

Table 3: Top-ranked and bottom-ranked indicators of Namibia

Strongest indicators	Rank	Weakest indicators	Rank
Active mobile-broadband subscriptions	42	Availability of local online content	106
Rule of law	50	Income inequality	106
Availability of latest technologies	56	International Internet bandwidth	107
Government procurement of advanced technology products	58	E-Participation	107
Handset prices	60	Access to basic services	109
Adult literacy rate	61	Healthy life expectancy at birth	110
Rural gap in use of digital payments	62	High-tech exports	115
R&D expenditure by governments and higher education	63	Road safety	115
Internet shopping	66	Cybersecurity	116
Legal framework's adaptability to digital business models	68	E-commerce legislation	117

NRI 2019 At-A-Glance: Namibia

Network Readiness Index

Rank: 105 (out of 121)

Score: 33.34

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	83	35.73	C. Governance pillar	102	42.26
1st sub-pillar: Access	101	37.39	1st sub-pillar: Trust	101	38.03
2nd sub-pillar: Content	82	34.15	2nd sub-pillar: Regulation	108	43.08
3rd sub-pillar: Future Technologies	48	35.64	3rd sub-pillar: Inclusion	98	45.66
B. People pillar	100	28.11	D. Impact pillar	110	27.26
1st sub-pillar: Individuals	90	41.64	1st sub-pillar: Economy	115	4.76
2nd sub-pillar: Businesses	101	17.00	2nd sub-pillar: Quality of Life	116	31.27
3rd sub-pillar: Governments	105	25.70	3rd sub-pillar: SDG Contribution	103	45.76

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	90	49.43	3.1.1 Rule of law	50	58.92
1.1.2 Handset prices	60	46.93	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	88	30.19	3.1.3 Secure Internet servers	92	42.70
1.1.4 4G mobile network coverage	105	39.00	3.1.4 Cybersecurity	116	11.84
1.1.5 Fixed-broadband subscriptions	104	1.80	3.1.5 Online trust and safety	79	38.66
1.1.6 International Internet bandwidth	107	57.01	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	74	50.26
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	89	55.04
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	68	40.99
1.2.2 Mobile apps development	87	48.53	3.2.4 E-commerce legislation	117	0.00
1.2.3 Intellectual property receipts	84	0.07	3.2.5 Social safety net protection	NA	NA
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	95	69.12
1.3.1 Availability of latest technologies	56	55.76	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	NA	NA	3.3.1 E-Participation	107	31.21
1.3.3 Government procurement of advanced technology products	58	42.08	3.3.2 Socioeconomic gap in use of digital payments	71	61.49
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	106	22.91
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	62	67.03
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	89	45.85	4.1.1 Medium and high-tech industry	103	9.10
2.1.2 Active mobile-broadband subscriptions	42	35.06	4.1.2 High-tech exports	115	0.41
2.1.3 Use of virtual social networks	100	24.12	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	88	16.25	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	61	86.90	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	97	37.01
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	88	52.17
2.2.1 Firms with website	84	27.00	4.2.3 Income inequality	106	10.26
2.2.2 Internet shopping	66	15.54	4.2.4 Healthy life expectancy at birth	110	25.64
2.2.3 Professionals	77	18.34	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	85	23.13	4.3.1 Access to basic services	109	45.29
2.2.5 Extent of staff training	NA	NA	4.3.2 Pollution	74	80.97
2.2.6 R&D expenditure by businesses	72	0.98	4.3.3 Road safety	115	13.44
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	105	39.23	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	90	9.08	4.3.6 Use of clean fuels and technology	95	43.33
2.3.3 ICT use and government efficiency	94	30.30			
2.3.4 R&D expenditure by governments and higher education	63	24.17			

* Confidential data

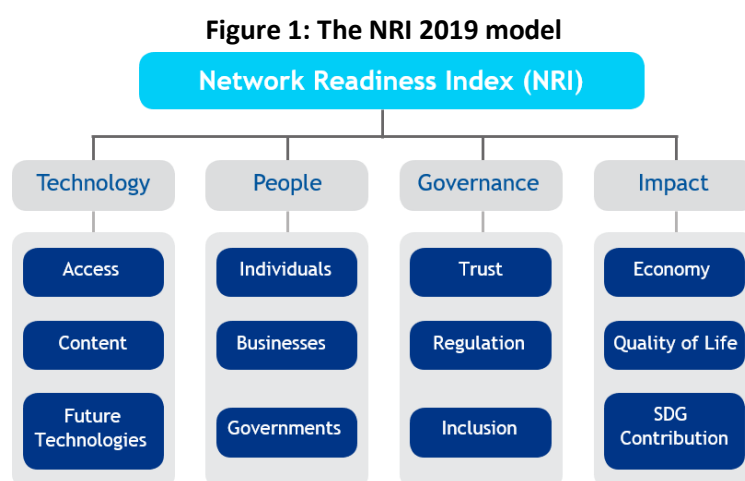
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Network Readiness Index 2019

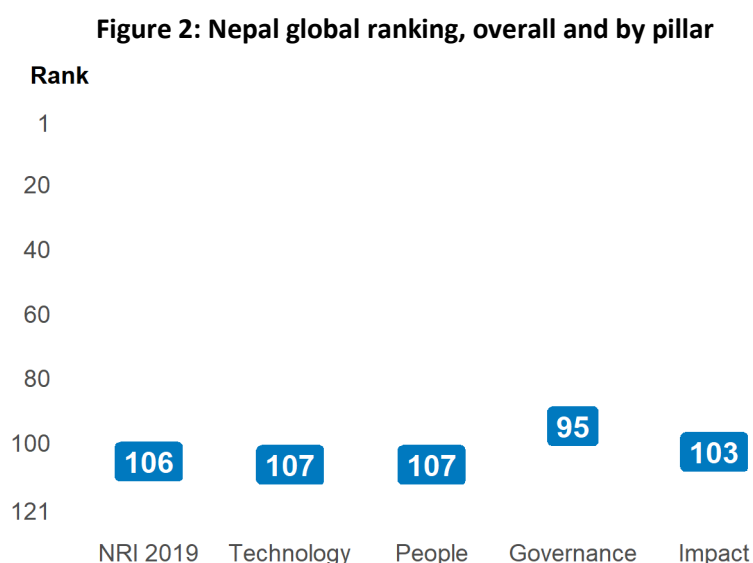
Nepal

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Nepal

Nepal ranks 106th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology and People.



Performance at sub-pillar level

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

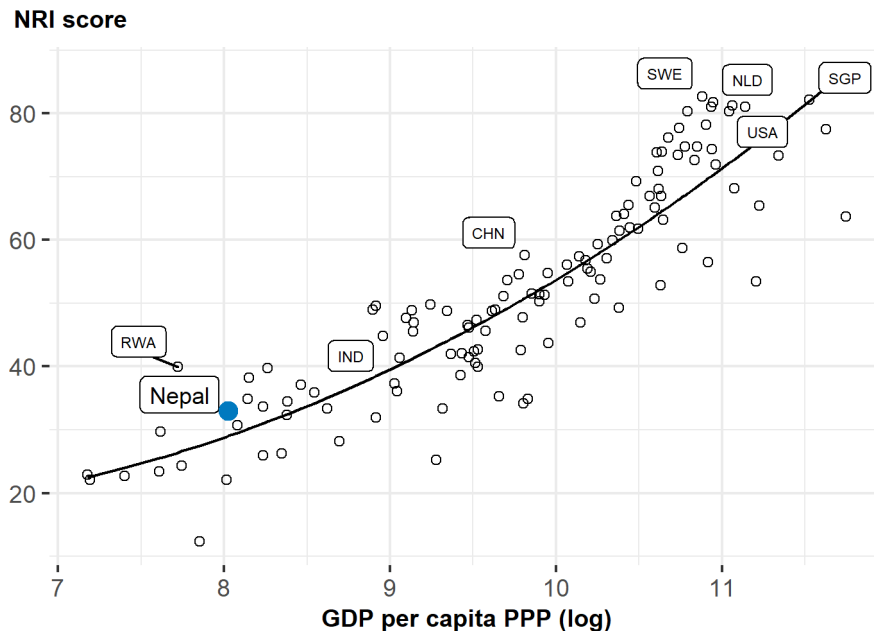
Table 1: Nepal rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Trust	76	Individuals	104
Quality of Life	83	Future Technologies	108
Content	89	Access	109
Governments	96	Businesses	109
Inclusion	96	SDG Contribution	109
Regulation	101	Economy	112

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 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Nepal belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Low-income countries

Nepal is ranked 3rd in the group of low-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 low-income countries in ten of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

Asia & Pacific

Nepal is ranked 19th 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	Low-income countries	Asia & Pacific
NRI	32.96	26.91	52.44
Technology	26.14	20.09	48.56
People	24.37	18.24	44.85
Governance	48.20	41.33	61.84
Impact	33.15	27.97	54.50

Strongest and weakest indicators

The indicators where Nepal performs particularly well include Online trust and safety, Income inequality, and E-Participation (Table 3). By contrast, the economy's weakest indicators include Pollution, 4G mobile network coverage, and Availability of latest technologies.

Table 3: Top-ranked and bottom-ranked indicators of Nepal

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	6	Availability of local online content	105
Income inequality	34	Internet access	108
E-Participation	55	Regulatory quality	108
R&D expenditure by governments and higher education	60	Handset prices	109
E-commerce legislation	66	Internet shopping	109
Road safety	68	Social safety net protection	109
Government online services	71	Extent of staff training	111
Professionals	73	Availability of latest technologies	112
Publication and use of open data	79	4G mobile network coverage	116
Ease of doing business	84	Pollution	120

NRI 2019 At-A-Glance: Nepal

Network Readiness Index

Rank: 106 (out of 121)

Score: 32.96

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	107	26.14	C. Governance pillar	95	48.20
1st sub-pillar: Access	109	31.53	1st sub-pillar: Trust	76	49.85
2nd sub-pillar: Content	89	28.05	2nd sub-pillar: Regulation	101	47.05
3rd sub-pillar: Future Technologies	108	18.85	3rd sub-pillar: Inclusion	96	47.68
B. People pillar	107	24.37	D. Impact pillar	103	33.15
1st sub-pillar: Individuals	104	26.83	1st sub-pillar: Economy	112	6.33
2nd sub-pillar: Businesses	109	14.57	2nd sub-pillar: Quality of Life	83	54.85
3rd sub-pillar: Governments	96	31.72	3rd sub-pillar: SDG Contribution	109	38.25

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	89	49.45	3.1.1 Rule of law	92	42.43
1.1.2 Handset prices	109	21.21	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	108	12.44	3.1.3 Secure Internet servers	86	44.40
1.1.4 4G mobile network coverage	116	15.47	3.1.4 Cybersecurity	103	26.43
1.1.5 Fixed-broadband subscriptions	NA	NA	3.1.5 Online trust and safety	6	86.15
1.1.6 International Internet bandwidth	103	59.08	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	108	34.99
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	84	58.29
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	98	29.72
1.2.2 Mobile apps development	90	46.89	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	109	18.29
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	100	66.03
1.3.1 Availability of latest technologies	112	27.20	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	99	20.06	3.3.1 E-Participation	55	75.16
1.3.3 Government procurement of advanced technology products	94	28.14	3.3.2 Socioeconomic gap in use of digital payments	90	47.57
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	105	23.27
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	102	44.73
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	101	26.93	4.1.1 Medium and high-tech industry	100	10.43
2.1.2 Active mobile-broadband subscriptions	96	17.02	4.1.2 High-tech exports	104	2.24
2.1.3 Use of virtual social networks	95	31.39	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	100	8.53	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	88	50.29	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	93	38.59
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	84	55.92
2.2.1 Firms with website	102	9.74	4.2.3 Income inequality	34	79.47
2.2.2 Internet shopping	109	2.20	4.2.4 Healthy life expectancy at birth	95	45.42
2.2.3 Professionals	73	19.81	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	90	18.63	4.3.1 Access to basic services	100	67.59
2.2.5 Extent of staff training	111	22.45	4.3.2 Pollution	120	0.00
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	68	58.75
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	71	65.39	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	79	15.49	4.3.6 Use of clean fuels and technology	101	26.67
2.3.3 ICT use and government efficiency	101	19.32			
2.3.4 R&D expenditure by governments and higher education	60	26.69			

* Confidential data

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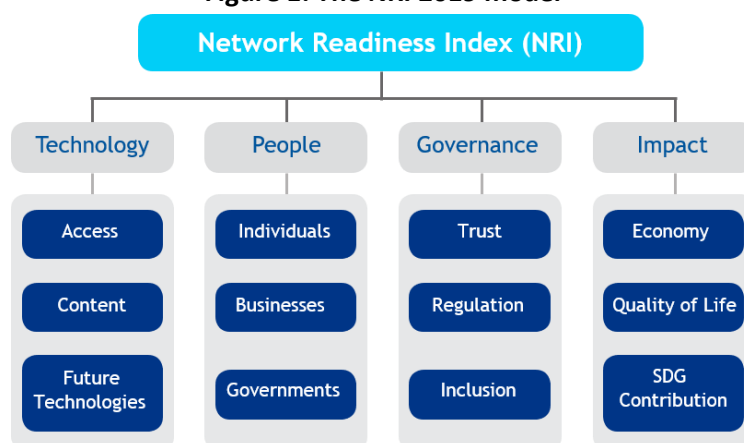
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Network Readiness Index 2019

Netherlands

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

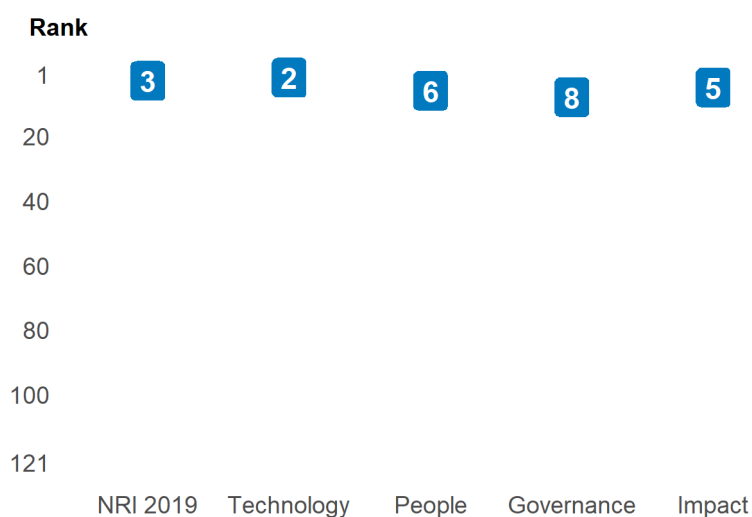
Figure 1: The NRI 2019 model



Global NRI position of Netherlands

Netherlands ranks 3rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Netherlands global ranking, overall and by pillar



Performance at sub-pillar level

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

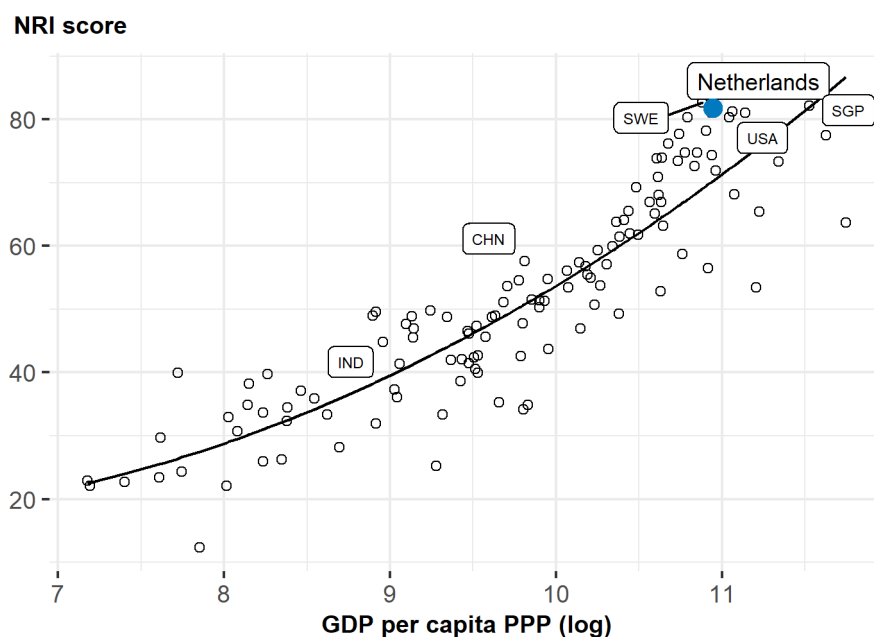
Table 1: Netherlands rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	1	Future Technologies	8
Regulation	4	Economy	9
Inclusion	6	Trust	10
Businesses	7	Access	12
Governments	7	SDG Contribution	15
Quality of Life	7	Individuals	19

NRI score and income

Figure 3 shows the position of Netherlands 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, Netherlands 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: SWE = Sweden (rank: 1), SGP = Singapore (2), CHN = China (41), IND = India (79). USA is ranked 8th. Netherlands belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Netherlands is ranked 3rd 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 each of the four pillars. At the sub-pillar level, it has a higher score than the average of high-income countries in all of them.

Europe

Netherlands is ranked 2nd within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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



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

Dimension	Netherlands	High-income countries	Europe
NRI	81.78	68.12	65.20
Technology	84.34	66.07	63.08
People	74.40	61.07	57.50
Governance	88.01	77.07	73.99
Impact	80.37	68.29	66.24

Strongest and weakest indicators

The indicators where Netherlands performs particularly well include Internet access in schools, Intellectual property receipts, and E-commerce legislation (Table 3). By contrast, the economy's weakest indicators include Online trust and safety, Active mobile-broadband subscriptions, Use of virtual social networks, and Ease of doing business.

Table 3: Top-ranked and bottom-ranked indicators of Netherlands

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Gender gap in internet use	25
Intellectual property receipts	1	Pollution	27
E-commerce legislation	1	International Internet bandwidth	28
Use of clean fuels and technology	1	Mobile tariffs	30
Internet shopping	2	Handset prices	34
Secure Internet servers	2	Access to basic services	38
Reading proficiency in schools	2	Use of virtual social networks	41
Firms with website	3	Ease of doing business	41
Regulatory quality	3	Active mobile-broadband subscriptions	43
E-Participation	4	Online trust and safety	62

NRI 2019 At-A-Glance: Netherlands

Network Readiness Index

Rank: 3 (out of 121)

Score: 81.78

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	2	84.34	C. Governance pillar	8	88.01
1st sub-pillar: Access	12	86.82	1st sub-pillar: Trust	10	86.51
2nd sub-pillar: Content	1	96.59	2nd sub-pillar: Regulation	4	90.88
3rd sub-pillar: Future Technologies	8	69.59	3rd sub-pillar: Inclusion	6	86.65
B. People pillar	6	74.40	D. Impact pillar	5	80.37
1st sub-pillar: Individuals	19	68.44	1st sub-pillar: Economy	9	56.06
2nd sub-pillar: Businesses	7	74.65	2nd sub-pillar: Quality of Life	7	89.74
3rd sub-pillar: Governments	7	80.12	3rd sub-pillar: SDG Contribution	15	95.31

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	30	77.99	3.1.1 Rule of law	9	94.76
1.1.2 Handset prices	34	62.71	3.1.2 Software piracy rate	13	90.54
1.1.3 Internet access	9	95.90	3.1.3 Secure Internet servers	2	98.28
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	13	94.96
1.1.5 Fixed-broadband subscriptions	6	98.81	3.1.5 Online trust and safety	62	54.03
1.1.6 International Internet bandwidth	28	73.33	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	3	95.86
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	41	81.14
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	10	82.79
1.2.2 Mobile apps development	5	94.57	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	1	100.00	3.2.5 Social safety net protection	9	90.50
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	18	94.98
1.3.1 Availability of latest technologies	7	94.73	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	5	86.93	3.3.1 E-Participation	4	98.73
1.3.3 Government procurement of advanced technology products	18	62.55	3.3.2 Socioeconomic gap in use of digital payments	11	96.62
1.3.4 ICT PCT patent applications	12	65.10	3.3.3 Availability of local online content	4	95.87
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	25	66.16
1.3.6 Robot density	11	53.69	3.3.5 Rural gap in use of digital payments	24	75.85
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	11	94.50	4.1.1 Medium and high-tech industry	15	62.41
2.1.2 Active mobile-broadband subscriptions	43	34.77	4.1.2 High-tech exports	15	42.13
2.1.3 Use of virtual social networks	41	63.62	4.1.3 PCT patent applications	9	59.62
2.1.4 Tertiary enrolment	12	61.98	4.1.4 Labour productivity per employee	15	60.06
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	8	87.34	4.2.1 Happiness	5	91.77
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	17	90.63
2.2.1 Firms with website	3	97.40	4.2.3 Income inequality	14	91.58
2.2.2 Internet shopping	2	97.11	4.2.4 Healthy life expectancy at birth	19	84.98
2.2.3 Professionals	5	69.31	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	18	69.74	4.3.1 Access to basic services	38	98.49
2.2.5 Extent of staff training	5	84.45	4.3.2 Pollution	27	92.84
2.2.6 R&D expenditure by businesses	17	29.86	4.3.3 Road safety	6	96.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	2	99.48
2.3.1 Government online services	17	92.31	4.3.5 Maths proficiency in schools	10	84.48
2.3.2 Publication and use of open data	9	74.95	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	15	78.01			
2.3.4 R&D expenditure by governments and higher education	12	75.21			

* Confidential data

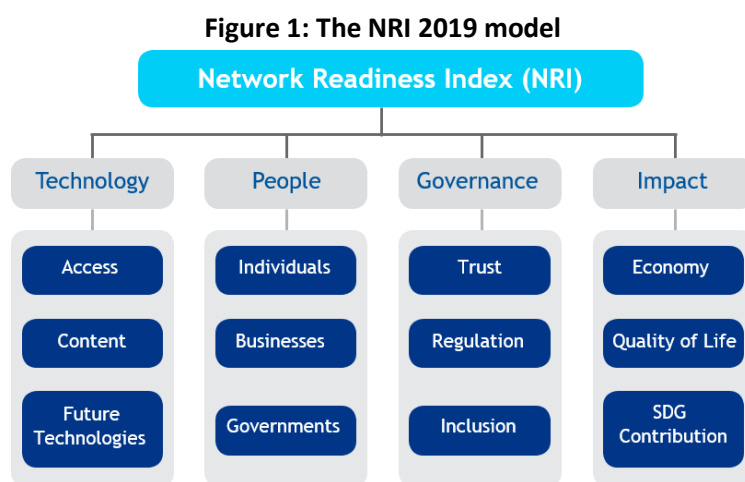
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Network Readiness Index 2019

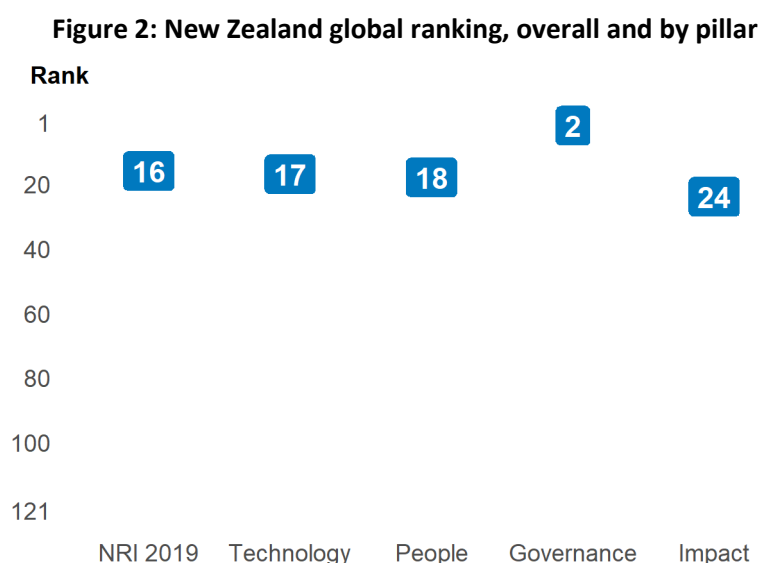
New Zealand

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of New Zealand

New Zealand ranks 16th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

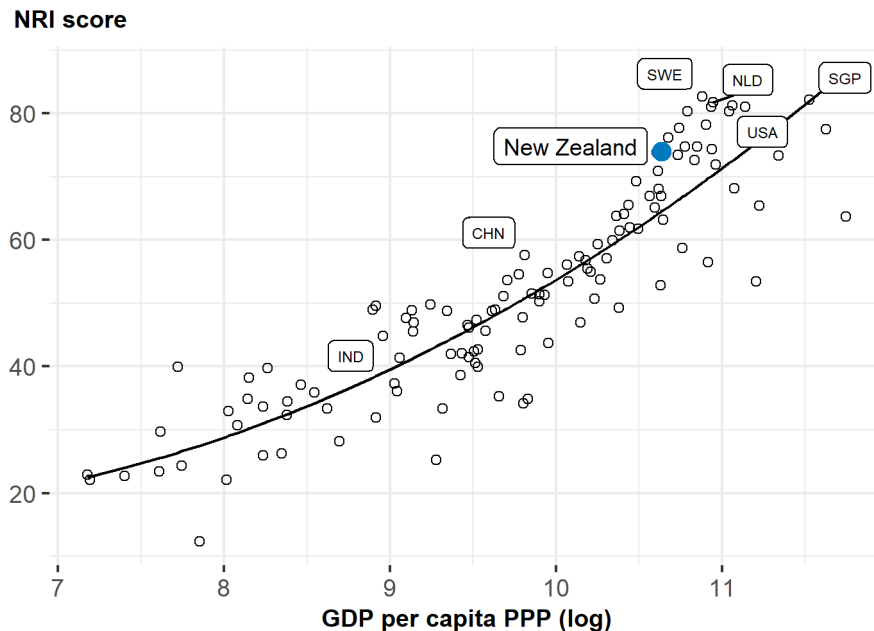
Table 1: New Zealand rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Inclusion	1	Access	16
Trust	3	Businesses	23
Quality of Life	4	Individuals	26
Regulation	7	Future Technologies	28
Content	10	SDG Contribution	39
Governments	14	Economy	49

NRI score and income

Figure 3 shows the position of New Zealand 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, New Zealand 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. New Zealand belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

High-income countries

New Zealand is ranked 16th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in nine of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion and Quality of Life.

Asia & Pacific

New Zealand is ranked 4th within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Asia & Pacific in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

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

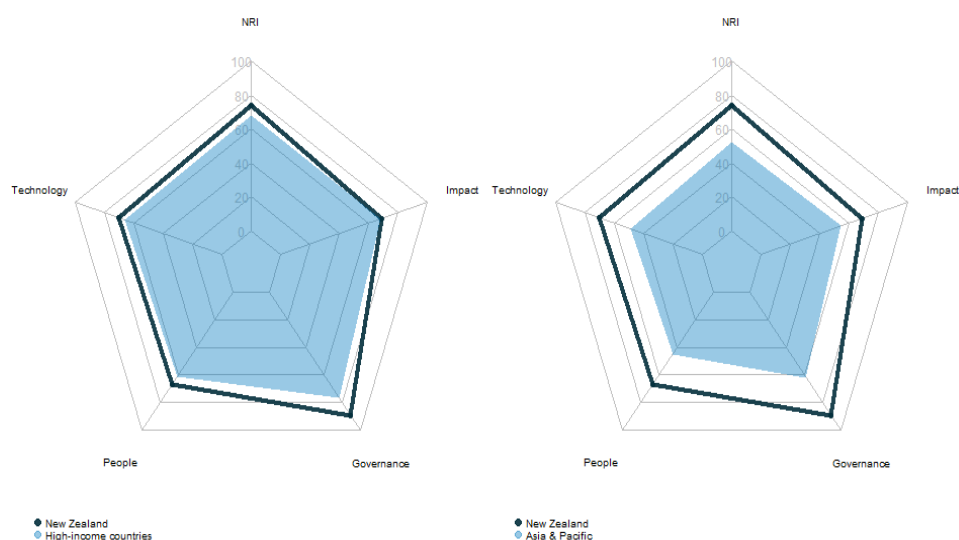


Table 2: New Zealand scores vs. averages of its income group and region, overall and by pillar

Dimension	New Zealand	High-income countries	Asia & Pacific
NRI	73.97	68.12	52.44
Technology	70.30	66.07	48.56
People	67.13	61.07	44.85
Governance	89.72	77.07	61.84
Impact	68.75	68.29	54.50

Strongest and weakest indicators

The indicators where New Zealand performs particularly well include Ease of doing business, E-commerce legislation, and Access to basic services (Table 3). By contrast, the economy's weakest indicators include Medium and high-tech industry, ICT regulatory environment, and High-tech exports.

Table 3: Top-ranked and bottom-ranked indicators of New Zealand

Strongest indicators	Rank	Weakest indicators	Rank
Ease of doing business	1	Maths proficiency in schools	34
E-commerce legislation	1	Labour productivity per employee	35
Access to basic services	1	Professionals	36
Pollution	1	Technicians and associate professionals	37
Use of clean fuels and technology	1	Cybersecurity	38
Software piracy rate	2	Rural gap in use of digital payments	38
Digital participation and content creation	3	4G mobile network coverage	45
Freedom to make life choices	3	High-tech exports	47
Regulatory quality	4	ICT regulatory environment	77
Socioeconomic gap in use of digital payments	4	Medium and high-tech industry	81

NRI 2019 At-A-Glance: New Zealand

Network Readiness Index

Rank: 16 (out of 121)

Score: 73.97

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	17	70.30	C. Governance pillar	2	89.72
1st sub-pillar: Access	16	86.11	1st sub-pillar: Trust	3	90.66
2nd sub-pillar: Content	10	77.32	2nd sub-pillar: Regulation	7	90.12
3rd sub-pillar: Future Technologies	28	47.46	3rd sub-pillar: Inclusion	1	88.36
B. People pillar	18	67.13	D. Impact pillar	24	68.75
1st sub-pillar: Individuals	26	66.33	1st sub-pillar: Economy	49	25.71
2nd sub-pillar: Businesses	23	58.71	2nd sub-pillar: Quality of Life	4	91.60
3rd sub-pillar: Governments	14	76.34	3rd sub-pillar: SDG Contribution	39	88.94

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	18	84.30	3.1.1 Rule of law	5	96.12
1.1.2 Handset prices	11	73.96	3.1.2 Software piracy rate	2	98.65
1.1.3 Internet access	24	86.99	3.1.3 Secure Internet servers	25	83.44
1.1.4 4G mobile network coverage	45	97.00	3.1.4 Cybersecurity	38	84.43
1.1.5 Fixed-broadband subscriptions	5	99.03	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	15	75.40	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	4	95.00
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	1	100.00
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	14	81.05
1.2.2 Mobile apps development	18	85.05	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	23	4.01	3.2.5 Social safety net protection	17	84.19
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	77	80.51
1.3.1 Availability of latest technologies	17	85.53	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	19	65.84	3.3.1 E-Participation	5	98.08
1.3.3 Government procurement of advanced technology products	28	54.36	3.3.2 Socioeconomic gap in use of digital payments	4	99.29
1.3.4 ICT PCT patent applications	25	37.37	3.3.3 Availability of local online content	22	82.13
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	29	14.42	3.3.5 Rural gap in use of digital payments	38	73.94
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	15	90.16	4.1.1 Medium and high-tech industry	81	23.46
2.1.2 Active mobile-broadband subscriptions	19	44.45	4.1.2 High-tech exports	47	18.43
2.1.3 Use of virtual social networks	21	70.89	4.1.3 PCT patent applications	23	17.42
2.1.4 Tertiary enrolment	15	59.81	4.1.4 Labour productivity per employee	35	43.52
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	9	89.84
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	3	97.42
2.2.1 Firms with website	16	81.06	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	8	88.63	4.2.4 Healthy life expectancy at birth	14	87.55
2.2.3 Professionals	36	43.11	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	37	54.05	4.3.1 Access to basic services	1	100.00
2.2.5 Extent of staff training	21	69.43	4.3.2 Pollution	1	100.00
2.2.6 R&D expenditure by businesses	33	15.96	4.3.3 Road safety	31	84.06
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	22	90.61
2.3.1 Government online services	9	94.62	4.3.5 Maths proficiency in schools	34	58.99
2.3.2 Publication and use of open data	7	79.38	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	16	76.96			
2.3.4 R&D expenditure by governments and higher education	23	54.42			

* Confidential data

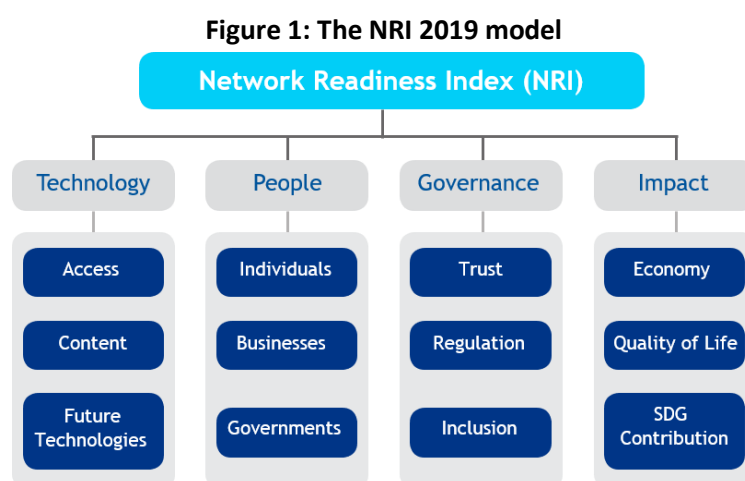
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Network Readiness Index 2019

Nigeria

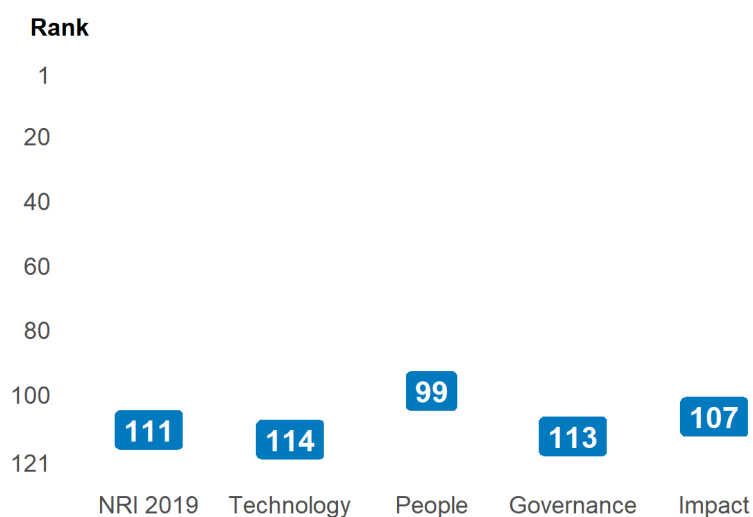
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Nigeria

Nigeria ranks 111th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Nigeria global ranking, overall and by pillar



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Nigeria relate to Businesses, Economy and Governments, among others (Table 1). More could be done, though, to improve the economy's performances in the Access, Regulation and Inclusion sub-pillars.

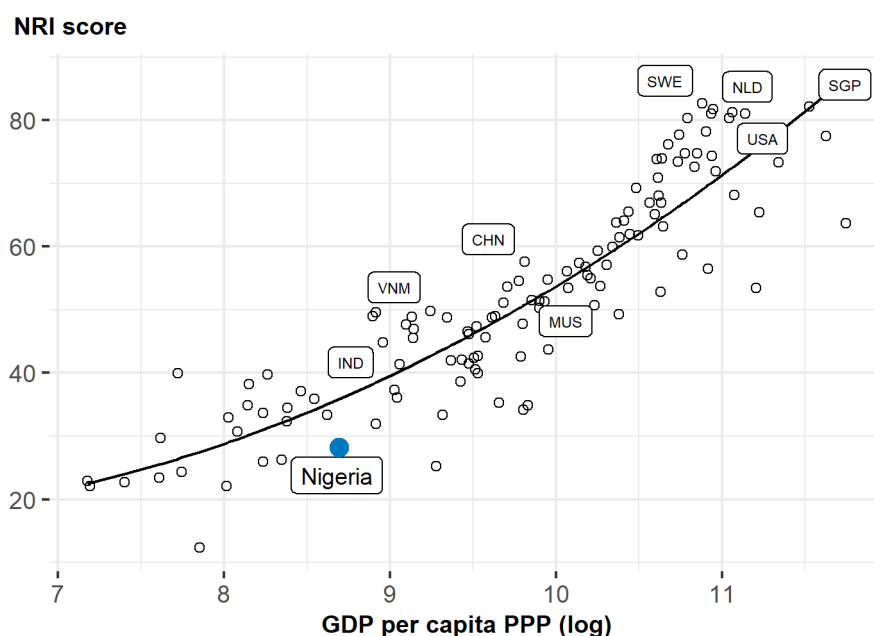
Table 1: Nigeria rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	64	Quality of Life	109
Economy	81	Content	111
Governments	93	Individuals	111
Trust	98	Access	113
Future Technologies	105	Regulation	115
SDG Contribution	107	Inclusion	116

NRI score and income

Figure 3 shows the position of Nigeria 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, Nigeria 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Nigeria belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region — Africa — is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries

Nigeria is ranked 21st in the group of lower-middle-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 outperforms lower-middle-income countries in one of the twelve sub-pillars: Businesses.

Africa

Nigeria is ranked 11th within Africa (Figure 4, right panel). It has a score above the regional average in two of the four pillars: People and Impact. With regard to sub-pillars, it outperforms the average in Africa in four of the twelve sub-pillars: Businesses, Governments, Economy and Quality of Life.

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



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

Dimension	Nigeria	Lower-middle-income countries	Africa
NRI	28.22	37.18	31.07
Technology	18.77	32.15	26.03
People	28.23	30.04	23.76
Governance	34.83	46.17	45.32
Impact	31.03	40.35	29.15

Strongest and weakest indicators

The indicators where Nigeria performs particularly well include Technicians and associate professionals, Reading proficiency in schools, and Medium and high-tech industry (Table 3). By contrast, the economy's weakest indicators include Healthy life expectancy at birth, Internet access, and International Internet bandwidth.

Table 3: Top-ranked and bottom-ranked indicators of Nigeria

Strongest indicators	Rank	Weakest indicators	Rank
Technicians and associate professionals	3	Access to basic services	110
Reading proficiency in schools	32	Use of clean fuels and technology	110
Medium and high-tech industry	43	Rule of law	111
Cybersecurity	59	Legal framework's adaptability to digital business models	112
Maths proficiency in schools	59	Regulatory quality	113
Publication and use of open data	67	4G mobile network coverage	115
Freedom to make life choices	76	Social safety net protection	118
ICT PCT patent applications	77	Internet access	119
Computer software spending	77	International Internet bandwidth	119
Online trust and safety	77	Healthy life expectancy at birth	120

NRI 2019 At-A-Glance: Nigeria

Network Readiness Index

Rank: 111 (out of 121)

Score: 28.22

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	114	18.77	C. Governance pillar	113	34.83
1st sub-pillar: Access	113	24.82	1st sub-pillar: Trust	98	39.94
2nd sub-pillar: Content	111	12.30	2nd sub-pillar: Regulation	115	33.47
3rd sub-pillar: Future Technologies	105	19.18	3rd sub-pillar: Inclusion	116	31.09
B. People pillar	99	28.23	D. Impact pillar	107	31.03
1st sub-pillar: Individuals	111	20.71	1st sub-pillar: Economy	81	13.64
2nd sub-pillar: Businesses	64	29.65	2nd sub-pillar: Quality of Life	109	39.71
3rd sub-pillar: Governments	93	34.33	3rd sub-pillar: SDG Contribution	107	39.74

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	84	51.96	3.1.1 Rule of law	111	33.24
1.1.2 Handset prices	110	20.01	3.1.2 Software piracy rate	83	12.16
1.1.3 Internet access	119	1.34	3.1.3 Secure Internet servers	85	44.48
1.1.4 4G mobile network coverage	115	22.34	3.1.4 Cybersecurity	59	69.19
1.1.5 Fixed-broadband subscriptions	96	8.16	3.1.5 Online trust and safety	77	40.64
1.1.6 International Internet bandwidth	119	45.12	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	113	31.98
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	105	47.13
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	112	16.95
1.2.2 Mobile apps development	110	28.01	3.2.4 E-commerce legislation	110	25.00
1.2.3 Intellectual property receipts	98	0.00	3.2.5 Social safety net protection	118	1.76
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	83	77.99
1.3.1 Availability of latest technologies	91	39.57	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	105	16.34	3.3.1 E-Participation	100	41.39
1.3.3 Government procurement of advanced technology products	87	30.63	3.3.2 Socioeconomic gap in use of digital payments	102	40.81
1.3.4 ICT PCT patent applications	77	0.30	3.3.3 Availability of local online content	107	22.47
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	82	22.17
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	109	28.59
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	94	35.84	4.1.1 Medium and high-tech industry	43	42.61
2.1.2 Active mobile-broadband subscriptions	109	10.12	4.1.2 High-tech exports	100	3.51
2.1.3 Use of virtual social networks	109	9.56	4.1.3 PCT patent applications	88	0.00
2.1.4 Tertiary enrolment	102	6.89	4.1.4 Labour productivity per employee	89	8.44
2.1.5 Adult literacy rate	90	41.15	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	79	45.72
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	76	60.50
2.2.1 Firms with website	106	4.80	4.2.3 Income inequality	83	52.63
2.2.2 Internet shopping	92	5.21	4.2.4 Healthy life expectancy at birth	120	0.00
2.2.3 Professionals	91	14.30	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	3	92.32	4.3.1 Access to basic services	110	41.00
2.2.5 Extent of staff training	82	31.63	4.3.2 Pollution	109	51.47
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	89	41.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	32	74.97
2.3.1 Government online services	98	47.70	4.3.5 Maths proficiency in schools	59	27.21
2.3.2 Publication and use of open data	67	20.97	4.3.6 Use of clean fuels and technology	110	2.22
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

Sources

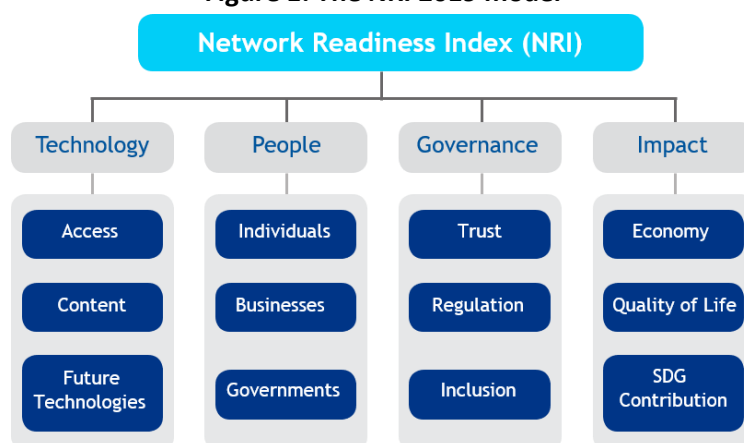
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Network Readiness Index 2019

North Macedonia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

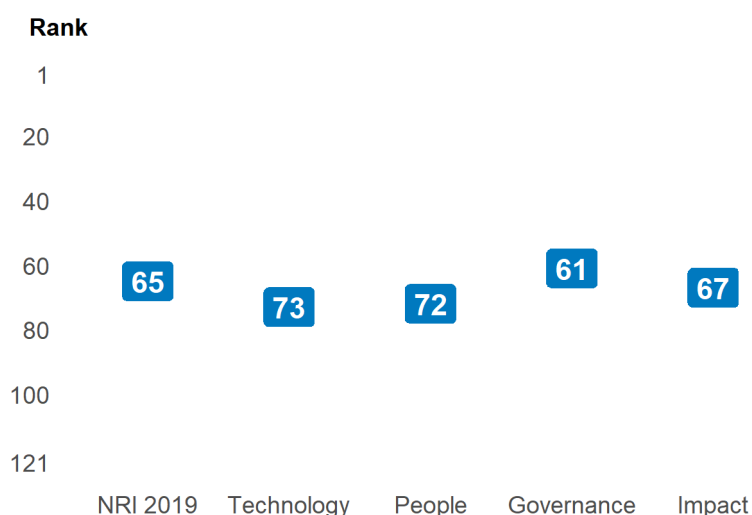
Figure 1: The NRI 2019 model



Global NRI position of North Macedonia

North Macedonia ranks 65th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: North Macedonia global ranking, overall and by pillar



Performance at sub-pillar level

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

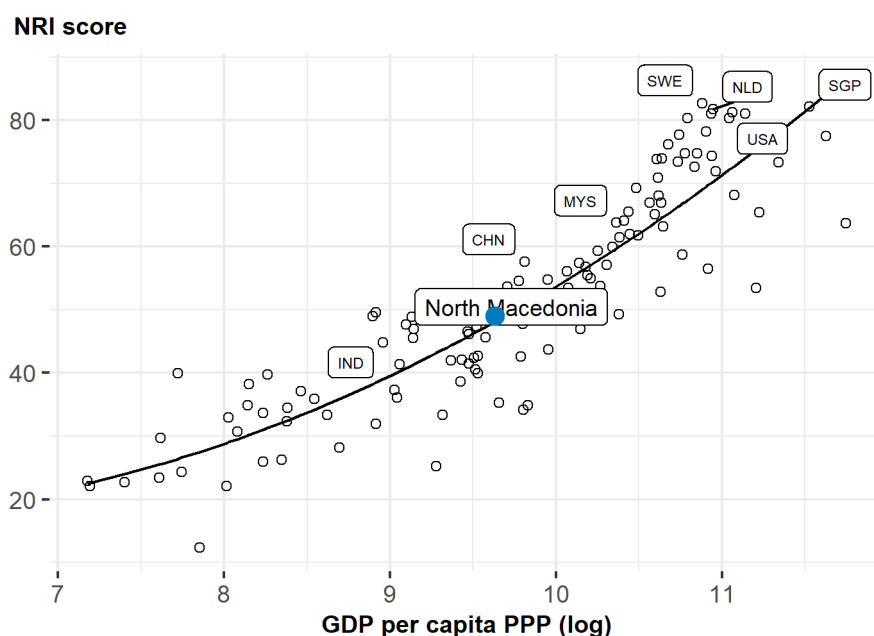
Table 1: North Macedonia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	46	Businesses	69
Regulation	54	Individuals	70
SDG Contribution	55	Governments	71
Access	61	Quality of Life	76
Inclusion	63	Economy	79
Trust	64	Future Technologies	118

NRI score and income

Figure 3 shows the position of North Macedonia 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, North Macedonia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. North Macedonia belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Upper-middle-income countries

North Macedonia is ranked 17th 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 two of the four pillars: Score, Governance and Impact. At the sub-pillar level, it outperforms upper-middle-income countries in eight of the twelve sub-pillars: Access, Content, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

Europe

North Macedonia is ranked 35th within Europe (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 North Macedonia against its income group and region, overall and by pillar

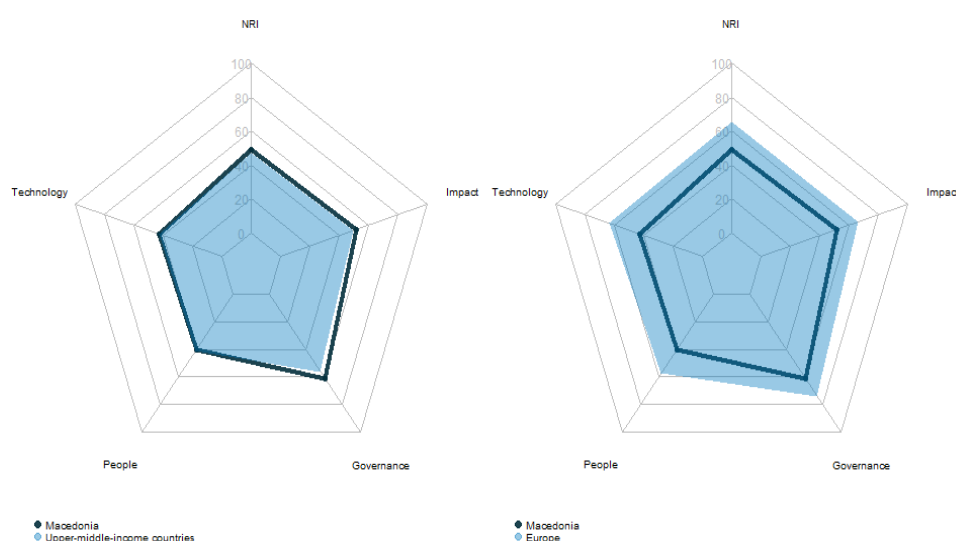


Table 2: North Macedonia scores vs. averages of its income group and region, overall and by pillar

Dimension	North Macedonia	Upper-middle-income countries	Europe
NRI	48.97	47.40	65.20
Technology	42.41	42.66	63.08
People	40.62	41.07	57.50
Governance	61.24	56.24	73.99
Impact	51.60	49.62	66.24

Strongest and weakest indicators

The indicators where North Macedonia performs particularly well include Ease of doing business, 4G mobile network coverage, and Road safety (Table 3). By contrast, the economy's weakest indicators include Extent of staff training, Company investment in emerging technology, and Social safety net protection.

Table 3: Top-ranked and bottom-ranked indicators of North Macedonia

Strongest indicators	Rank	Weakest indicators	Rank
Ease of doing business	16	Handset prices	78
4G mobile network coverage	18	Happiness	81
Road safety	26	High-tech exports	82
Adult literacy rate	32	Use of clean fuels and technology	85
Cybersecurity	36	International Internet bandwidth	88
Digital participation and content creation	43	Pollution	88
Internet users	43	Freedom to make life choices	91
Regulatory quality	43	Social safety net protection	108
Professionals	44	Company investment in emerging technology	113
ICT regulatory environment	45	Extent of staff training	117

NRI 2019 At-A-Glance: North Macedonia

Network Readiness Index

Rank: 65 (out of 121)

Score: 48.97

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	73	42.41	C. Governance pillar	61	61.24
1st sub-pillar: Access	61	67.38	1st sub-pillar: Trust	64	55.01
2nd sub-pillar: Content	46	52.18	2nd sub-pillar: Regulation	54	66.77
3rd sub-pillar: Future Technologies	118	7.67	3rd sub-pillar: Inclusion	63	61.93
B. People pillar	72	40.62	D. Impact pillar	67	51.60
1st sub-pillar: Individuals	70	52.83	1st sub-pillar: Economy	79	14.84
2nd sub-pillar: Businesses	69	27.92	2nd sub-pillar: Quality of Life	76	58.57
3rd sub-pillar: Governments	71	41.12	3rd sub-pillar: SDG Contribution	55	81.40

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	77	57.19	3.1.1 Rule of law	77	46.86
1.1.2 Handset prices	78	39.32	3.1.2 Software piracy rate	62	35.14
1.1.3 Internet access	66	67.10	3.1.3 Secure Internet servers	67	52.39
1.1.4 4G mobile network coverage	18	99.53	3.1.4 Cybersecurity	36	85.64
1.1.5 Fixed-broadband subscriptions	48	78.06	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	88	63.12	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	43	62.98
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	16	89.36
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	NA	NA
1.2.2 Mobile apps development	54	65.14	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	50	0.75	3.2.5 Social safety net protection	108	18.48
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	45	88.03
1.3.1 Availability of latest technologies	NA	NA	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	113	10.46	3.3.1 E-Participation	68	66.24
1.3.3 Government procurement of advanced technology products	NA	NA	3.3.2 Socioeconomic gap in use of digital payments	68	62.80
1.3.4 ICT PCT patent applications	60	3.46	3.3.3 Availability of local online content	NA	NA
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	52	59.18
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	75	59.52
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	43	77.20	4.1.1 Medium and high-tech industry	64	29.24
2.1.2 Active mobile-broadband subscriptions	77	25.17	4.1.2 High-tech exports	82	7.66
2.1.3 Use of virtual social networks	65	52.18	4.1.3 PCT patent applications	75	0.08
2.1.4 Tertiary enrolment	68	29.69	4.1.4 Labour productivity per employee	66	22.36
2.1.5 Adult literacy rate	32	96.63	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	46	36.13	4.2.1 Happiness	81	45.46
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	91	50.06
2.2.1 Firms with website	57	52.05	4.2.3 Income inequality	51	72.11
2.2.2 Internet shopping	56	21.59	4.2.4 Healthy life expectancy at birth	50	66.67
2.2.3 Professionals	44	37.98	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	50	42.65	4.3.1 Access to basic services	54	94.90
2.2.5 Extent of staff training	117	10.88	4.3.2 Pollution	88	74.48
2.2.6 R&D expenditure by businesses	62	2.36	4.3.3 Road safety	26	88.44
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	68	68.46	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	49	32.58	4.3.6 Use of clean fuels and technology	85	67.78
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	65	22.32			

* Confidential data

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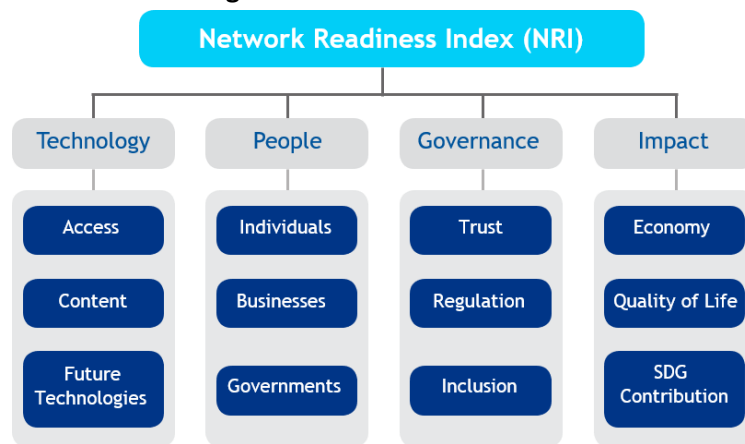
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Network Readiness Index 2019

Norway

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

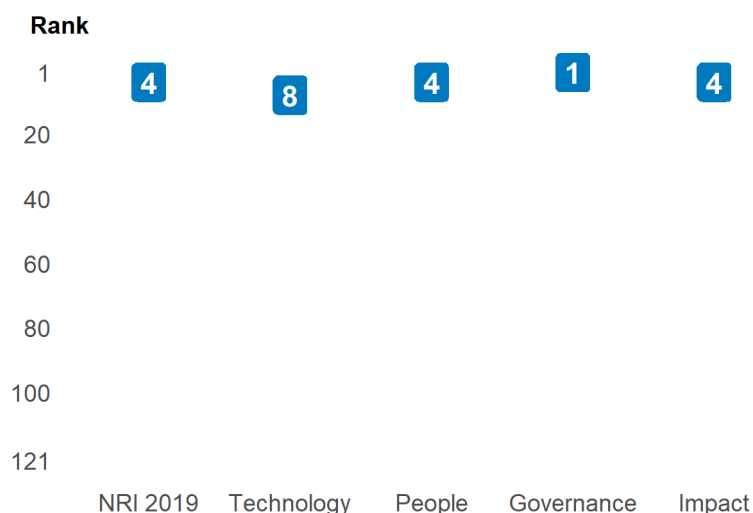
Figure 1: The NRI 2019 model



Global NRI position of Norway

Norway ranks 4th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Norway global ranking, overall and by pillar



Performance at sub-pillar level

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

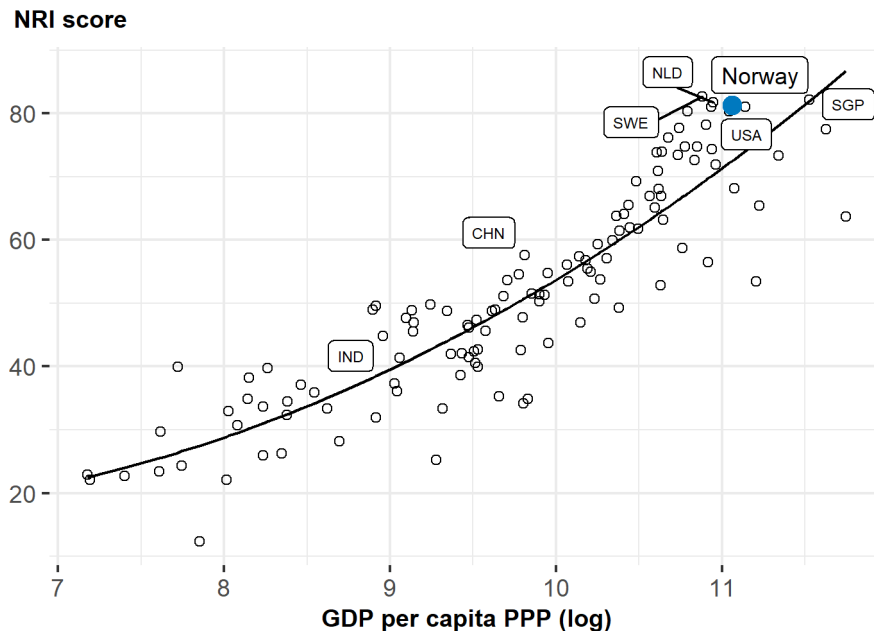
Table 1: Norway rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	1	Inclusion	8
Governments	2	Individuals	9
Trust	2	Future Technologies	10
Regulation	3	Businesses	11
SDG Contribution	4	Content	12
Access	6	Economy	13

NRI score and income

Figure 3 shows the position of Norway 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, Norway 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Norway belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Norway is ranked 4th 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 each of the four pillars. At the sub-pillar level, it has a higher score than the average of high-income countries in all of them.

Europe

Norway is ranked 3rd within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

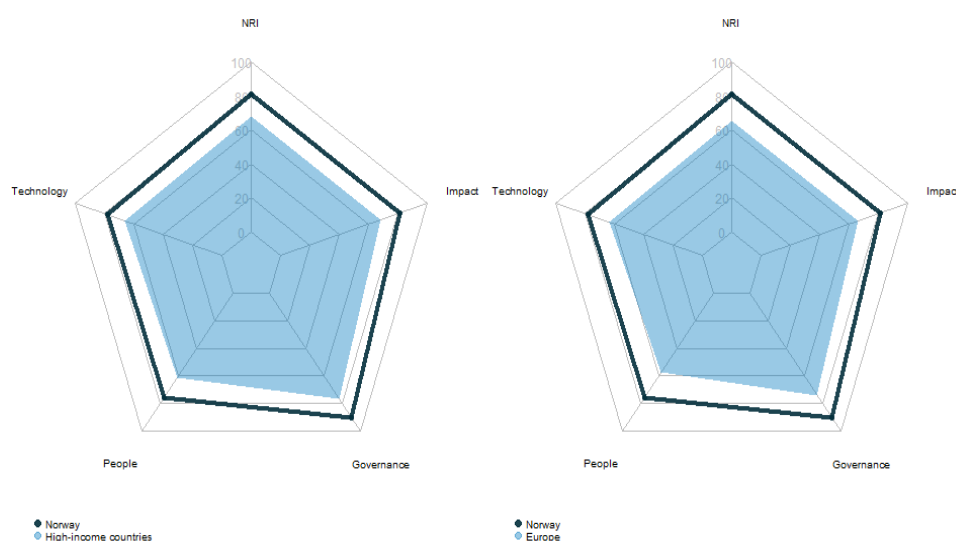


Table 2: Norway scores vs. averages of its income group and region, overall and by pillar

Dimension	Norway	High-income countries	Europe
NRI	81.30	68.12	65.20
Technology	77.69	66.07	63.08
People	76.00	61.07	57.50
Governance	90.30	77.07	73.99
Impact	81.20	68.29	66.24

Strongest and weakest indicators

The indicators where Norway performs particularly well include Internet access in schools, ICT PCT patent applications, and E-commerce legislation (Table 3). By contrast, the economy's weakest indicators include International Internet bandwidth, Access to basic services, and Medium and high-tech industry.

Table 3: Top-ranked and bottom-ranked indicators of Norway

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Handset prices	21
ICT PCT patent applications	1	Use of virtual social networks	21
E-commerce legislation	1	Firms with website	23
Social safety net protection	1	Robot density	26
Socioeconomic gap in use of digital payments	1	Intellectual property receipts	28
Freedom to make life choices	1	Fixed-broadband subscriptions	29
Road safety	1	Active mobile-broadband subscriptions	29
Use of clean fuels and technology	1	Medium and high-tech industry	31
Mobile tariffs	2	Access to basic services	35
Availability of latest technologies	2	International Internet bandwidth	37

NRI 2019 At-A-Glance: Norway

Network Readiness Index

Rank: 4 (out of 121)

Score: 81.30

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	8	77.69	C. Governance pillar	1	90.30
1st sub-pillar: Access	6	89.35	1st sub-pillar: Trust	2	92.66
2nd sub-pillar: Content	12	76.45	2nd sub-pillar: Regulation	3	92.19
3rd sub-pillar: Future Technologies	10	67.29	3rd sub-pillar: Inclusion	8	86.04
B. People pillar	4	76.00	D. Impact pillar	4	81.20
1st sub-pillar: Individuals	9	72.68	1st sub-pillar: Economy	13	52.98
2nd sub-pillar: Businesses	11	70.06	2nd sub-pillar: Quality of Life	1	93.27
3rd sub-pillar: Governments	2	85.27	3rd sub-pillar: SDG Contribution	4	97.34

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	2	98.00	3.1.1 Rule of law	2	98.16
1.1.2 Handset prices	21	67.37	3.1.2 Software piracy rate	10	91.89
1.1.3 Internet access	10	95.73	3.1.3 Secure Internet servers	18	84.86
1.1.4 4G mobile network coverage	9	99.90	3.1.4 Cybersecurity	9	95.72
1.1.5 Fixed-broadband subscriptions	29	92.53	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	37	71.91	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	10	90.14
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	9	92.68
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	17	72.44
1.2.2 Mobile apps development	17	85.89	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	28	1.93	3.2.5 Social safety net protection	1	100.00
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	4	97.88
1.3.1 Availability of latest technologies	2	98.38	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	16	71.31	3.3.1 E-Participation	11	97.45
1.3.3 Government procurement of advanced technology products	17	63.02	3.3.2 Socioeconomic gap in use of digital payments	1	100.00
1.3.4 ICT PCT patent applications	1	100.00	3.3.3 Availability of local online content	11	87.74
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	10	68.53
1.3.6 Robot density	26	16.47	3.3.5 Rural gap in use of digital payments	19	76.50
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	8	96.48	4.1.1 Medium and high-tech industry	31	50.80
2.1.2 Active mobile-broadband subscriptions	29	38.42	4.1.2 High-tech exports	17	40.22
2.1.3 Use of virtual social networks	21	70.89	4.1.3 PCT patent applications	14	39.09
2.1.4 Tertiary enrolment	16	59.78	4.1.4 Labour productivity per employee	5	81.81
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	4	97.84	4.2.1 Happiness	6	91.38
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	1	100.00
2.2.1 Firms with website	23	76.94	4.2.3 Income inequality	9	93.42
2.2.2 Internet shopping	3	96.99	4.2.4 Healthy life expectancy at birth	9	88.28
2.2.3 Professionals	3	71.36	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	17	70.26	4.3.1 Access to basic services	35	98.72
2.2.5 Extent of staff training	13	76.33	4.3.2 Pollution	7	98.54
2.2.6 R&D expenditure by businesses	20	28.46	4.3.3 Road safety	1	100.00
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	3	99.40
2.3.1 Government online services	9	94.62	4.3.5 Maths proficiency in schools	5	87.36
2.3.2 Publication and use of open data	10	73.81	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	10	81.97			
2.3.4 R&D expenditure by governments and higher education	2	90.68			

* Confidential data

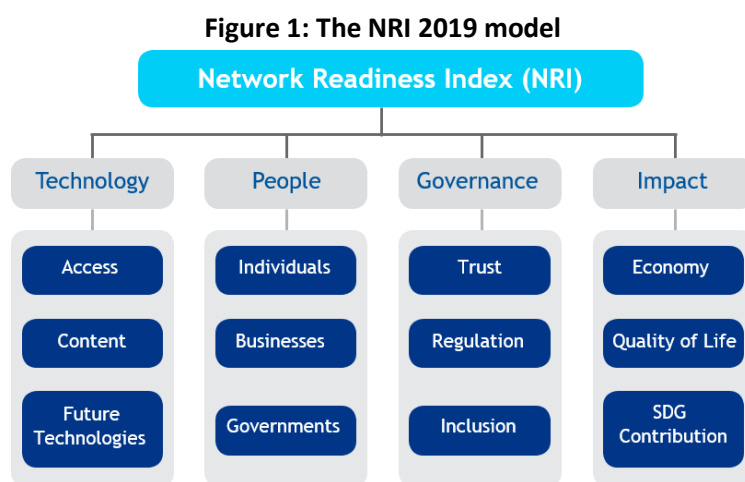
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Network Readiness Index 2019

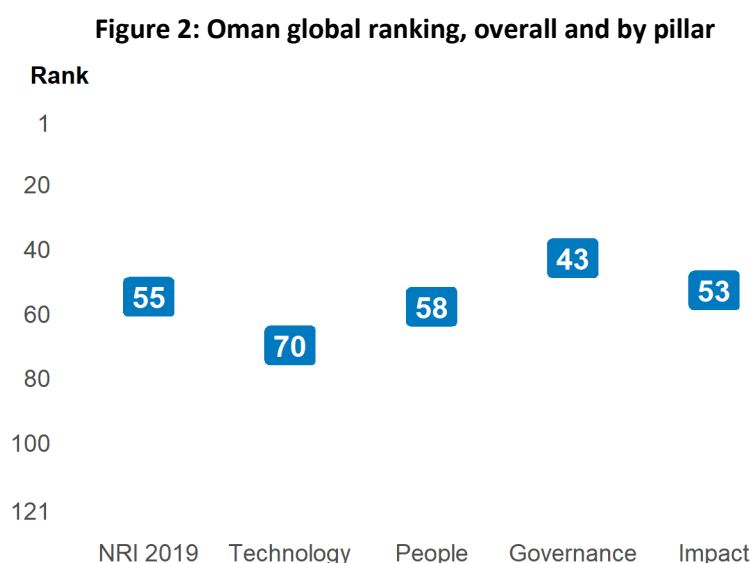
Oman

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Oman

Oman ranks 55th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

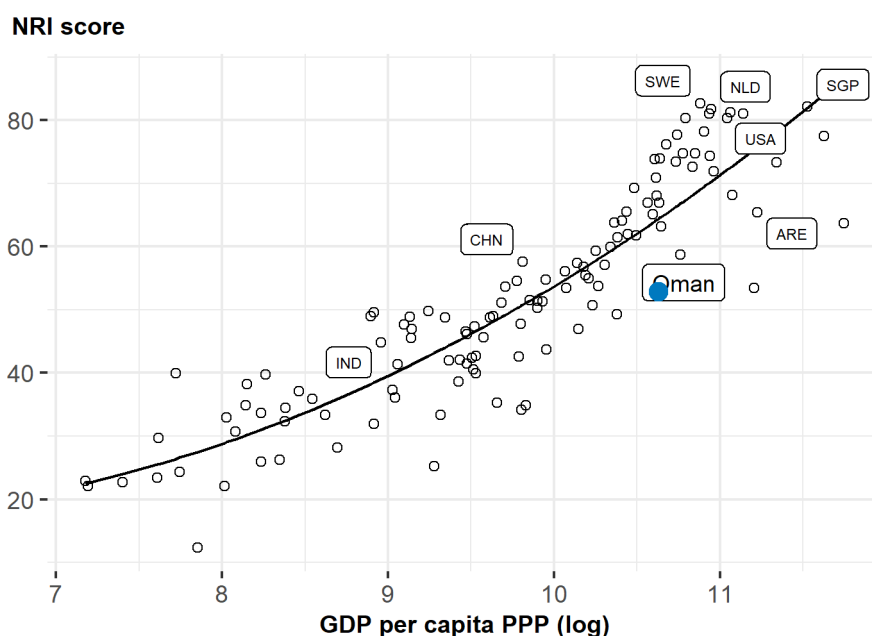
Table 1: Oman rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	24	Access	55
Regulation	33	Future Technologies	56
Governments	49	Individuals	59
Inclusion	49	Businesses	72
Economy	51	SDG Contribution	79
Trust	53	Content	96

NRI score and income

Figure 3 shows the position of Oman 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, Oman 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Oman belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

High-income countries

Oman is ranked 46th 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 outperforms high-income countries in one of the twelve sub-pillars: Quality of Life.

Arab States

Oman is ranked 6th within Arab States (Figure 4, right panel). It has a score above the regional average in three of the four pillars: Score, People, Governance and Impact. With regard to sub-pillars, it outperforms the average in Arab States in ten of the twelve sub-pillars: Access, Future Technology, Individuals, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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

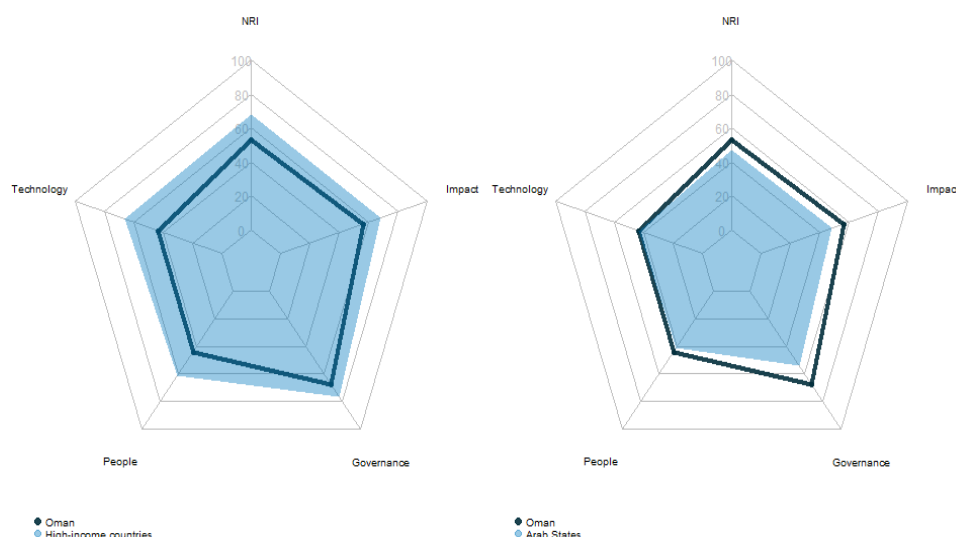


Table 2: Oman scores vs. averages of its income group and region, overall and by pillar

Dimension	Oman	High-income countries	Arab States
NRI	52.87	68.12	46.82
Technology	43.13	66.07	43.54
People	44.00	61.07	41.30
Governance	68.11	77.07	54.28
Impact	56.25	68.29	48.18

Strongest and weakest indicators

The indicators where Oman performs particularly well include Internet access in schools, Use of clean fuels and technology, and Social safety net protection (Table 3). By contrast, the economy's weakest indicators include High-tech exports, Pollution, and Digital participation and content creation.

Table 3: Top-ranked and bottom-ranked indicators of Oman

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Tertiary enrolment	72
Use of clean fuels and technology	1	Healthy life expectancy at birth	73
Social safety net protection	16	Computer software spending	77
Cybersecurity	18	Professionals	83
Freedom to make life choices	19	R&D expenditure by governments and higher education	86
Happiness	22	Fixed-broadband subscriptions	88
Internet access	23	Secure Internet servers	90
ICT regulatory environment	29	Digital participation and content creation	98
Government procurement of advanced technology products	33	Pollution	101
Extent of staff training	35	High-tech exports	105

NRI 2019 At-A-Glance: Oman

Network Readiness Index

Rank: 55 (out of 121)

Score: 52.87

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	70	43.13	C. Governance pillar	43	68.11
1st sub-pillar: Access	55	71.31	1st sub-pillar: Trust	53	60.47
2nd sub-pillar: Content	96	25.81	2nd sub-pillar: Regulation	33	75.98
3rd sub-pillar: Future Technologies	56	32.27	3rd sub-pillar: Inclusion	49	67.88
B. People pillar	58	44.00	D. Impact pillar	53	56.25
1st sub-pillar: Individuals	59	56.32	1st sub-pillar: Economy	51	24.35
2nd sub-pillar: Businesses	72	26.98	2nd sub-pillar: Quality of Life	24	76.67
3rd sub-pillar: Governments	49	48.69	3rd sub-pillar: SDG Contribution	79	67.74

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	41	72.29	3.1.1 Rule of law	43	63.93
1.1.2 Handset prices	53	51.70	3.1.2 Software piracy rate	57	39.19
1.1.3 Internet access	23	87.79	3.1.3 Secure Internet servers	90	43.10
1.1.4 4G mobile network coverage	50	96.05	3.1.4 Cybersecurity	18	93.09
1.1.5 Fixed-broadband subscriptions	88	21.04	3.1.5 Online trust and safety	50	63.01
1.1.6 International Internet bandwidth	47	70.29	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	54	58.24
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	62	70.32
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	NA	NA
1.2.2 Mobile apps development	72	54.43	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	16	84.46
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	29	91.89
1.3.1 Availability of latest technologies	59	55.03	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	43	45.78	3.3.1 E-Participation	43	80.90
1.3.3 Government procurement of advanced technology products	33	51.32	3.3.2 Socioeconomic gap in use of digital payments	NA	NA
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	NA	NA
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	66	54.87
1.3.6 Robot density	64	0.14	3.3.5 Rural gap in use of digital payments	NA	NA
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	39	78.33	4.1.1 Medium and high-tech industry	69	27.84
2.1.2 Active mobile-broadband subscriptions	53	32.45	4.1.2 High-tech exports	105	2.11
2.1.3 Use of virtual social networks	69	50.10	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	72	27.41	4.1.4 Labour productivity per employee	36	43.09
2.1.5 Adult literacy rate	44	93.30	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	22	79.06
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	19	89.78
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	NA	NA	4.2.4 Healthy life expectancy at birth	73	61.17
2.2.3 Professionals	83	17.62	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	69	31.87	4.3.1 Access to basic services	55	94.68
2.2.5 Extent of staff training	35	56.31	4.3.2 Pollution	101	63.30
2.2.6 R&D expenditure by businesses	64	2.13	4.3.3 Road safety	69	58.12
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	49	59.13
2.3.1 Government online services	43	79.23	4.3.5 Maths proficiency in schools	57	31.20
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	41	55.47			
2.3.4 R&D expenditure by governments and higher education	86	11.38			

* Confidential data

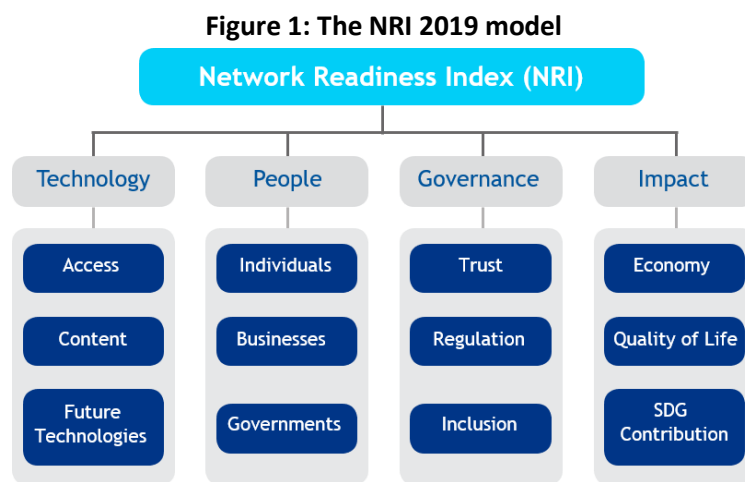
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Network Readiness Index 2019

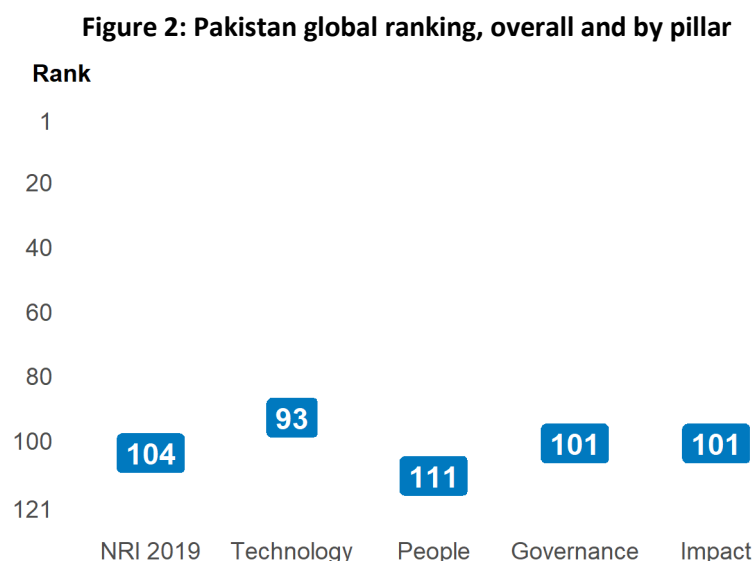
Pakistan

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Pakistan

Pakistan ranks 104th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

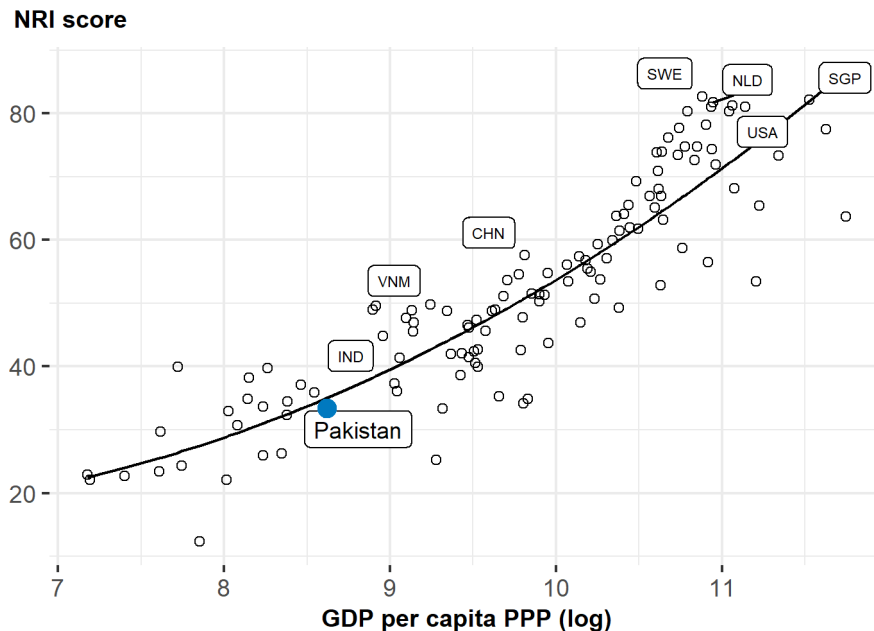
Table 1: Pakistan rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	65	Content	95
Economy	88	Regulation	95
Quality of Life	89	Governments	99
Trust	93	SDG Contribution	104
Access	94	Inclusion	112
Businesses	94	Individuals	116

NRI score and income

Figure 3 shows the position of Pakistan 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, Pakistan 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Pakistan belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

Pakistan is ranked 18th 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: Technology. At the sub-pillar level, it outperforms lower-middle-income countries in six of the twelve sub-pillars: Content, Future Technology, Businesses, Trust, Regulation and Quality of Life.

Asia & Pacific

Pakistan is ranked 18th 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 Pakistan against its income group and region, overall and by pillar



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

Dimension	Pakistan	Lower-middle-income countries	Asia & Pacific
NRI	33.38	37.18	52.44
Technology	32.45	32.15	48.56
People	21.07	30.04	44.85
Governance	43.37	46.17	61.84
Impact	36.63	40.35	54.50

Strongest and weakest indicators

The indicators where Pakistan performs particularly well include Online trust and safety, Government procurement of advanced technology products, and Computer software spending (Table 3). By contrast, the economy's weakest indicators include Internet users, Internet shopping, Active mobile-broadband subscriptions, and Pollution.

Table 3: Top-ranked and bottom-ranked indicators of Pakistan

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	17	E-commerce legislation	100
Government procurement of advanced technology products	30	Regulatory quality	103
Computer software spending	30	Internet access	104
Income inequality	39	Healthy life expectancy at birth	104
ICT regulatory environment	40	Use of virtual social networks	105
Company investment in emerging technology	49	Tertiary enrolment	105
Legal framework's adaptability to digital business models	52	Active mobile-broadband subscriptions	111
Extent of staff training	58	Pollution	111
ICT skills	61	Internet shopping	114
Road safety	61	Internet users	115

NRI 2019 At-A-Glance: Pakistan

Network Readiness Index

Rank: 104 (out of 121)

Score: 33.38

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	93	32.45	C. Governance pillar	101	43.37
1st sub-pillar: Access	94	41.91	1st sub-pillar: Trust	93	41.34
2nd sub-pillar: Content	95	25.96	2nd sub-pillar: Regulation	95	52.61
3rd sub-pillar: Future Technologies	65	29.49	3rd sub-pillar: Inclusion	112	36.14
B. People pillar	111	21.07	D. Impact pillar	101	36.63
1st sub-pillar: Individuals	116	12.59	1st sub-pillar: Economy	88	11.31
2nd sub-pillar: Businesses	94	21.47	2nd sub-pillar: Quality of Life	89	54.16
3rd sub-pillar: Governments	99	29.15	3rd sub-pillar: SDG Contribution	104	44.42

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	67	61.32	3.1.1 Rule of law	99	37.98
1.1.2 Handset prices	98	29.63	3.1.2 Software piracy rate	93	8.11
1.1.3 Internet access	104	16.93	3.1.3 Secure Internet servers	96	40.00
1.1.4 4G mobile network coverage	89	68.60	3.1.4 Cybersecurity	91	42.54
1.1.5 Fixed-broadband subscriptions	94	12.88	3.1.5 Online trust and safety	17	78.08
1.1.6 International Internet bandwidth	93	62.13	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	103	37.22
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	92	54.34
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	52	45.82
1.2.2 Mobile apps development	92	45.19	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	72	0.19	3.2.5 Social safety net protection	70	39.12
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	40	89.19
1.3.1 Availability of latest technologies	68	51.59	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	49	43.86	3.3.1 E-Participation	99	43.31
1.3.3 Government procurement of advanced technology products	30	53.93	3.3.2 Socioeconomic gap in use of digital payments	95	42.35
1.3.4 ICT PCT patent applications	78	0.28	3.3.3 Availability of local online content	74	46.78
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	85	0.00
1.3.6 Robot density	70	0.00	3.3.5 Rural gap in use of digital payments	97	48.25
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	115	6.35	4.1.1 Medium and high-tech industry	62	31.28
2.1.2 Active mobile-broadband subscriptions	111	9.51	4.1.2 High-tech exports	95	4.16
2.1.3 Use of virtual social networks	105	15.80	4.1.3 PCT patent applications	87	0.00
2.1.4 Tertiary enrolment	105	6.08	4.1.4 Labour productivity per employee	88	9.81
2.1.5 Adult literacy rate	92	36.68	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	61	1.11	4.2.1 Happiness	70	50.29
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	82	56.49
2.2.1 Firms with website	72	36.74	4.2.3 Income inequality	39	77.63
2.2.2 Internet shopping	114	1.05	4.2.4 Healthy life expectancy at birth	104	32.23
2.2.3 Professionals	99	11.91	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	96	16.55	4.3.1 Access to basic services	99	67.90
2.2.5 Extent of staff training	58	41.09	4.3.2 Pollution	111	44.15
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	61	63.75
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	61	34.62
2.3.1 Government online services	96	50.00	4.3.5 Maths proficiency in schools	68	12.75
2.3.2 Publication and use of open data	97	3.59	4.3.6 Use of clean fuels and technology	95	43.33
2.3.3 ICT use and government efficiency	63	42.47			
2.3.4 R&D expenditure by governments and higher education	68	20.54			

* Confidential data

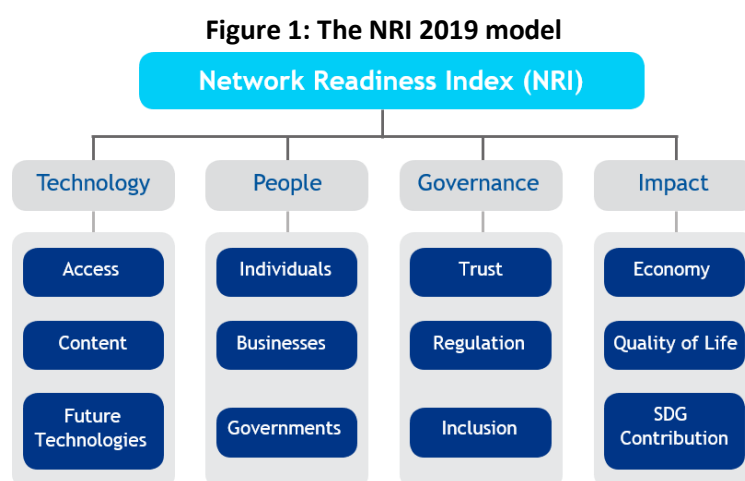
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Network Readiness Index 2019

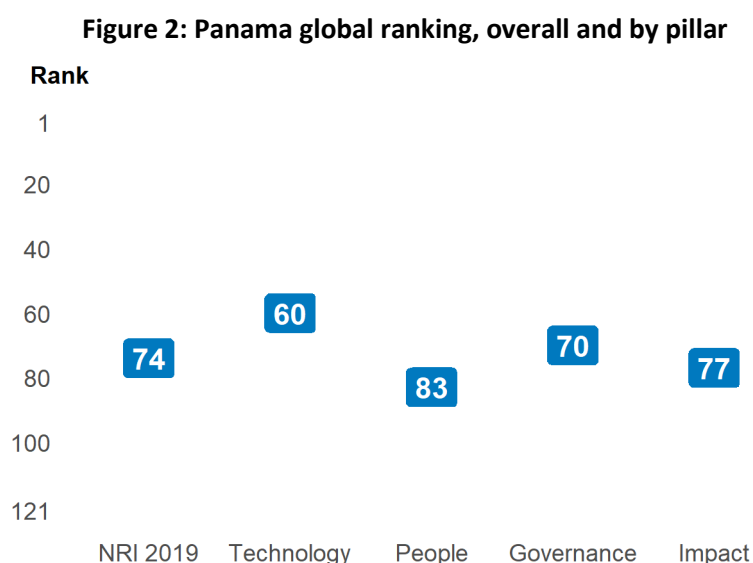
Panama

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Panama

Panama ranks 74th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

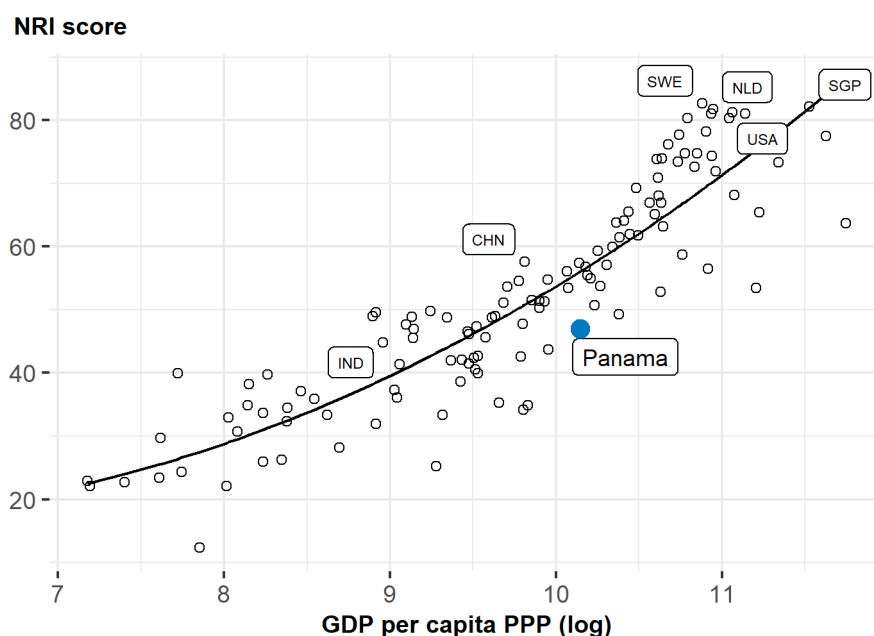
Table 1: Panama rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	45	Individuals	75
Quality of Life	56	Access	77
Content	57	Inclusion	83
Trust	65	Businesses	93
Regulation	67	Governments	94
SDG Contribution	72	Economy	94

NRI score and income

Figure 3 shows the position of Panama 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, Panama 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Panama belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

High-income countries

Panama is ranked 48th 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.

The Americas

Panama is ranked 11th within The Americas (Figure 4, right panel). It has a score above the regional average in two of the four pillars: Technology and Governance. With regard to sub-pillars, it outperforms the average in The Americas in four of the twelve sub-pillars: Content, Future Technology, Trust and Regulation.

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

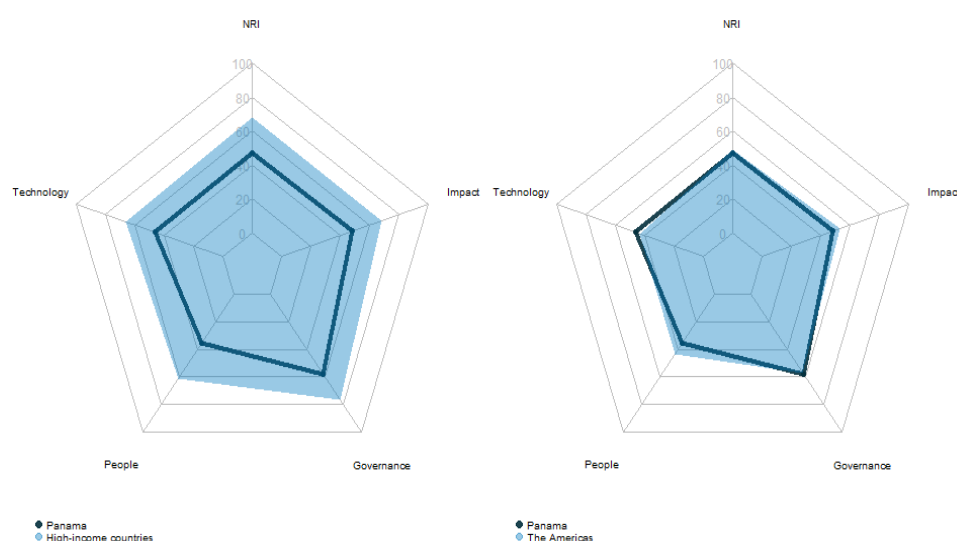


Table 2: Panama scores vs. averages of its income group and region, overall and by pillar

Dimension	Panama	High-income countries	The Americas
NRI	46.96	68.12	49.08
Technology	46.38	66.07	43.12
People	35.50	61.07	43.32
Governance	57.81	77.07	57.13
Impact	48.16	68.29	52.73

Strongest and weakest indicators

The indicators where Panama performs particularly well include Online trust and safety, Gender gap in internet use, and Pollution (Table 3). By contrast, the economy's weakest indicators include 4G mobile network coverage, Rural gap in use of digital payments, and Medium and high-tech industry.

Table 3: Top-ranked and bottom-ranked indicators of Panama

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	2	Firms with website	82
Gender gap in internet use	3	Access to basic services	83
Pollution	19	R&D expenditure by businesses	91
Handset prices	28	Cybersecurity	95
Healthy life expectancy at birth	31	Socioeconomic gap in use of digital payments	99
Happiness	35	Income inequality	99
Availability of latest technologies	36	R&D expenditure by governments and higher education	103
PCT patent applications	36	Rural gap in use of digital payments	108
International Internet bandwidth	41	Medium and high-tech industry	108
ICT PCT patent applications	44	4G mobile network coverage	109

NRI 2019 At-A-Glance: Panama

Network Readiness Index

Rank: 74 (out of 121)

Score: 46.96

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	60	46.38	C. Governance pillar	70	57.81
1st sub-pillar: Access	77	54.32	1st sub-pillar: Trust	65	54.99
2nd sub-pillar: Content	57	48.59	2nd sub-pillar: Regulation	67	63.10
3rd sub-pillar: Future Technologies	45	36.23	3rd sub-pillar: Inclusion	83	55.36
B. People pillar	83	35.50	D. Impact pillar	77	48.16
1st sub-pillar: Individuals	75	51.71	1st sub-pillar: Economy	94	9.54
2nd sub-pillar: Businesses	93	21.75	2nd sub-pillar: Quality of Life	56	63.45
3rd sub-pillar: Governments	94	33.05	3rd sub-pillar: SDG Contribution	72	71.50

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	76	57.36	3.1.1 Rule of law	63	51.98
1.1.2 Handset prices	28	64.54	3.1.2 Software piracy rate	72	24.32
1.1.3 Internet access	73	58.09	3.1.3 Secure Internet servers	51	65.43
1.1.4 4G mobile network coverage	109	33.00	3.1.4 Cybersecurity	95	38.38
1.1.5 Fixed-broadband subscriptions	77	41.75	3.1.5 Online trust and safety	2	94.82
1.1.6 International Internet bandwidth	41	71.19	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	52	60.26
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	79	64.26
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	53	45.70
1.2.2 Mobile apps development	56	64.16	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	68	0.22	3.2.5 Social safety net protection	54	46.48
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	50	86.88
1.3.1 Availability of latest technologies	36	68.87	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	63	35.34	3.3.1 E-Participation	63	68.15
1.3.3 Government procurement of advanced technology products	45	46.05	3.3.2 Socioeconomic gap in use of digital payments	99	41.27
1.3.4 ICT PCT patent applications	44	12.71	3.3.3 Availability of local online content	61	54.16
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	3	75.79
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	108	37.42
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	82	53.49	4.1.1 Medium and high-tech industry	108	7.65
2.1.2 Active mobile-broadband subscriptions	72	26.37	4.1.2 High-tech exports	49	17.41
2.1.3 Use of virtual social networks	68	51.14	4.1.3 PCT patent applications	36	3.55
2.1.4 Tertiary enrolment	63	34.60	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	45	92.93	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	35	67.16
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	47	77.08
2.2.1 Firms with website	82	28.43	4.2.3 Income inequality	99	34.47
2.2.2 Internet shopping	80	7.81	4.2.4 Healthy life expectancy at birth	31	75.09
2.2.3 Professionals	63	27.03	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	63	33.22	4.3.1 Access to basic services	83	86.61
2.2.5 Extent of staff training	75	33.97	4.3.2 Pollution	19	93.85
2.2.6 R&D expenditure by businesses	91	0.02	4.3.3 Road safety	61	63.75
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	56	51.02
2.3.1 Government online services	77	62.31	4.3.5 Maths proficiency in schools	49	39.36
2.3.2 Publication and use of open data	75	17.90	4.3.6 Use of clean fuels and technology	72	94.44
2.3.3 ICT use and government efficiency	47	50.00			
2.3.4 R&D expenditure by governments and higher education	103	1.98			

* Confidential data

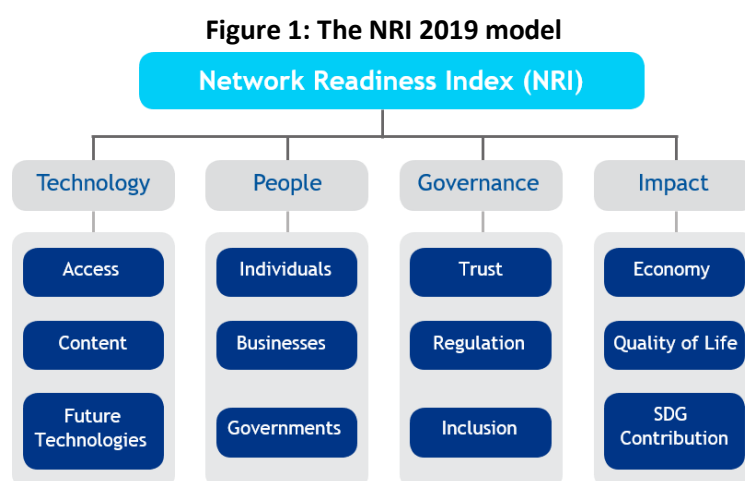
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Network Readiness Index 2019

Paraguay

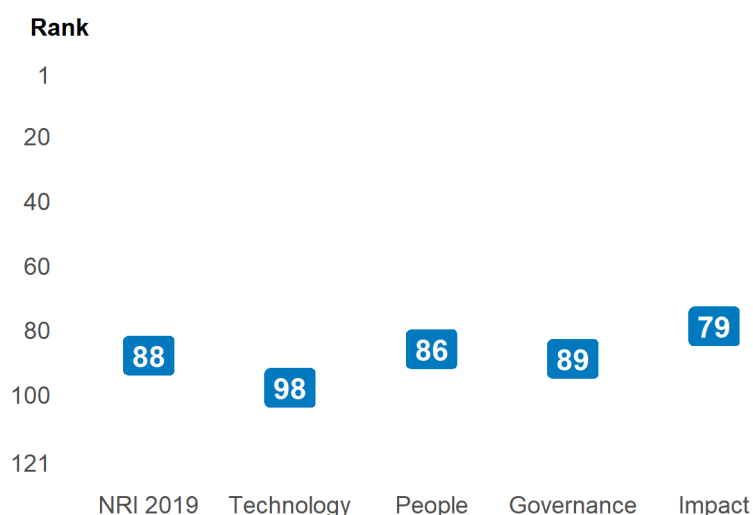
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Paraguay

Paraguay ranks 88th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Paraguay global ranking, overall and by pillar



Performance at sub-pillar level

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

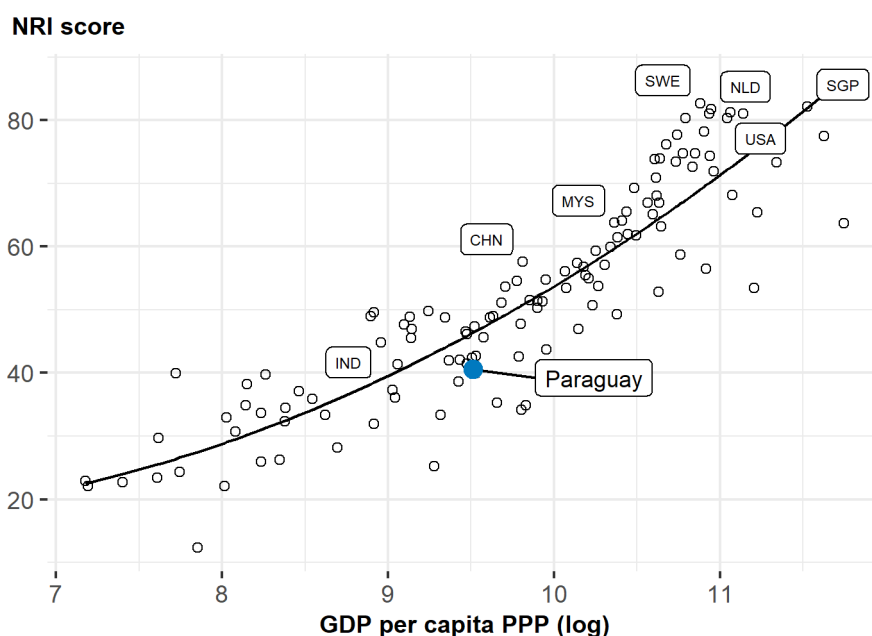
Table 1: Paraguay rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	57	SDG Contribution	88
Inclusion	73	Regulation	93
Quality of Life	73	Trust	97
Content	80	Governments	101
Businesses	81	Access	102
Individuals	82	Future Technologies	109

NRI score and income

Figure 3 shows the position of Paraguay 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, Paraguay 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Paraguay belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Paraguay is ranked 32nd in the group of upper-middle-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 outperforms upper-middle-income countries in three of the twelve sub-pillars: Inclusion, Economy and Quality of Life.

The Americas

Paraguay is ranked 16th 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 one of the twelve sub-pillars: Economy.

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



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

Dimension	Paraguay	Upper-middle-income countries	The Americas
NRI	40.55	47.40	49.08
Technology	29.40	42.66	43.12
People	34.35	41.07	43.32
Governance	50.61	56.24	57.13
Impact	47.82	49.62	52.73

Strongest and weakest indicators

The indicators where Paraguay performs particularly well include E-commerce legislation, Rural gap in use of digital payments, and Gender gap in internet use (Table 3). By contrast, the economy's weakest indicators include Company investment in emerging technology, Availability of latest technologies, and Fixed-broadband subscriptions.

Table 3: Top-ranked and bottom-ranked indicators of Paraguay

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Internet access	98
Rural gap in use of digital payments	4	Social safety net protection	99
Gender gap in internet use	6	Extent of staff training	100
Pollution	18	Ease of doing business	101
Firms with website	31	Availability of local online content	101
Freedom to make life choices	31	Internet shopping	106
High-tech exports	48	ICT regulatory environment	108
Adult literacy rate	53	Fixed-broadband subscriptions	109
Publication and use of open data	53	Availability of latest technologies	110
Maths proficiency in schools	55	Company investment in emerging technology	111

NRI 2019 At-A-Glance: Paraguay

Network Readiness Index

Rank: 88 (out of 121)

Score: 40.55

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	98	29.40	C. Governance pillar	89	50.61
1st sub-pillar: Access	102	35.58	1st sub-pillar: Trust	97	40.04
2nd sub-pillar: Content	80	34.85	2nd sub-pillar: Regulation	93	53.11
3rd sub-pillar: Future Technologies	109	17.78	3rd sub-pillar: Inclusion	73	58.69
B. People pillar	86	34.35	D. Impact pillar	79	47.82
1st sub-pillar: Individuals	82	50.09	1st sub-pillar: Economy	57	23.09
2nd sub-pillar: Businesses	81	24.29	2nd sub-pillar: Quality of Life	73	59.18
3rd sub-pillar: Governments	101	28.66	3rd sub-pillar: SDG Contribution	88	61.20

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	82	53.48	3.1.1 Rule of law	94	40.99
1.1.2 Handset prices	68	43.99	3.1.2 Software piracy rate	93	8.11
1.1.3 Internet access	98	19.35	3.1.3 Secure Internet servers	81	47.04
1.1.4 4G mobile network coverage	93	65.00	3.1.4 Cybersecurity	67	64.04
1.1.5 Fixed-broadband subscriptions	109	0.66	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	95	61.54	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	63	5.02	3.2.1 Regulatory quality	79	48.68
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	101	50.98
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	84	35.07
1.2.2 Mobile apps development	74	53.81	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	99	25.03
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	108	58.88
1.3.1 Availability of latest technologies	110	27.96	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	111	12.24	3.3.1 E-Participation	91	51.59
1.3.3 Government procurement of advanced technology products	85	30.94	3.3.2 Socioeconomic gap in use of digital payments	67	62.91
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	101	26.48
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	6	70.51
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	4	81.99
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	71	61.43	4.1.1 Medium and high-tech industry	70	27.82
2.1.2 Active mobile-broadband subscriptions	86	21.17	4.1.2 High-tech exports	48	18.36
2.1.3 Use of virtual social networks	65	52.18	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	77	24.90	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	53	90.77	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	64	55.32
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	31	83.96
2.2.1 Firms with website	31	68.80	4.2.3 Income inequality	97	37.37
2.2.2 Internet shopping	106	3.22	4.2.4 Healthy life expectancy at birth	78	60.07
2.2.3 Professionals	90	15.26	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	66	32.37	4.3.1 Access to basic services	64	93.00
2.2.5 Extent of staff training	100	26.07	4.3.2 Pollution	18	93.88
2.2.6 R&D expenditure by businesses	93	0.01	4.3.3 Road safety	93	37.50
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	59	42.36
2.3.1 Government online services	95	50.78	4.3.5 Maths proficiency in schools	55	32.65
2.3.2 Publication and use of open data	53	28.07	4.3.6 Use of clean fuels and technology	85	67.78
2.3.3 ICT use and government efficiency	97	26.16			
2.3.4 R&D expenditure by governments and higher education	89	9.62			

* Confidential data

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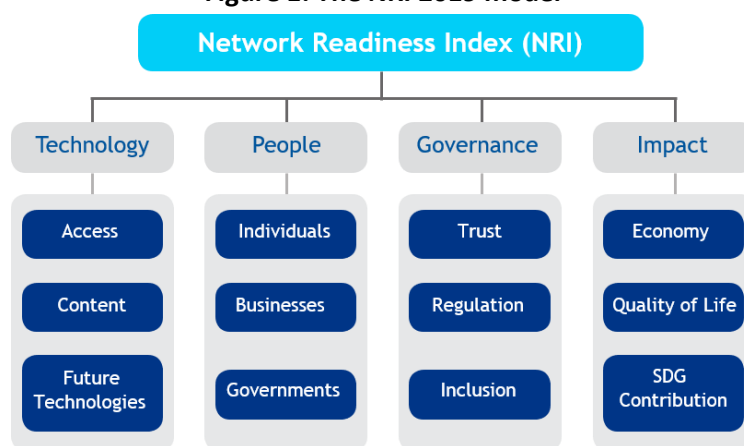
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Network Readiness Index 2019

Peru

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

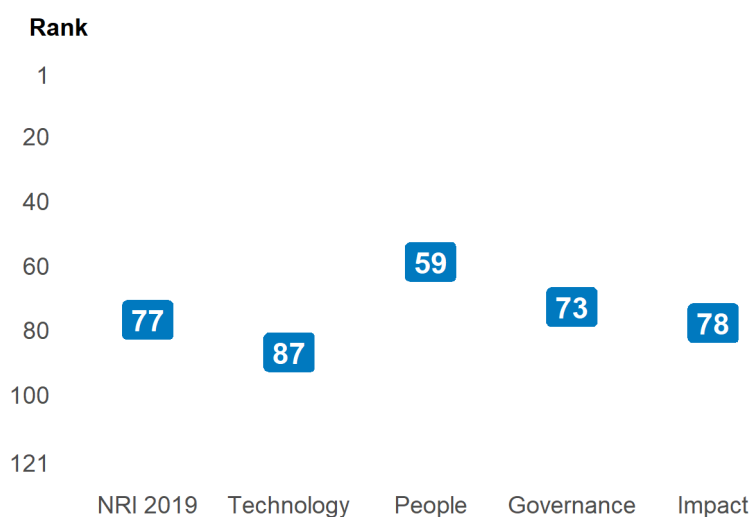
Figure 1: The NRI 2019 model



Global NRI position of Peru

Peru ranks 77th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Peru global ranking, overall and by pillar



Performance at sub-pillar level

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

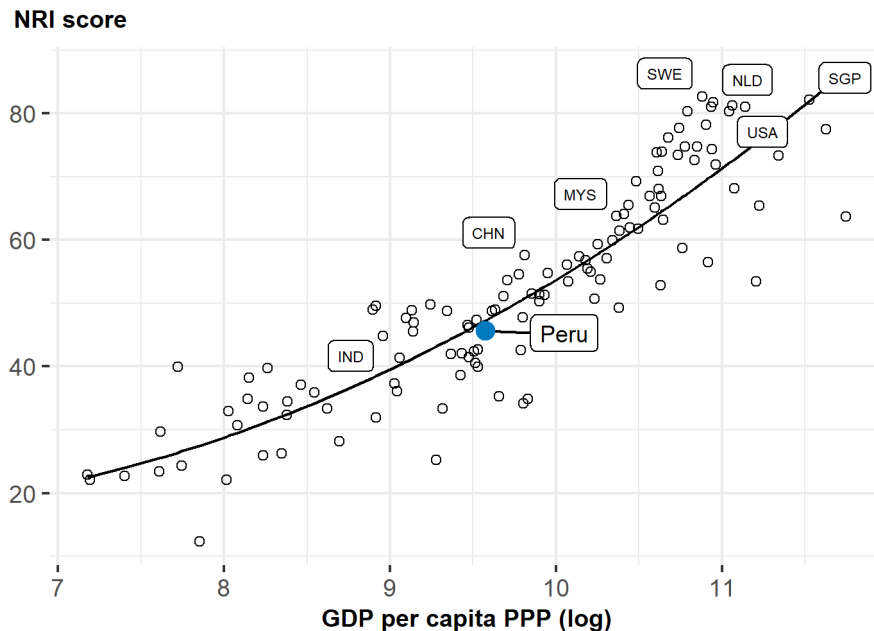
Table 1: Peru rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	50	Trust	75
Individuals	53	Inclusion	81
Regulation	66	Governments	84
Quality of Life	67	Access	87
SDG Contribution	71	Economy	89
Content	72	Future Technologies	112

NRI score and income

Figure 3 shows the position of Peru 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, Peru 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Peru belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Peru is ranked 24th 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 two of the four pillars: People and Governance. At the sub-pillar level, it outperforms upper-middle-income countries in four of the twelve sub-pillars: Individuals, Businesses, Regulation and Quality of Life.

The Americas

Peru is ranked 12th within The Americas (Figure 4, right panel). It has a score above the regional average in one of the four pillars: People. With regard to sub-pillars, it outperforms the average in The Americas in three of the twelve sub-pillars: Individuals, Businesses and Regulation.

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



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

Dimension	Peru	Upper-middle-income countries	The Americas
NRI	45.68	47.40	49.08
Technology	34.75	42.66	43.12
People	43.72	41.07	43.32
Governance	56.33	56.24	57.13
Impact	47.90	49.62	52.73

Strongest and weakest indicators

The indicators where Peru performs particularly well include E-commerce legislation, Online trust and safety, and Mobile tariffs (Table 3). By contrast, the economy's weakest indicators include Extent of staff training, Socioeconomic gap in use of digital payments, Company investment in emerging technology, and Government procurement of advanced technology products.

Table 3: Top-ranked and bottom-ranked indicators of Peru

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Rule of law	93
Online trust and safety	13	Access to basic services	93
Mobile tariffs	14	Cybersecurity	94
Use of virtual social networks	17	Social safety net protection	94
Tertiary enrolment	27	R&D expenditure by governments and higher education	98
Maths proficiency in schools	33	4G mobile network coverage	99
Technicians and associate professionals	36	Company investment in emerging technology	102
E-Participation	36	Government procurement of advanced technology products	102
Firms with website	38	Socioeconomic gap in use of digital payments	105
Reading proficiency in schools	38	Extent of staff training	112

NRI 2019 At-A-Glance: Peru

Network Readiness Index

Rank: 77 (out of 121)

Score: 45.68

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	87	34.75	C. Governance pillar	73	56.33
1st sub-pillar: Access	87	48.60	1st sub-pillar: Trust	75	49.89
2nd sub-pillar: Content	72	38.12	2nd sub-pillar: Regulation	66	63.66
3rd sub-pillar: Future Technologies	112	17.53	3rd sub-pillar: Inclusion	81	55.43
B. People pillar	59	43.72	D. Impact pillar	78	47.90
1st sub-pillar: Individuals	53	57.57	1st sub-pillar: Economy	89	10.94
2nd sub-pillar: Businesses	50	34.86	2nd sub-pillar: Quality of Life	67	61.08
3rd sub-pillar: Governments	84	38.75	3rd sub-pillar: SDG Contribution	71	71.70

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	14	87.40	3.1.1 Rule of law	93	41.54
1.1.2 Handset prices	52	52.02	3.1.2 Software piracy rate	60	36.49
1.1.3 Internet access	93	25.10	3.1.3 Secure Internet servers	80	47.34
1.1.4 4G mobile network coverage	99	52.24	3.1.4 Cybersecurity	94	41.89
1.1.5 Fixed-broadband subscriptions	91	17.39	3.1.5 Online trust and safety	13	82.19
1.1.6 International Internet bandwidth	78	65.54	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	46	40.53	3.2.1 Regulatory quality	44	62.83
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	69	68.04
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	85	34.45
1.2.2 Mobile apps development	76	52.49	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	70	0.20	3.2.5 Social safety net protection	94	28.64
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	45	88.03
1.3.1 Availability of latest technologies	87	40.84	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	102	18.81	3.3.1 E-Participation	36	84.72
1.3.3 Government procurement of advanced technology products	102	25.61	3.3.2 Socioeconomic gap in use of digital payments	105	38.38
1.3.4 ICT PCT patent applications	69	1.53	3.3.3 Availability of local online content	91	34.99
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	72	50.00
1.3.6 Robot density	63	0.19	3.3.5 Rural gap in use of digital payments	58	69.07
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	88	47.57	4.1.1 Medium and high-tech industry	86	20.10
2.1.2 Active mobile-broadband subscriptions	79	24.45	4.1.2 High-tech exports	80	8.65
2.1.3 Use of virtual social networks	17	72.97	4.1.3 PCT patent applications	71	0.22
2.1.4 Tertiary enrolment	27	51.49	4.1.4 Labour productivity per employee	77	14.79
2.1.5 Adult literacy rate	52	91.37	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	66	54.62
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	60	69.71
2.2.1 Firms with website	38	65.68	4.2.3 Income inequality	85	51.84
2.2.2 Internet shopping	88	5.56	4.2.4 Healthy life expectancy at birth	46	68.13
2.2.3 Professionals	60	27.82	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	36	54.45	4.3.1 Access to basic services	93	77.23
2.2.5 Extent of staff training	112	20.77	4.3.2 Pollution	79	79.08
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	55	66.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	38	67.92
2.3.1 Government online services	41	80.00	4.3.5 Maths proficiency in schools	33	60.83
2.3.2 Publication and use of open data	48	33.33	4.3.6 Use of clean fuels and technology	82	78.89
2.3.3 ICT use and government efficiency	84	35.99			
2.3.4 R&D expenditure by governments and higher education	98	5.66			

* Confidential data

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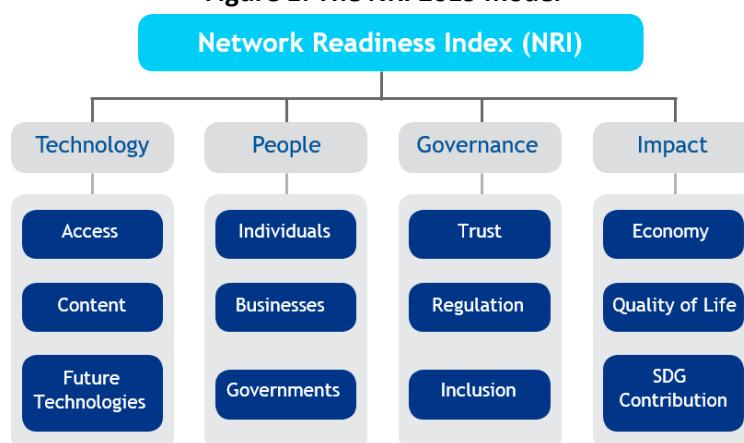
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Network Readiness Index 2019

Philippines

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

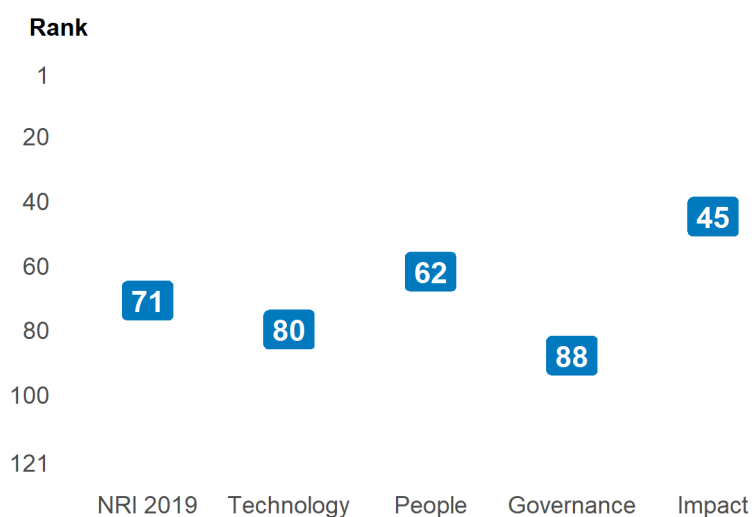
Figure 1: The NRI 2019 model



Global NRI position of Philippines

Philippines ranks 71st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Philippines global ranking, overall and by pillar



Performance at sub-pillar level

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

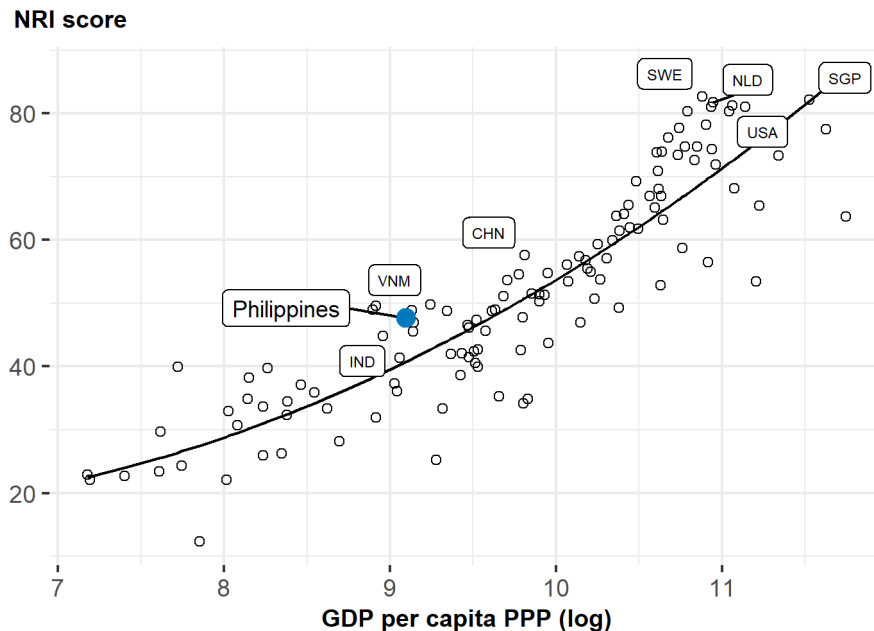
Table 1: Philippines rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	21	Content	74
Governments	60	Businesses	77
Individuals	65	SDG Contribution	77
Quality of Life	66	Regulation	78
Future Technologies	70	Access	83
Trust	71	Inclusion	100

NRI score and income

Figure 3 shows the position of Philippines 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, Philippines 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Philippines belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

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

Asia & Pacific

Philippines is ranked 11th within Asia & Pacific (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Impact. With regard to sub-pillars, it outperforms the average in Asia & Pacific in three of the twelve sub-pillars: Individuals, Economy and SDG Contribution.

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

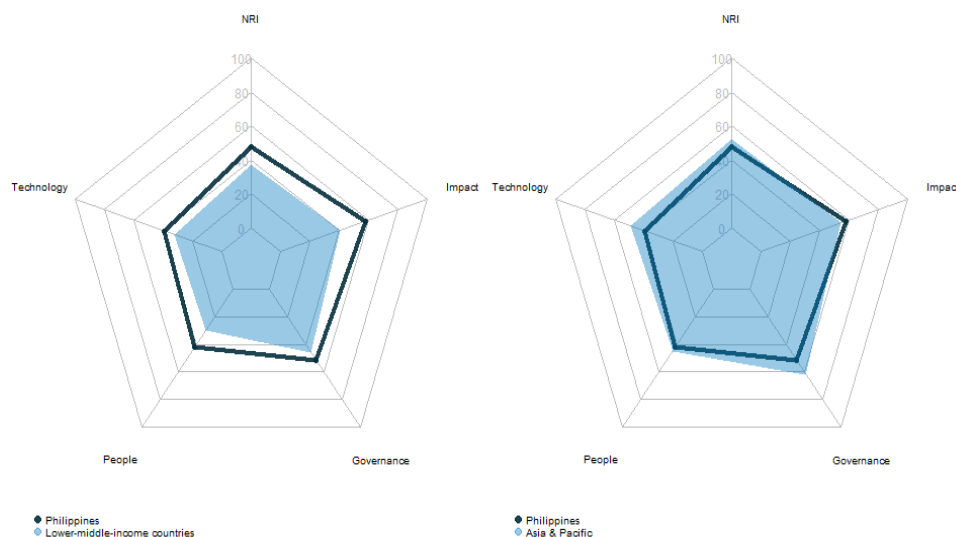


Table 2: Philippines scores vs. averages of its income group and region, overall and by pillar

Dimension	Philippines	Lower-middle-income countries	Asia & Pacific
NRI	47.70	37.18	52.44
Technology	38.93	32.15	48.56
People	42.22	30.04	44.85
Governance	51.84	46.17	61.84
Impact	57.81	40.35	54.50

Strongest and weakest indicators

The indicators where Philippines performs particularly well include E-commerce legislation, High-tech exports, and Freedom to make life choices (Table 3). By contrast, the economy's weakest indicators include Socioeconomic gap in use of digital payments, Rural gap in use of digital payments, Mobile tariffs, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of Philippines

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Technicians and associate professionals	95
High-tech exports	1	Use of clean fuels and technology	95
Freedom to make life choices	18	International Internet bandwidth	96
E-Participation	19	Professionals	97
Medium and high-tech industry	20	Mobile apps development	98
Use of virtual social networks	21	Secure Internet servers	98
Publication and use of open data	22	Mobile tariffs	101
Extent of staff training	25	ICT regulatory environment	101
Online trust and safety	26	Rural gap in use of digital payments	113
Adult literacy rate	29	Socioeconomic gap in use of digital payments	116

NRI 2019 At-A-Glance: Philippines

Network Readiness Index

Rank: 71 (out of 121)

Score: 47.70

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	80	38.93	C. Governance pillar	88	51.84
1st sub-pillar: Access	83	51.07	1st sub-pillar: Trust	71	51.54
2nd sub-pillar: Content	74	36.99	2nd sub-pillar: Regulation	78	58.84
3rd sub-pillar: Future Technologies	70	28.75	3rd sub-pillar: Inclusion	100	45.14
B. People pillar	62	42.22	D. Impact pillar	45	57.81
1st sub-pillar: Individuals	65	55.03	1st sub-pillar: Economy	21	42.45
2nd sub-pillar: Businesses	77	25.54	2nd sub-pillar: Quality of Life	66	61.13
3rd sub-pillar: Governments	60	46.08	3rd sub-pillar: SDG Contribution	77	69.83

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	101	38.60	3.1.1 Rule of law	91	42.44
1.1.2 Handset prices	86	36.43	3.1.2 Software piracy rate	63	33.78
1.1.3 Internet access	84	38.88	3.1.3 Secure Internet servers	98	38.62
1.1.4 4G mobile network coverage	79	80.00	3.1.4 Cybersecurity	60	68.42
1.1.5 Fixed-broadband subscriptions	NA	NA	3.1.5 Online trust and safety	26	74.43
1.1.6 International Internet bandwidth	96	61.46	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	65	52.42
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	85	57.66
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	80	37.32
1.2.2 Mobile apps development	98	38.93	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	77	0.13	3.2.5 Social safety net protection	69	40.76
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	101	64.87
1.3.1 Availability of latest technologies	71	49.66	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	31	57.80	3.3.1 E-Participation	19	92.99
1.3.3 Government procurement of advanced technology products	78	33.81	3.3.2 Socioeconomic gap in use of digital payments	116	17.77
1.3.4 ICT PCT patent applications	62	2.75	3.3.3 Availability of local online content	73	48.19
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	51	1.18	3.3.5 Rural gap in use of digital payments	113	21.61
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	78	55.93	4.1.1 Medium and high-tech industry	20	57.04
2.1.2 Active mobile-broadband subscriptions	74	25.59	4.1.2 High-tech exports	1	100.00
2.1.3 Use of virtual social networks	21	70.89	4.1.3 PCT patent applications	76	0.08
2.1.4 Tertiary enrolment	75	25.52	4.1.4 Labour productivity per employee	82	12.67
2.1.5 Adult literacy rate	29	97.22	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	59	58.57
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	18	90.13
2.2.1 Firms with website	65	43.88	4.2.3 Income inequality	88	48.95
2.2.2 Internet shopping	70	11.62	4.2.4 Healthy life expectancy at birth	93	46.89
2.2.3 Professionals	97	12.43	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	95	16.86	4.3.1 Access to basic services	90	80.28
2.2.5 Extent of staff training	25	67.20	4.3.2 Pollution	60	85.72
2.2.6 R&D expenditure by businesses	71	1.25	4.3.3 Road safety	49	70.00
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	30	86.92	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	22	54.70	4.3.6 Use of clean fuels and technology	95	43.33
2.3.3 ICT use and government efficiency	85	35.93			
2.3.4 R&D expenditure by governments and higher education	93	6.77			

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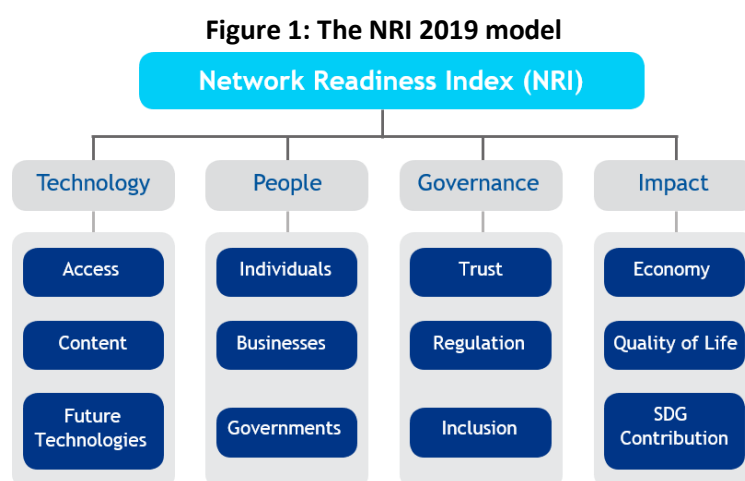
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Network Readiness Index 2019

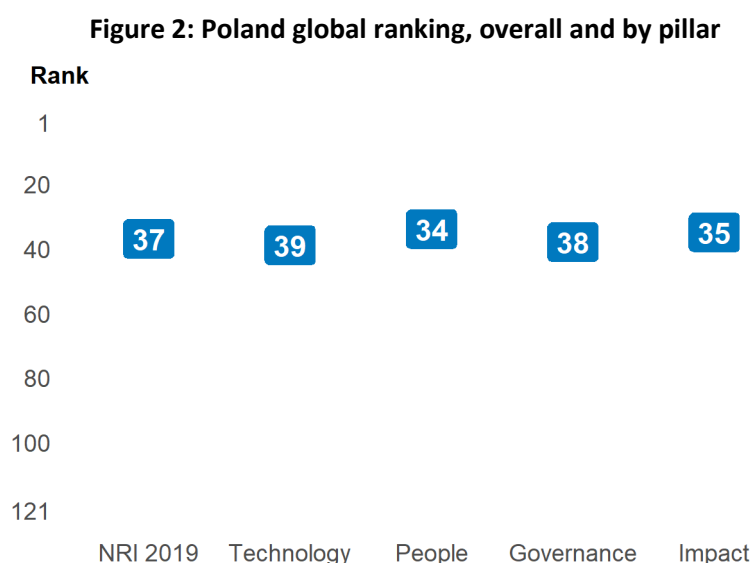
Poland

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Poland

Poland ranks 37th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

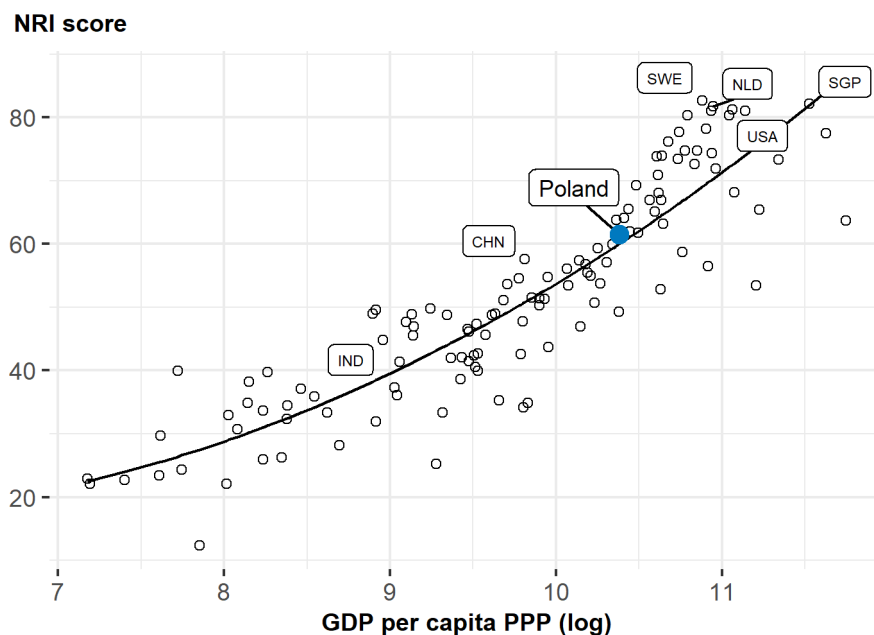
Table 1: Poland rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	27	Trust	36
Inclusion	27	SDG Contribution	36
Access	32	Economy	44
Businesses	32	Governments	46
Quality of Life	32	Regulation	49
Content	36	Future Technologies	63

NRI score and income

Figure 3 shows the position of Poland 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, Poland 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Poland belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Poland is ranked 36th 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 outperforms high-income countries in one of the twelve sub-pillars: SDG Contribution.

Europe

Poland is ranked 26th 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 three of the twelve sub-pillars: Access, Individuals and Inclusion.

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



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

Dimension	Poland	High-income countries	Europe
NRI	61.46	68.12	65.20
Technology	57.06	66.07	63.08
People	54.16	61.07	57.50
Governance	71.14	77.07	73.99
Impact	63.49	68.29	66.24

Strongest and weakest indicators

The indicators where Poland performs particularly well include 4G mobile network coverage, Internet access in schools, and E-commerce legislation (Table 3). By contrast, the economy's weakest indicators include Social safety net protection, International Internet bandwidth, and Use of virtual social networks.

Table 3: Top-ranked and bottom-ranked indicators of Poland

Strongest indicators	Rank	Weakest indicators	Rank
4G mobile network coverage	1	Legal framework's adaptability to digital business models	60
Internet access in schools	1	Fixed-broadband subscriptions	61
E-commerce legislation	1	Availability of latest technologies	62
Use of clean fuels and technology	1	Pollution	67
Active mobile-broadband subscriptions	3	Company investment in emerging technology	72
Reading proficiency in schools	7	Government procurement of advanced technology products	76
Mobile tariffs	10	ICT use and government efficiency	79
Maths proficiency in schools	14	Use of virtual social networks	80
Government online services	17	International Internet bandwidth	91
Adult literacy rate	20	Social safety net protection	106

NRI 2019 At-A-Glance: Poland

Network Readiness Index

Rank: 37 (out of 121)

Score: 61.46

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	39	57.06	C. Governance pillar	38	71.14
1st sub-pillar: Access	32	80.34	1st sub-pillar: Trust	36	69.44
2nd sub-pillar: Content	36	60.74	2nd sub-pillar: Regulation	49	67.78
3rd sub-pillar: Future Technologies	63	30.09	3rd sub-pillar: Inclusion	27	76.19
B. People pillar	34	54.16	D. Impact pillar	35	63.49
1st sub-pillar: Individuals	27	64.92	1st sub-pillar: Economy	44	28.07
2nd sub-pillar: Businesses	32	48.51	2nd sub-pillar: Quality of Life	32	72.34
3rd sub-pillar: Governments	46	49.06	3rd sub-pillar: SDG Contribution	36	90.07

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	10	91.61	3.1.1 Rule of law	44	63.09
1.1.2 Handset prices	42	57.01	3.1.2 Software piracy rate	36	58.11
1.1.3 Internet access	35	83.13	3.1.3 Secure Internet servers	27	82.71
1.1.4 4G mobile network coverage	1	100.00	3.1.4 Cybersecurity	31	87.28
1.1.5 Fixed-broadband subscriptions	61	67.89	3.1.5 Online trust and safety	57	56.01
1.1.6 International Internet bandwidth	91	62.73	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	36	70.84
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	39	81.63
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	60	43.83
1.2.2 Mobile apps development	40	72.83	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	37	1.08	3.2.5 Social safety net protection	106	20.63
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	34	89.77
1.3.1 Availability of latest technologies	62	53.66	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	72	31.90	3.3.1 E-Participation	31	87.90
1.3.3 Government procurement of advanced technology products	76	34.59	3.3.2 Socioeconomic gap in use of digital payments	23	92.30
1.3.4 ICT PCT patent applications	33	20.62	3.3.3 Availability of local online content	46	61.39
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	28	65.60
1.3.6 Robot density	31	12.54	3.3.5 Rural gap in use of digital payments	41	73.79
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	47	75.39	4.1.1 Medium and high-tech industry	38	45.17
2.1.2 Active mobile-broadband subscriptions	3	67.90	4.1.2 High-tech exports	42	20.09
2.1.3 Use of virtual social networks	80	45.95	4.1.3 PCT patent applications	37	3.50
2.1.4 Tertiary enrolment	33	49.35	4.1.4 Labour productivity per employee	34	43.54
2.1.5 Adult literacy rate	20	98.09	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	34	52.85	4.2.1 Happiness	41	65.49
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	58	69.99
2.2.1 Firms with website	43	62.60	4.2.3 Income inequality	24	82.11
2.2.2 Internet shopping	23	61.28	4.2.4 Healthy life expectancy at birth	37	71.79
2.2.3 Professionals	23	51.54	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	28	58.11	4.3.1 Access to basic services	32	99.02
2.2.5 Extent of staff training	59	40.54	4.3.2 Pollution	67	83.28
2.2.6 R&D expenditure by businesses	30	16.99	4.3.3 Road safety	41	78.12
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	7	98.79
2.3.1 Government online services	17	92.31	4.3.5 Maths proficiency in schools	14	81.18
2.3.2 Publication and use of open data	47	33.95	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	79	37.46			
2.3.4 R&D expenditure by governments and higher education	50	32.51			

* Confidential data

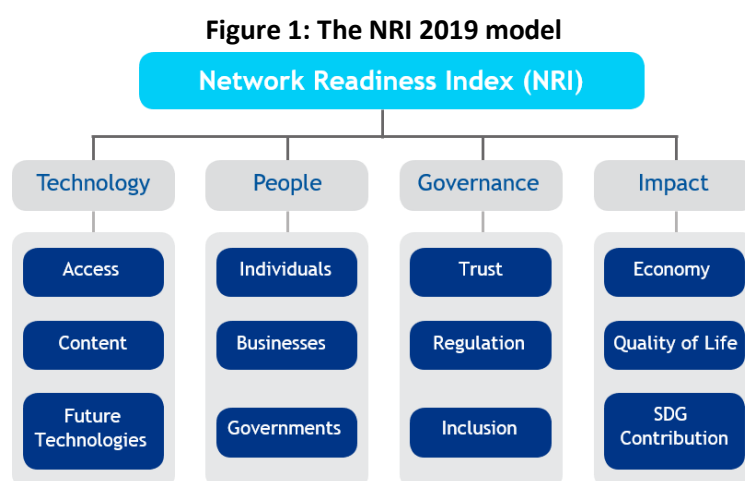
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Network Readiness Index 2019

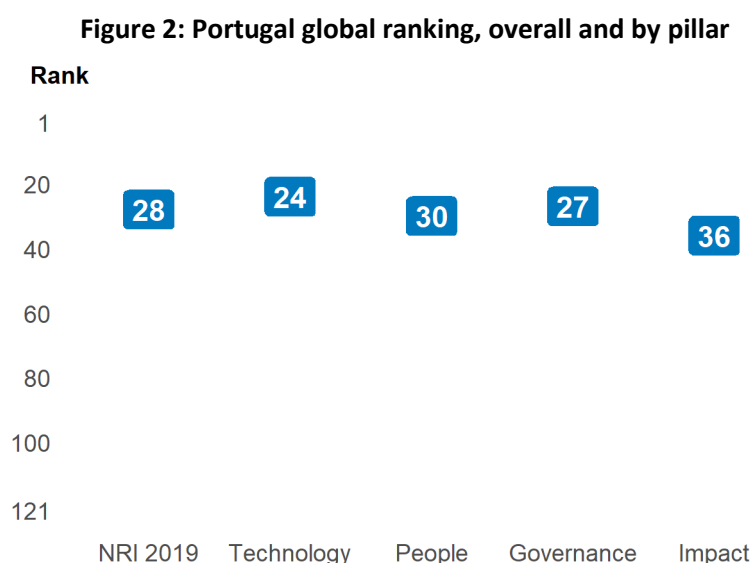
Portugal

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Portugal

Portugal ranks 28th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

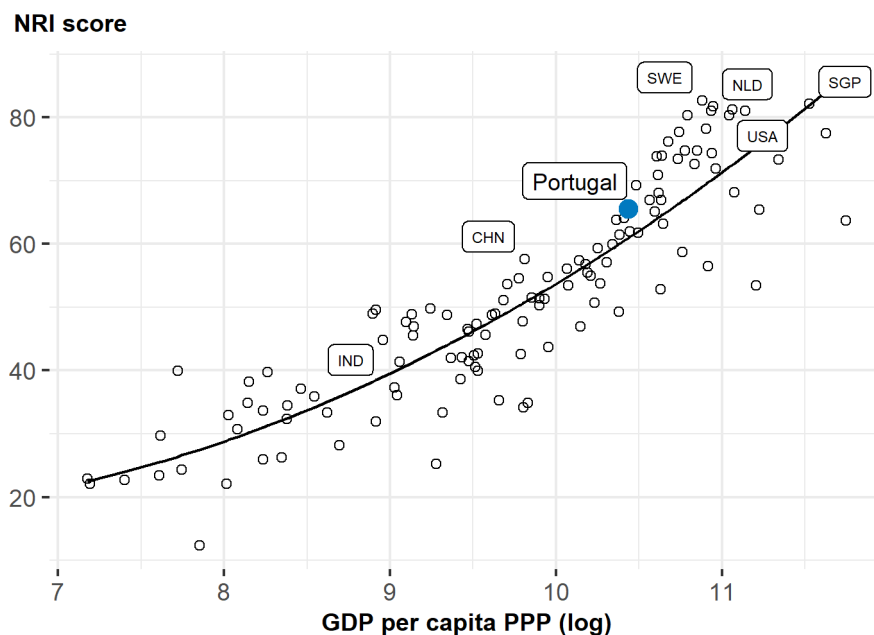
Table 1: Portugal rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	19	Inclusion	28
Governments	21	Future Technologies	29
Trust	21	Regulation	32
Access	25	Businesses	40
Quality of Life	27	Individuals	43
Content	28	Economy	60

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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Portugal belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also 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 below the income group average in each of the four pillars. At the sub-pillar level, it outperforms high-income countries in five of the twelve sub-pillars: Access, Content, Governments, Trust and SDG Contribution.

Europe

Portugal is ranked 20th within Europe (Figure 4, right panel). It has a score above the regional average in two of the four pillars: Score, Technology and Governance. With regard to sub-pillars, it outperforms the average in Europe in eight of the twelve sub-pillars: Access, Future Technology, Governments, Trust, 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	65.56	68.12	65.20
Technology	65.67	66.07	63.08
People	56.46	61.07	57.50
Governance	76.80	77.07	73.99
Impact	63.30	68.29	66.24

Strongest and weakest indicators

The indicators where Portugal performs particularly well include Internet access in schools, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include High-tech exports, Active mobile-broadband subscriptions, and Medium and high-tech industry.

Table 3: Top-ranked and bottom-ranked indicators of Portugal

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	International Internet bandwidth	52
E-commerce legislation	1	Internet users	52
Use of clean fuels and technology	1	Firms with website	53
Fixed-broadband subscriptions	4	Happiness	53
Computer software spending	8	Extent of staff training	54
Pollution	10	Gender gap in internet use	55
ICT regulatory environment	11	Legal framework's adaptability to digital business models	56
Maths proficiency in schools	12	Medium and high-tech industry	59
ICT use and government efficiency	13	Active mobile-broadband subscriptions	69
Reading proficiency in schools	13	High-tech exports	76

NRI 2019 At-A-Glance: Portugal

Network Readiness Index

Rank: 28 (out of 121)

Score: 65.56

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	24	65.67	C. Governance pillar	27	76.80
1st sub-pillar: Access	25	83.36	1st sub-pillar: Trust	21	78.60
2nd sub-pillar: Content	28	66.45	2nd sub-pillar: Regulation	32	76.66
3rd sub-pillar: Future Technologies	29	47.21	3rd sub-pillar: Inclusion	28	75.13
B. People pillar	30	56.46	D. Impact pillar	36	63.30
1st sub-pillar: Individuals	43	60.26	1st sub-pillar: Economy	60	21.63
2nd sub-pillar: Businesses	40	41.64	2nd sub-pillar: Quality of Life	27	74.35
3rd sub-pillar: Governments	21	67.49	3rd sub-pillar: SDG Contribution	19	93.93

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	47	70.08	3.1.1 Rule of law	24	79.35
1.1.2 Handset prices	22	67.20	3.1.2 Software piracy rate	27	68.92
1.1.3 Internet access	48	78.05	3.1.3 Secure Internet servers	28	82.58
1.1.4 4G mobile network coverage	22	99.20	3.1.4 Cybersecurity	44	81.03
1.1.5 Fixed-broadband subscriptions	4	99.21	3.1.5 Online trust and safety	14	81.13
1.1.6 International Internet bandwidth	52	69.77	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	35	71.02
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	38	81.78
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	56	44.98
1.2.2 Mobile apps development	34	76.58	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	49	0.78	3.2.5 Social safety net protection	32	66.06
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	11	96.14
1.3.1 Availability of latest technologies	20	84.35	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	39	48.89	3.3.1 E-Participation	30	88.54
1.3.3 Government procurement of advanced technology products	40	46.78	3.3.2 Socioeconomic gap in use of digital payments	36	82.32
1.3.4 ICT PCT patent applications	30	28.47	3.3.3 Availability of local online content	33	70.00
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	55	58.97
1.3.6 Robot density	25	20.21	3.3.5 Rural gap in use of digital payments	25	75.82
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	52	72.19	4.1.1 Medium and high-tech industry	59	32.55
2.1.2 Active mobile-broadband subscriptions	69	27.80	4.1.2 High-tech exports	76	9.97
2.1.3 Use of virtual social networks	38	64.66	4.1.3 PCT patent applications	32	5.95
2.1.4 Tertiary enrolment	40	46.48	4.1.4 Labour productivity per employee	45	38.03
2.1.5 Adult literacy rate	41	94.05	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	28	56.39	4.2.1 Happiness	53	59.62
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	37	80.77
2.2.1 Firms with website	53	57.22	4.2.3 Income inequality	50	72.37
2.2.2 Internet shopping	42	32.24	4.2.4 Healthy life expectancy at birth	21	84.62
2.2.3 Professionals	26	48.70	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	43	49.29	4.3.1 Access to basic services	16	99.68
2.2.5 Extent of staff training	54	45.37	4.3.2 Pollution	10	97.58
2.2.6 R&D expenditure by businesses	29	17.02	4.3.3 Road safety	29	85.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	13	97.77
2.3.1 Government online services	17	92.31	4.3.5 Maths proficiency in schools	12	83.20
2.3.2 Publication and use of open data	34	41.89	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	13	78.14			
2.3.4 R&D expenditure by governments and higher education	20	57.63			

* Confidential data

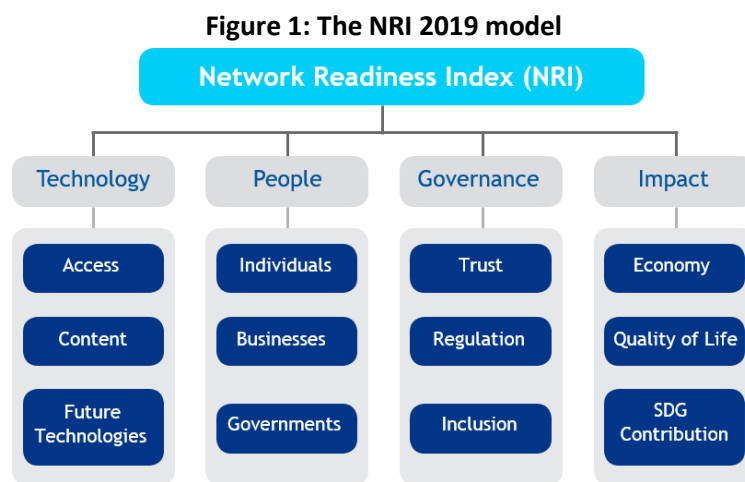
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Network Readiness Index 2019

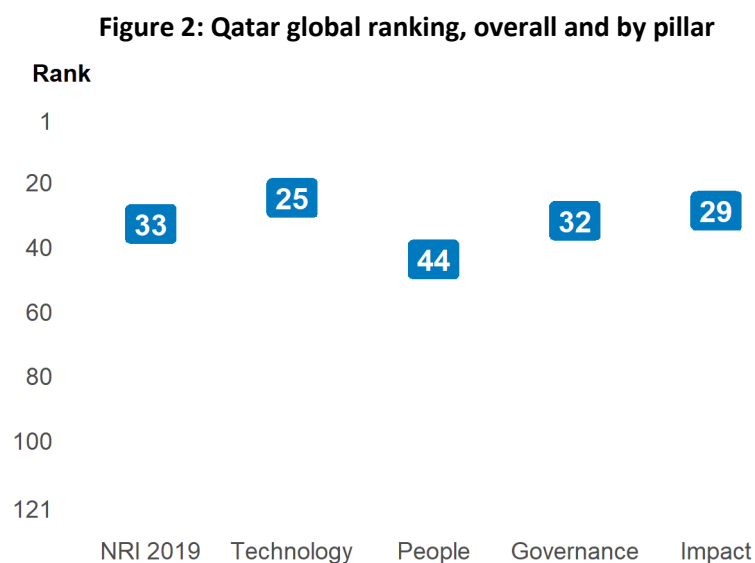
Qatar

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Qatar

Qatar ranks 33rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

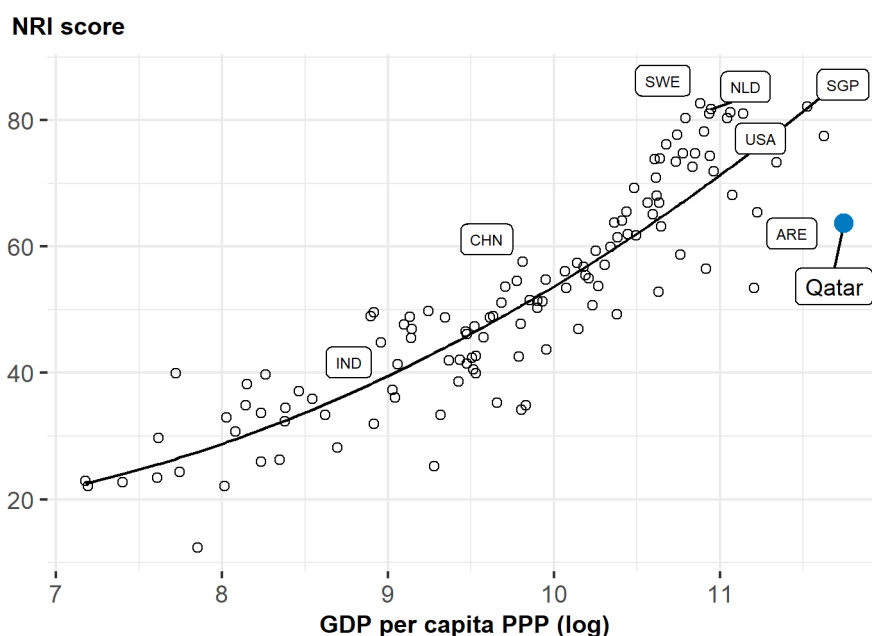
Table 1: Qatar rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Access	2	Regulation	35
Economy	8	Governments	37
Future Technologies	21	Trust	37
Quality of Life	23	Content	49
Individuals	25	Businesses	63
Inclusion	31	SDG Contribution	82

NRI score and income

Figure 3 shows the position of Qatar 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, Qatar 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Qatar belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

High-income countries

Qatar is ranked 32nd 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 outperforms high-income countries in five of the twelve sub-pillars: Access, Future Technology, Individuals, Economy and Quality of Life.

Arab States

Qatar is ranked 2nd within Arab States (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

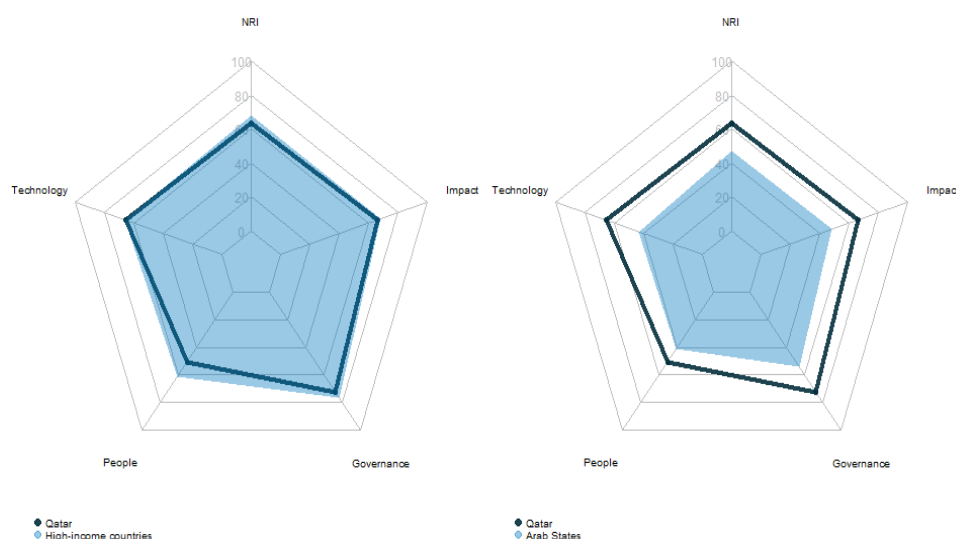


Table 2: Qatar scores vs. averages of its income group and region, overall and by pillar

Dimension	Qatar	High-income countries	Arab States
NRI	63.73	68.12	46.82
Technology	65.41	66.07	43.54
People	50.49	61.07	41.30
Governance	72.90	77.07	54.28
Impact	66.11	68.29	48.18

Strongest and weakest indicators

The indicators where Qatar performs particularly well include Handset prices, Internet access in schools, and Internet users (Table 3). By contrast, the economy's weakest indicators include Pollution, High-tech exports, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of Qatar

Strongest indicators	Rank	Weakest indicators	Rank
Handset prices	1	Robot density	67
Internet access in schools	1	Ease of doing business	70
Internet users	1	Professionals	71
Use of virtual social networks	1	Publication and use of open data	71
E-commerce legislation	1	Secure Internet servers	71
Labour productivity per employee	1	Technicians and associate professionals	73
Use of clean fuels and technology	1	Tertiary enrolment	94
Government procurement of advanced technology products	3	ICT regulatory environment	97
ICT use and government efficiency	4	High-tech exports	118
Medium and high-tech industry	9	Pollution	119

NRI 2019 At-A-Glance: Qatar

Network Readiness Index

Rank: 33 (out of 121)

Score: 63.73

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	25	65.41	C. Governance pillar	32	72.90
1st sub-pillar: Access	2	92.22	1st sub-pillar: Trust	37	69.24
2nd sub-pillar: Content	49	50.59	2nd sub-pillar: Regulation	35	75.30
3rd sub-pillar: Future Technologies	21	53.43	3rd sub-pillar: Inclusion	31	74.15
B. People pillar	44	50.49	D. Impact pillar	29	66.11
1st sub-pillar: Individuals	25	66.44	1st sub-pillar: Economy	8	56.41
2nd sub-pillar: Businesses	63	29.79	2nd sub-pillar: Quality of Life	23	77.63
3rd sub-pillar: Governments	37	55.25	3rd sub-pillar: SDG Contribution	82	64.27

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	17	84.43	3.1.1 Rule of law	36	70.09
1.1.2 Handset prices	1	100.00	3.1.2 Software piracy rate	38	56.76
1.1.3 Internet access	14	93.59	3.1.3 Secure Internet servers	71	51.03
1.1.4 4G mobile network coverage	19	99.50	3.1.4 Cybersecurity	19	92.21
1.1.5 Fixed-broadband subscriptions	19	95.48	3.1.5 Online trust and safety	24	76.10
1.1.6 International Internet bandwidth	35	72.56	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	45	62.76
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	70	67.98
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	12	81.72
1.2.2 Mobile apps development	51	66.08	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	25	71.38
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	97	67.96
1.3.1 Availability of latest technologies	22	81.54	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	17	68.74	3.3.1 E-Participation	64	67.52
1.3.3 Government procurement of advanced technology products	3	89.48	3.3.2 Socioeconomic gap in use of digital payments	NA	NA
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	12	87.69
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	17	67.24
1.3.6 Robot density	67	0.10	3.3.5 Rural gap in use of digital payments	NA	NA
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	1	100.00	4.1.1 Medium and high-tech industry	9	69.23
2.1.2 Active mobile-broadband subscriptions	14	49.15	4.1.2 High-tech exports	118	0.00
2.1.3 Use of virtual social networks	1	100.00	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	94	12.55	4.1.4 Labour productivity per employee	1	100.00
2.1.5 Adult literacy rate	56	89.91	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	42	47.02	4.2.1 Happiness	31	69.10
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	15	91.64
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	NA	NA	4.2.4 Healthy life expectancy at birth	36	72.16
2.2.3 Professionals	71	22.21	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	73	29.12	4.3.1 Access to basic services	15	99.72
2.2.5 Extent of staff training	26	65.61	4.3.2 Pollution	119	4.50
2.2.6 R&D expenditure by businesses	63	2.22	4.3.3 Road safety	39	79.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	43	66.38
2.3.1 Government online services	48	76.93	4.3.5 Maths proficiency in schools	51	35.68
2.3.2 Publication and use of open data	71	19.26	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	4	87.01			
2.3.4 R&D expenditure by governments and higher education	43	37.79			

* Confidential data

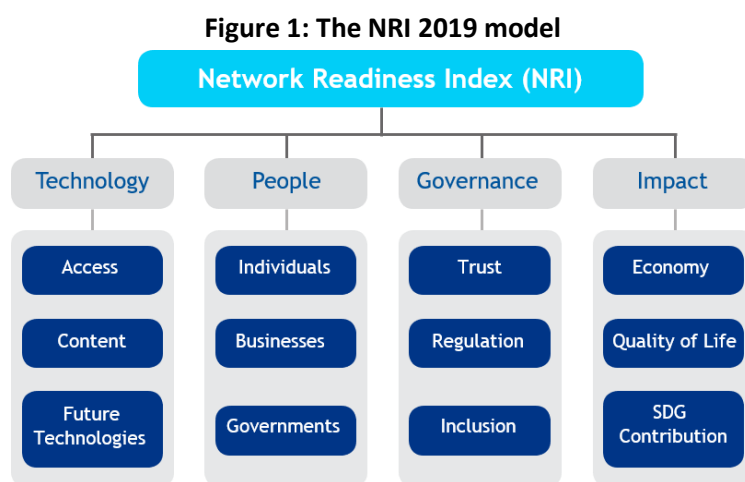
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Network Readiness Index 2019

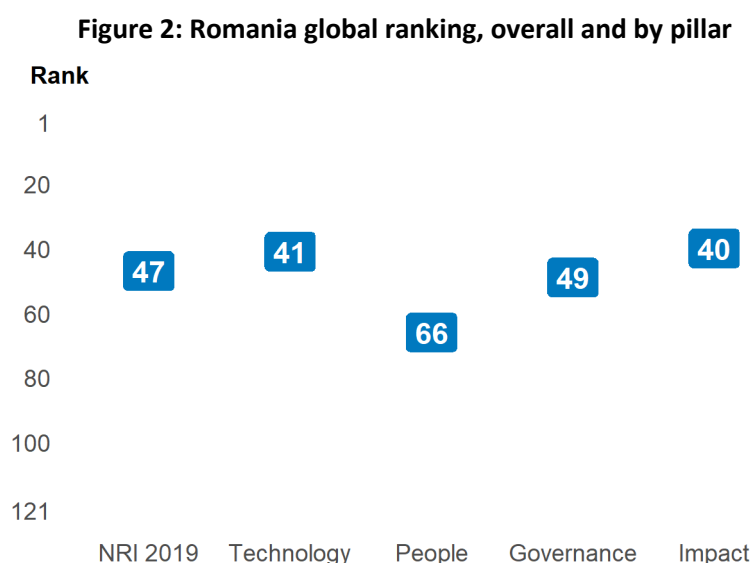
Romania

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Romania

Romania ranks 47th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

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

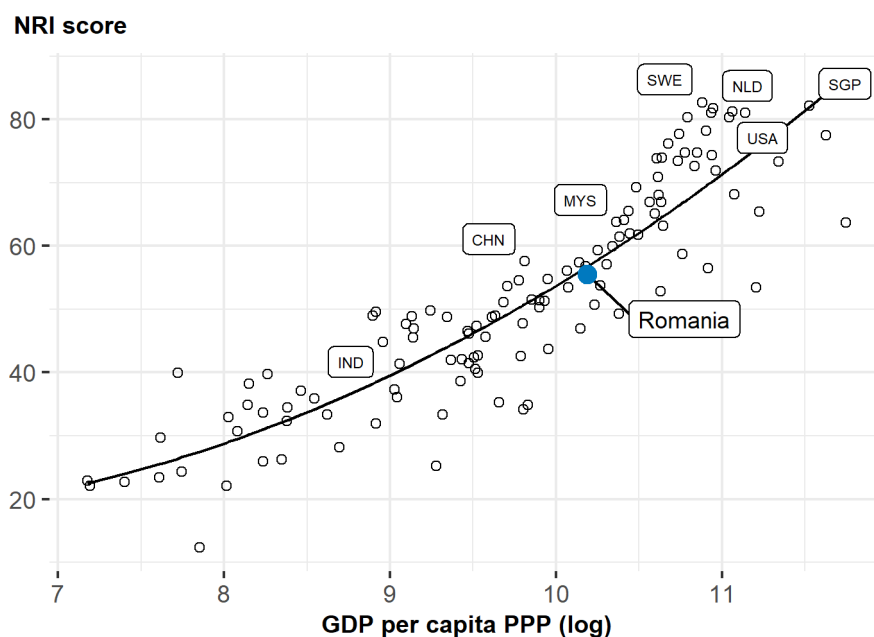
Table 1: Romania rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Access	18	SDG Contribution	52
Regulation	36	Individuals	56
Content	37	Businesses	62
Trust	44	Governments	86
Quality of Life	44	Inclusion	86
Economy	45	Future Technologies	90

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 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Romania belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Upper-middle-income countries

Romania is ranked 3rd 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 nine of the twelve sub-pillars: Access, Content, Individuals, Businesses, Trust, Regulation, Economy, Quality of Life and SDG Contribution.

Europe

Romania is ranked 31st 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: Access.

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

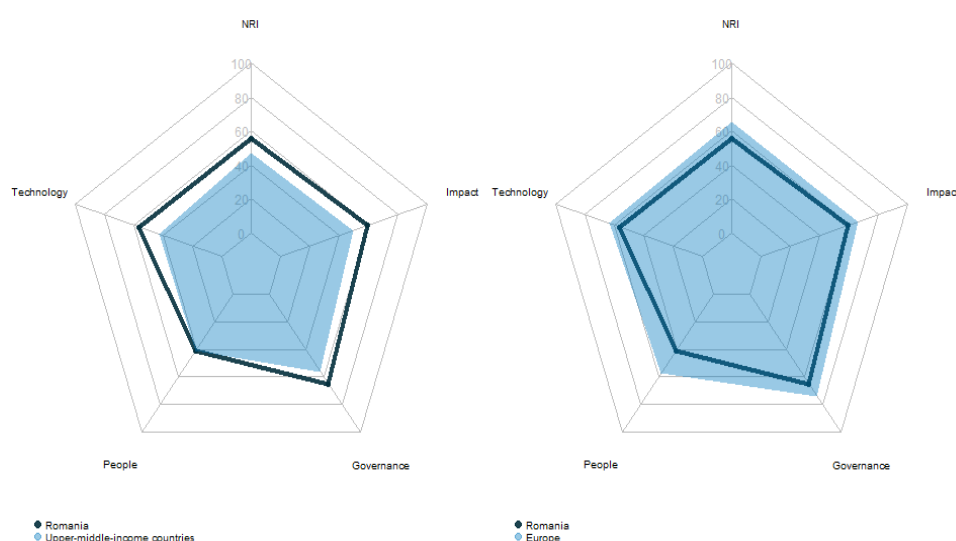


Table 2: Romania scores vs. averages of its income group and region, overall and by pillar

Dimension	Romania	Upper-middle-income countries	Europe
NRI	55.47	47.40	65.20
Technology	56.25	42.66	63.08
People	41.29	41.07	57.50
Governance	64.99	56.24	73.99
Impact	59.36	49.62	66.24

Strongest and weakest indicators

The indicators where Romania performs particularly well include Mobile tariffs, E-commerce legislation, and Online trust and safety (Table 3). By contrast, the economy's weakest indicators include Government procurement of advanced technology products, Extent of staff training, ICT use and government efficiency, Socioeconomic gap in use of digital payments, and Rural gap in use of digital payments.

Table 3: Top-ranked and bottom-ranked indicators of Romania

Strongest indicators	Rank	Weakest indicators	Rank
Mobile tariffs	1	Use of clean fuels and technology	73
E-commerce legislation	1	Access to basic services	75
Online trust and safety	7	Government online services	77
Handset prices	9	Technicians and associate professionals	78
Adult literacy rate	19	Company investment in emerging technology	89
ICT regulatory environment	22	ICT use and government efficiency	96
Medium and high-tech industry	23	Socioeconomic gap in use of digital payments	96
Fixed-broadband subscriptions	26	Rural gap in use of digital payments	96
Reading proficiency in schools	27	Extent of staff training	109
Secure Internet servers	29	Government procurement of advanced technology products	116

NRI 2019 At-A-Glance: Romania

Network Readiness Index

Rank: 47 (out of 121)

Score: 55.47

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	41	56.25	C. Governance pillar	49	64.99
1st sub-pillar: Access	18	85.22	1st sub-pillar: Trust	44	65.77
2nd sub-pillar: Content	37	60.73	2nd sub-pillar: Regulation	36	75.01
3rd sub-pillar: Future Technologies	90	22.78	3rd sub-pillar: Inclusion	86	54.21
B. People pillar	66	41.29	D. Impact pillar	40	59.36
1st sub-pillar: Individuals	56	56.89	1st sub-pillar: Economy	45	27.38
2nd sub-pillar: Businesses	62	29.96	2nd sub-pillar: Quality of Life	44	68.47
3rd sub-pillar: Governments	86	37.01	3rd sub-pillar: SDG Contribution	52	82.23

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	1	100.00	3.1.1 Rule of law	47	60.76
1.1.2 Handset prices	9	78.47	3.1.2 Software piracy rate	55	40.54
1.1.3 Internet access	44	79.61	3.1.3 Secure Internet servers	29	82.56
1.1.4 4G mobile network coverage	62	92.56	3.1.4 Cybersecurity	73	60.20
1.1.5 Fixed-broadband subscriptions	26	92.92	3.1.5 Online trust and safety	7	84.78
1.1.6 International Internet bandwidth	68	67.77	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	51	61.22
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	NA	NA
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	38	54.63
1.2.2 Mobile apps development	39	72.91	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	62	0.48	3.2.5 Social safety net protection	33	65.38
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	22	93.83
1.3.1 Availability of latest technologies	69	50.55	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	89	25.33	3.3.1 E-Participation	66	66.88
1.3.3 Government procurement of advanced technology products	116	13.77	3.3.2 Socioeconomic gap in use of digital payments	96	41.96
1.3.4 ICT PCT patent applications	43	13.53	3.3.3 Availability of local online content	68	51.08
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	41	61.38
1.3.6 Robot density	38	6.25	3.3.5 Rural gap in use of digital payments	96	49.73
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	62	67.76	4.1.1 Medium and high-tech industry	23	54.28
2.1.2 Active mobile-broadband subscriptions	46	33.59	4.1.2 High-tech exports	46	19.10
2.1.3 Use of virtual social networks	58	55.30	4.1.3 PCT patent applications	49	1.15
2.1.4 Tertiary enrolment	62	34.92	4.1.4 Labour productivity per employee	49	34.99
2.1.5 Adult literacy rate	19	98.25	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	35	51.54	4.2.1 Happiness	44	64.44
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	54	73.30
2.2.1 Firms with website	40	63.87	4.2.3 Income inequality	54	71.32
2.2.2 Internet shopping	59	19.99	4.2.4 Healthy life expectancy at birth	58	64.84
2.2.3 Professionals	40	39.23	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	78	25.69	4.3.1 Access to basic services	75	89.65
2.2.5 Extent of staff training	109	23.73	4.3.2 Pollution	36	90.34
2.2.6 R&D expenditure by businesses	48	7.24	4.3.3 Road safety	46	76.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	27	86.49
2.3.1 Government online services	77	62.31	4.3.5 Maths proficiency in schools	36	57.29
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	73	93.33
2.3.3 ICT use and government efficiency	96	30.00			
2.3.4 R&D expenditure by governments and higher education	72	18.71			

* Confidential data

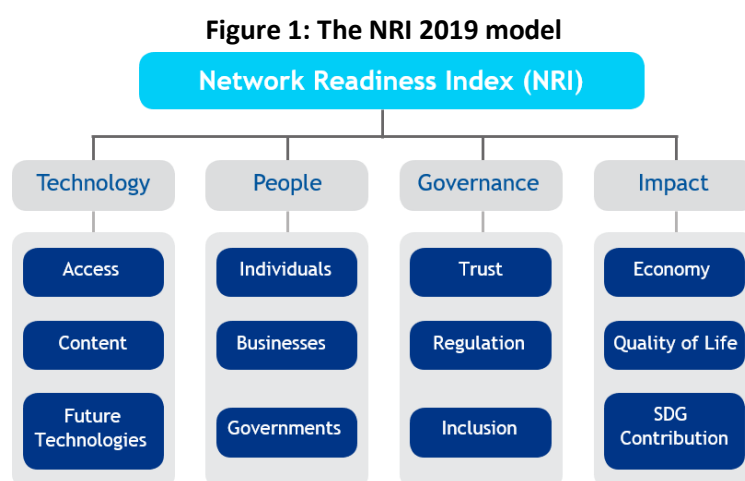
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Network Readiness Index 2019

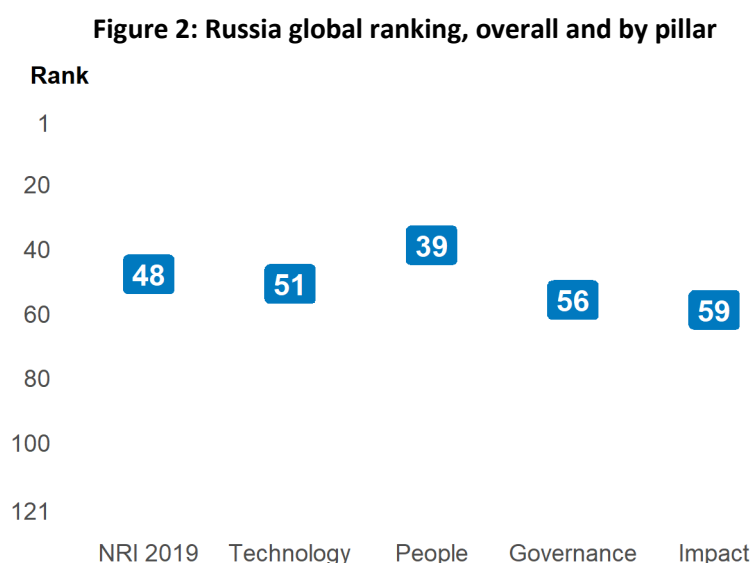
Russia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Russia

Russia ranks 48th out of the 121 economies included in the NRI 2019 (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 Russia relate to Inclusion, Governments and Businesses, among others (Table 1). More could be done, though, to improve the economy's performances in the Future Technologies, Quality of Life and Regulation sub-pillars.

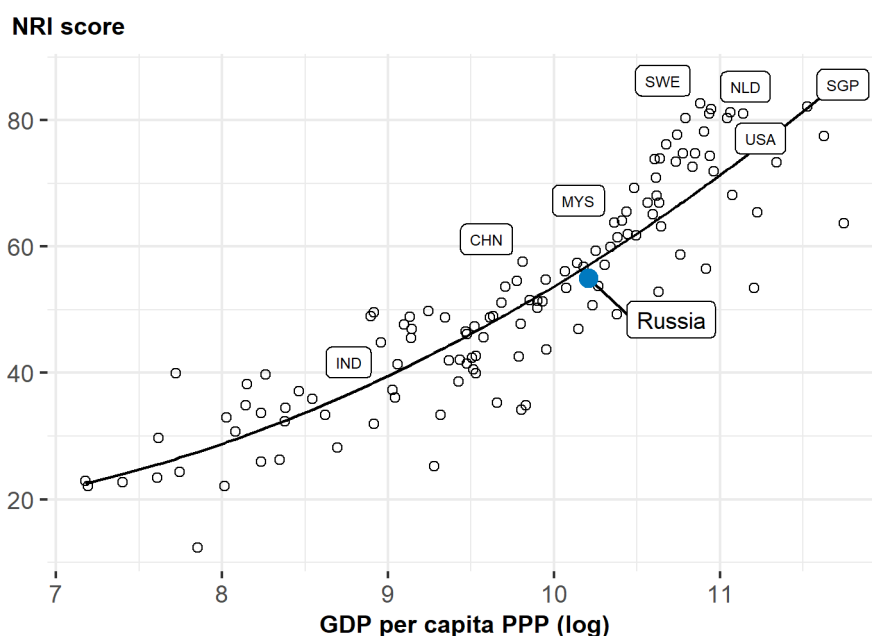
Table 1: Russia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Inclusion	29	Economy	54
Governments	32	Individuals	57
Businesses	35	Access	59
Content	44	Future Technologies	72
SDG Contribution	49	Quality of Life	85
Trust	54	Regulation	91

NRI score and income

Figure 3 shows the position of Russia 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, Russia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Russia belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—CIS—is Russia (RUS).

Performance against its income group and region

Upper-middle-income countries

Russia 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 ten of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Inclusion, Economy and SDG Contribution.

CIS

Russia is ranked 1st within CIS (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in CIS in ten of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Inclusion, Economy and SDG Contribution.

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

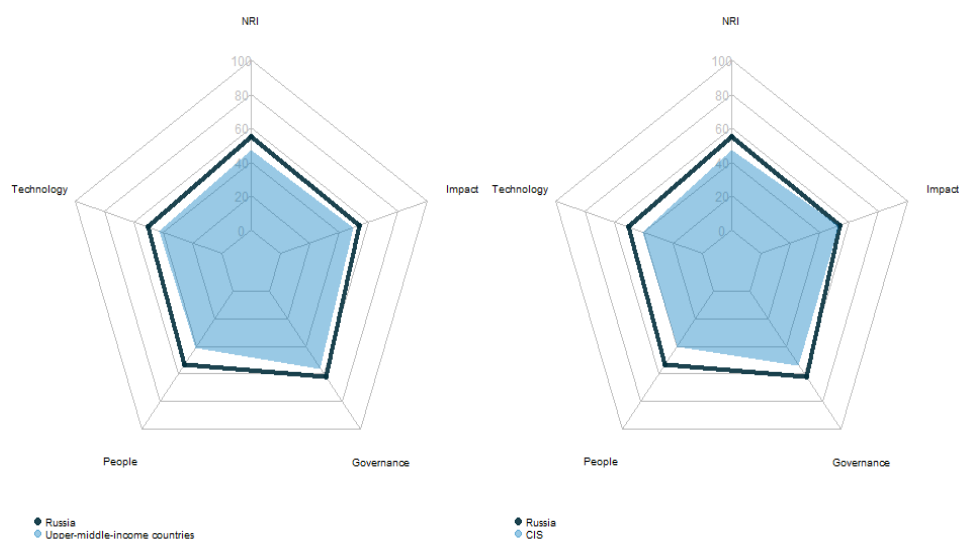


Table 2: Russia scores vs. averages of its income group and region, overall and by pillar

Dimension	Russia	Upper-middle-income countries	CIS
NRI	54.98	47.40	46.89
Technology	50.16	42.66	40.39
People	53.32	41.07	40.30
Governance	62.44	56.24	53.69
Impact	53.98	49.62	53.16

Strongest and weakest indicators

The indicators where Russia performs particularly well include Use of clean fuels and technology, Adult literacy rate, and Professionals (Table 3). By contrast, the economy's weakest indicators include ICT regulatory environment, Rule of law, and Regulatory quality.

Table 3: Top-ranked and bottom-ranked indicators of Russia

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Use of virtual social networks	76
Adult literacy rate	10	Availability of latest technologies	77
Professionals	12	Road safety	79
Tertiary enrolment	17	Social safety net protection	80
E-Participation	23	Healthy life expectancy at birth	86
Government online services	25	4G mobile network coverage	87
Publication and use of open data	25	Freedom to make life choices	95
Ease of doing business	27	Regulatory quality	99
Cybersecurity	28	Rule of law	107
R&D expenditure by businesses	31	ICT regulatory environment	116

NRI 2019 At-A-Glance: Russia

Network Readiness Index

Rank: 48 (out of 121)

Score: 54.98

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	51	50.16	C. Governance pillar	56	62.44
1st sub-pillar: Access	59	69.43	1st sub-pillar: Trust	54	58.81
2nd sub-pillar: Content	44	52.67	2nd sub-pillar: Regulation	91	53.89
3rd sub-pillar: Future Technologies	72	28.39	3rd sub-pillar: Inclusion	29	74.63
B. People pillar	39	53.32	D. Impact pillar	59	53.98
1st sub-pillar: Individuals	57	56.46	1st sub-pillar: Economy	54	23.78
2nd sub-pillar: Businesses	35	45.24	2nd sub-pillar: Quality of Life	85	54.42
3rd sub-pillar: Governments	32	58.24	3rd sub-pillar: SDG Contribution	49	83.74

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	59	66.09	3.1.1 Rule of law	107	34.74
1.1.2 Handset prices	37	58.97	3.1.2 Software piracy rate	60	36.49
1.1.3 Internet access	52	75.01	3.1.3 Secure Internet servers	45	72.99
1.1.4 4G mobile network coverage	87	70.00	3.1.4 Cybersecurity	28	89.58
1.1.5 Fixed-broadband subscriptions	50	76.74	3.1.5 Online trust and safety	54	60.27
1.1.6 International Internet bandwidth	53	69.74	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	99	39.51
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	27	84.78
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	37	54.98
1.2.2 Mobile apps development	43	70.39	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	40	1.00	3.2.5 Social safety net protection	80	33.15
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	116	35.91
1.3.1 Availability of latest technologies	77	43.63	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	47	44.57	3.3.1 E-Participation	23	91.08
1.3.3 Government procurement of advanced technology products	56	42.91	3.3.2 Socioeconomic gap in use of digital payments	33	83.18
1.3.4 ICT PCT patent applications	36	19.61	3.3.3 Availability of local online content	44	63.11
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	34	63.10
1.3.6 Robot density	49	1.42	3.3.5 Rural gap in use of digital payments	44	72.70
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	36	79.09	4.1.1 Medium and high-tech industry	49	38.54
2.1.2 Active mobile-broadband subscriptions	49	33.31	4.1.2 High-tech exports	41	20.77
2.1.3 Use of virtual social networks	76	48.02	4.1.3 PCT patent applications	47	2.07
2.1.4 Tertiary enrolment	17	59.72	4.1.4 Labour productivity per employee	52	33.74
2.1.5 Adult literacy rate	10	99.62	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	54	19.02	4.2.1 Happiness	68	51.16
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	95	46.47
2.2.1 Firms with website	49	59.71	4.2.3 Income inequality	62	66.58
2.2.2 Internet shopping	40	34.47	4.2.4 Healthy life expectancy at birth	86	53.48
2.2.3 Professionals	12	64.06	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	32	56.29	4.3.1 Access to basic services	68	91.80
2.2.5 Extent of staff training	60	40.02	4.3.2 Pollution	34	90.95
2.2.6 R&D expenditure by businesses	31	16.90	4.3.3 Road safety	79	52.19
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	25	90.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	25	48.53	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	42	54.50			
2.3.4 R&D expenditure by governments and higher education	42	39.17			

* Confidential data

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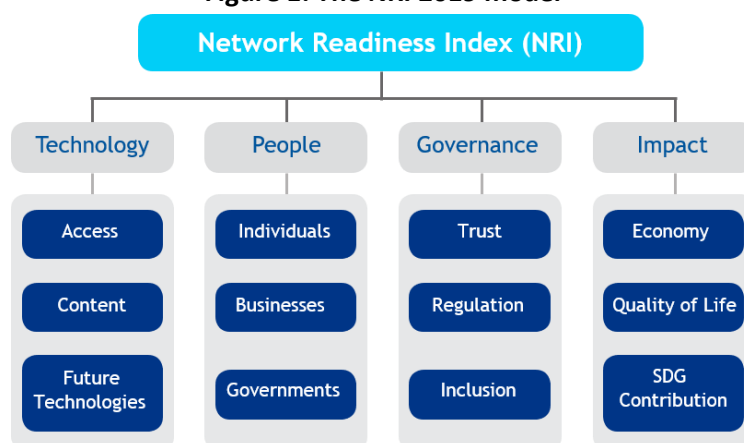
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Network Readiness Index 2019

Rwanda

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

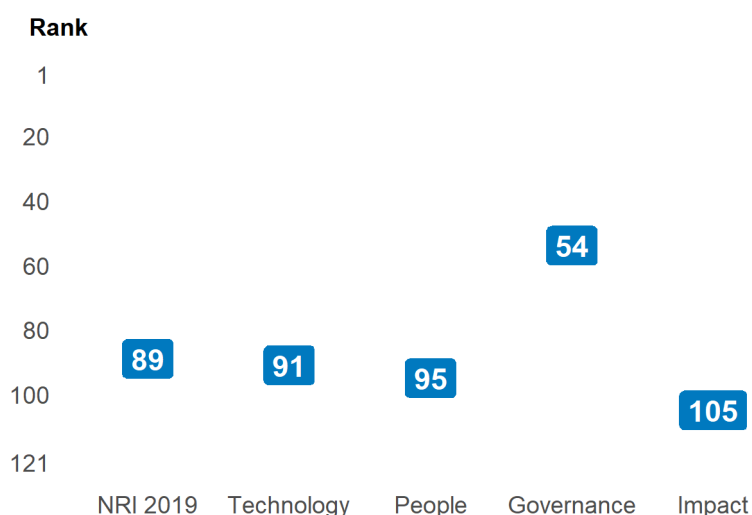
Figure 1: The NRI 2019 model



Global NRI position of Rwanda

Rwanda ranks 89th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Rwanda global ranking, overall and by pillar



Performance at sub-pillar level

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

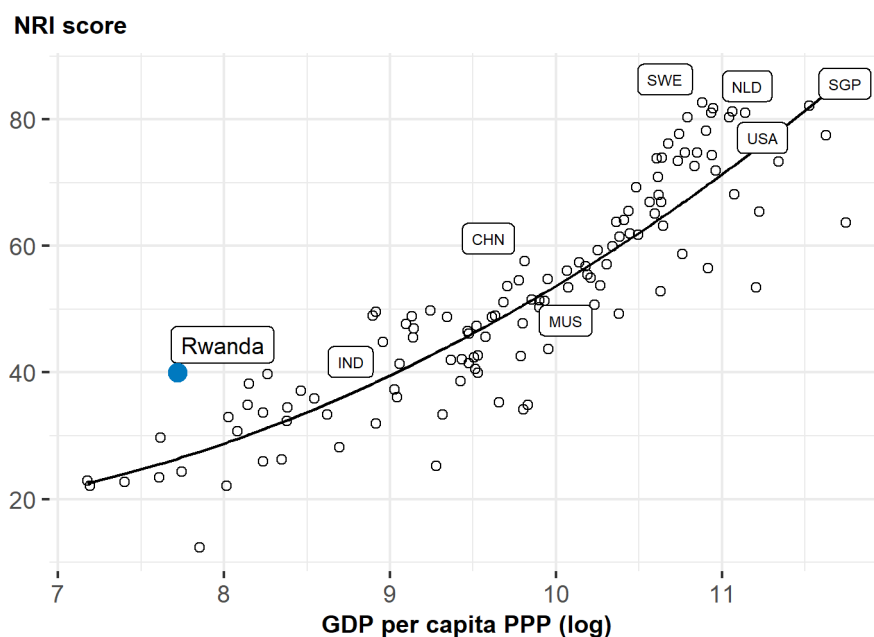
Table 1: Rwanda rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	30	Access	98
Regulation	30	Quality of Life	99
Future Technologies	32	Content	105
Trust	60	Businesses	106
Economy	74	Individuals	114
Inclusion	79	SDG Contribution	115

NRI score and income

Figure 3 shows the position of Rwanda 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, Rwanda 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Rwanda belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Low-income countries

Rwanda is ranked 1st in the group of low-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 low-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and Quality of Life.

Africa

Rwanda is ranked 3rd within Africa (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Africa in eight of the twelve sub-pillars: Access, Future Technology, Governments, Trust, Regulation, Inclusion, Economy and Quality of Life.

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

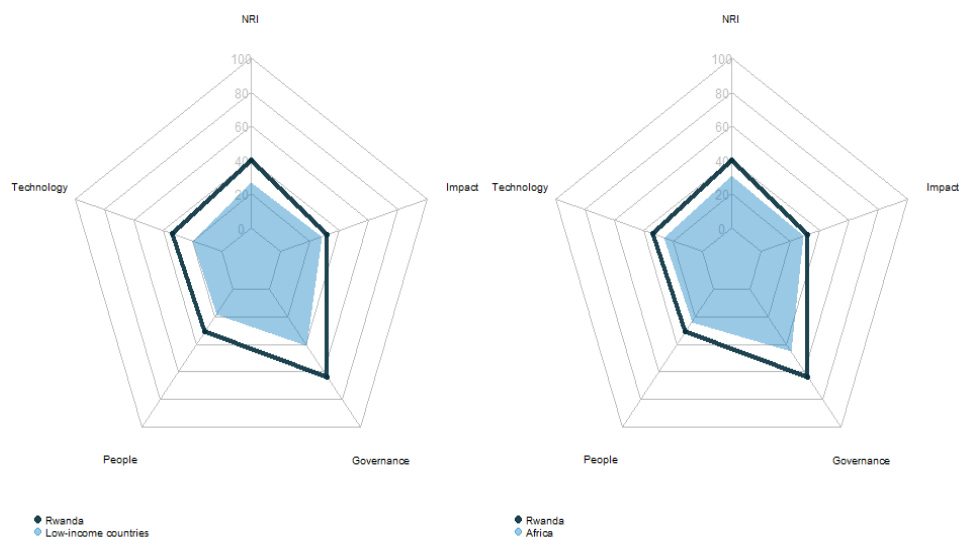


Table 2: Rwanda scores vs. averages of its income group and region, overall and by pillar

Dimension	Rwanda	Low-income countries	Africa
NRI	39.97	26.91	31.07
Technology	33.78	20.09	26.03
People	30.70	18.24	23.76
Governance	63.48	41.33	45.32
Impact	31.94	27.97	29.15

Strongest and weakest indicators

The indicators where Rwanda performs particularly well include E-commerce legislation, ICT use and government efficiency, and Government procurement of advanced technology products (Table 3). By contrast, the economy's weakest indicators include Use of virtual social networks, Handset prices, Internet access, Mobile apps development, and Happiness.

Table 3: Top-ranked and bottom-ranked indicators of Rwanda

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Technicians and associate professionals	110
ICT use and government efficiency	3	Use of clean fuels and technology	111
Government procurement of advanced technology products	7	Internet users	112
Legal framework's adaptability to digital business models	8	Road safety	112
Freedom to make life choices	16	Internet shopping	113
Social safety net protection	35	Internet access	117
Ease of doing business	37	Mobile apps development	117
High-tech exports	37	Happiness	117
Online trust and safety	41	Handset prices	118
Company investment in emerging technology	42	Use of virtual social networks	119

NRI 2019 At-A-Glance: Rwanda

Network Readiness Index

Rank: 89 (out of 121)

Score: 39.97

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	91	33.78	C. Governance pillar	54	63.48
1st sub-pillar: Access	98	38.18	1st sub-pillar: Trust	60	57.13
2nd sub-pillar: Content	105	16.79	2nd sub-pillar: Regulation	30	77.22
3rd sub-pillar: Future Technologies	32	46.36	3rd sub-pillar: Inclusion	79	56.08
B. People pillar	95	30.70	D. Impact pillar	105	31.94
1st sub-pillar: Individuals	114	18.38	1st sub-pillar: Economy	74	15.99
2nd sub-pillar: Businesses	106	14.97	2nd sub-pillar: Quality of Life	99	48.30
3rd sub-pillar: Governments	30	58.75	3rd sub-pillar: SDG Contribution	115	31.54

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	110	33.10	3.1.1 Rule of law	55	56.03
1.1.2 Handset prices	118	2.90	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	117	3.23	3.1.3 Secure Internet servers	107	30.58
1.1.4 4G mobile network coverage	49	96.60	3.1.4 Cybersecurity	51	74.34
1.1.5 Fixed-broadband subscriptions	74	45.37	3.1.5 Online trust and safety	41	67.58
1.1.6 International Internet bandwidth	108	56.34	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	52	29.72	3.2.1 Regulatory quality	63	53.27
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	37	81.81
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	8	84.09
1.2.2 Mobile apps development	117	17.02	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	35	61.55
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	69	82.62
1.3.1 Availability of latest technologies	48	60.49	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	42	45.79	3.3.1 E-Participation	59	72.61
1.3.3 Government procurement of advanced technology products	7	79.18	3.3.2 Socioeconomic gap in use of digital payments	103	40.63
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	80	41.41
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	56	69.65
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	112	13.32	4.1.1 Medium and high-tech industry	107	8.22
2.1.2 Active mobile-broadband subscriptions	104	13.53	4.1.2 High-tech exports	37	23.76
2.1.3 Use of virtual social networks	119	2.18	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	109	4.35	4.1.4 Labour productivity per employee	NA	NA
2.1.5 Adult literacy rate	86	58.51	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	117	10.49
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	16	91.62
2.2.1 Firms with website	94	20.25	4.2.3 Income inequality	87	50.79
2.2.2 Internet shopping	113	1.23	4.2.4 Healthy life expectancy at birth	98	40.29
2.2.3 Professionals	98	12.23	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	110	5.48	4.3.1 Access to basic services	106	50.07
2.2.5 Extent of staff training	70	35.64	4.3.2 Pollution	105	60.48
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	112	15.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	67	69.23	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	70	19.62	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	3	87.40			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

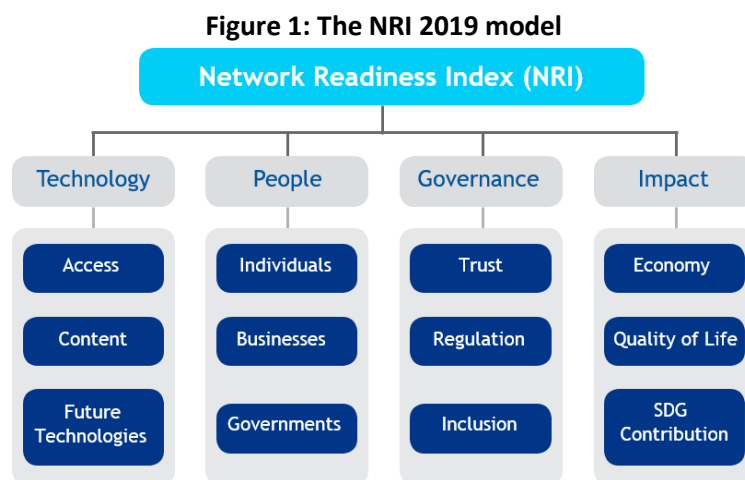
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Network Readiness Index 2019

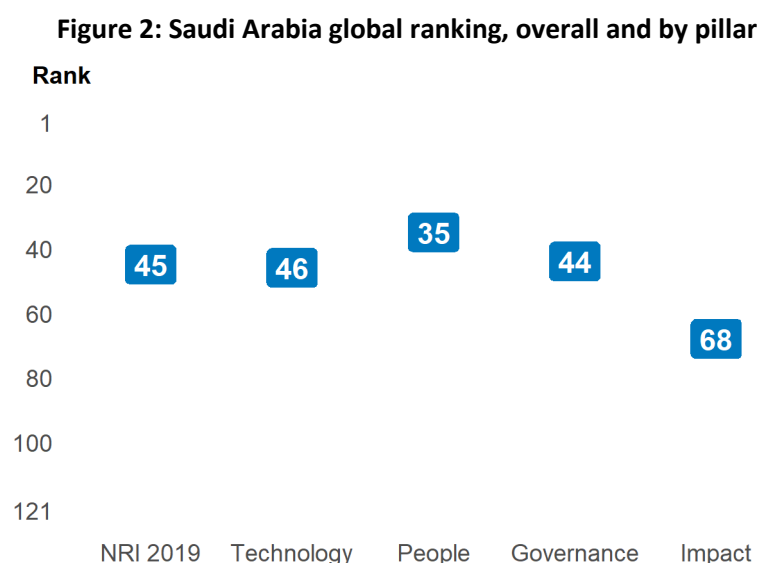
Saudi Arabia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Saudi Arabia

Saudi Arabia ranks 45th out of the 121 economies included in the NRI 2019 (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 Saudi Arabia relate to Access, Individuals and Governments, among others (Table 1). More could be done, though, to improve the economy's performances in the Businesses, Content and SDG Contribution sub-pillars.

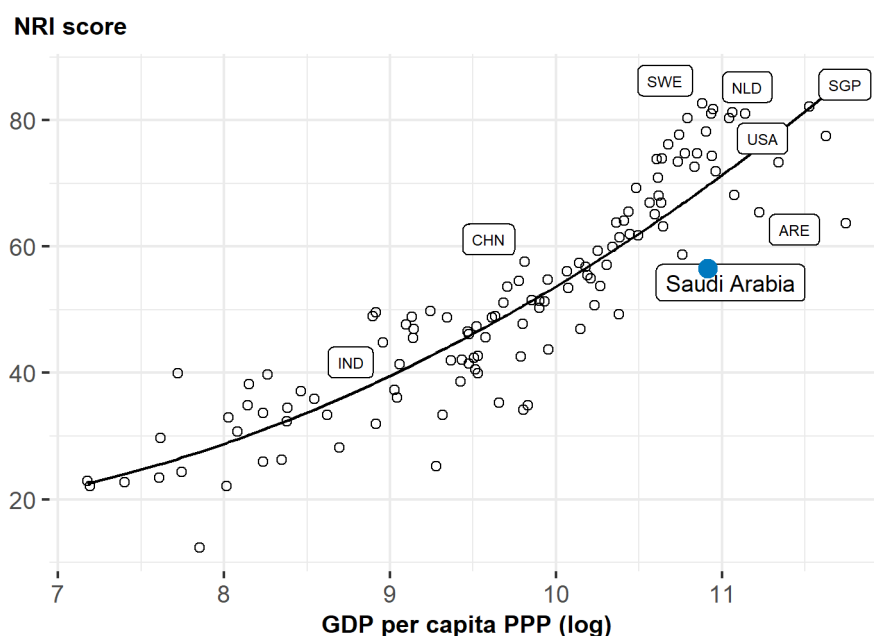
Table 1: Saudi Arabia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Access	19	Quality of Life	43
Individuals	22	Trust	46
Governments	29	Regulation	47
Economy	34	Businesses	49
Future Technologies	35	Content	86
Inclusion	42	SDG Contribution	97

NRI score and income

Figure 3 shows the position of Saudi Arabia 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, Saudi Arabia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Saudi Arabia belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

High-income countries

Saudi Arabia is ranked 43rd 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 outperforms high-income countries in two of the twelve sub-pillars: Access and Individuals.

Arab States

Saudi Arabia is ranked 4th within Arab States (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Arab States in ten of the twelve sub-pillars: Access, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and Quality of Life.

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

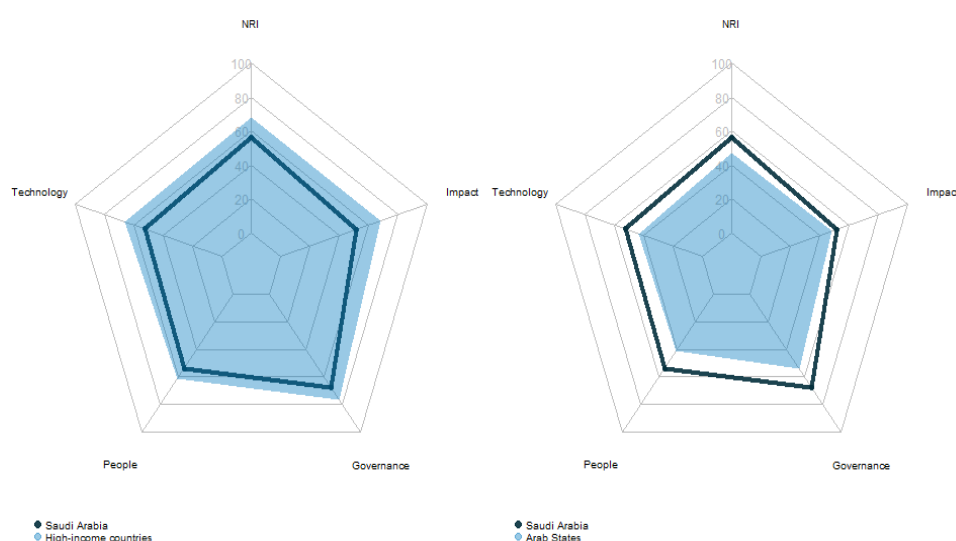


Table 2: Saudi Arabia scores vs. averages of its income group and region, overall and by pillar

Dimension	Saudi Arabia	High-income countries	Arab States
NRI	56.49	68.12	46.82
Technology	52.47	66.07	43.54
People	54.02	61.07	41.30
Governance	67.99	77.07	54.28
Impact	51.49	68.29	48.18

Strongest and weakest indicators

The indicators where Saudi Arabia performs particularly well include Internet access in schools, Access to basic services, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Pollution, High-tech exports, Professionals, and Road safety.

Table 3: Top-ranked and bottom-ranked indicators of Saudi Arabia

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Regulatory quality	71
Access to basic services	1	Healthy life expectancy at birth	72
Use of clean fuels and technology	1	Publication and use of open data	73
Labour productivity per employee	6	Digital participation and content creation	86
ICT use and government efficiency	7	Secure Internet servers	89
Internet access	12	E-commerce legislation	100
International Internet bandwidth	12	Professionals	109
Internet users	12	Road safety	109
Government procurement of advanced technology products	14	High-tech exports	110
Cybersecurity	14	Pollution	117

NRI 2019 At-A-Glance: Saudi Arabia

Network Readiness Index

Rank: 45 (out of 121)

Score: 56.49

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	46	52.47	C. Governance pillar	44	67.99
1st sub-pillar: Access	19	84.75	1st sub-pillar: Trust	46	64.24
2nd sub-pillar: Content	86	31.66	2nd sub-pillar: Regulation	47	68.42
3rd sub-pillar: Future Technologies	35	41.00	3rd sub-pillar: Inclusion	42	71.31
B. People pillar	35	54.02	D. Impact pillar	68	51.49
1st sub-pillar: Individuals	22	67.37	1st sub-pillar: Economy	34	33.46
2nd sub-pillar: Businesses	49	35.10	2nd sub-pillar: Quality of Life	43	68.61
3rd sub-pillar: Governments	29	59.58	3rd sub-pillar: SDG Contribution	97	52.41

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	20	83.49	3.1.1 Rule of law	54	56.57
1.1.2 Handset prices	44	56.91	3.1.2 Software piracy rate	38	56.76
1.1.3 Internet access	12	94.16	3.1.3 Secure Internet servers	89	43.36
1.1.4 4G mobile network coverage	59	93.10	3.1.4 Cybersecurity	14	94.52
1.1.5 Fixed-broadband subscriptions	35	87.61	3.1.5 Online trust and safety	37	70.02
1.1.6 International Internet bandwidth	12	77.95	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	71	50.40
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	58	73.10
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	16	74.24
1.2.2 Mobile apps development	69	56.71	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	29	68.94
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	22	93.83
1.3.1 Availability of latest technologies	39	68.01	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	30	58.27	3.3.1 E-Participation	64	67.52
1.3.3 Government procurement of advanced technology products	14	66.04	3.3.2 Socioeconomic gap in use of digital payments	43	79.32
1.3.4 ICT PCT patent applications	41	16.83	3.3.3 Availability of local online content	27	77.33
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	47	60.82
1.3.6 Robot density	60	0.47	3.3.5 Rural gap in use of digital payments	46	71.56
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	12	92.94	4.1.1 Medium and high-tech industry	34	48.32
2.1.2 Active mobile-broadband subscriptions	22	43.07	4.1.2 High-tech exports	110	1.15
2.1.3 Use of virtual social networks	30	67.78	4.1.3 PCT patent applications	38	3.31
2.1.4 Tertiary enrolment	32	49.50	4.1.4 Labour productivity per employee	6	81.05
2.1.5 Adult literacy rate	47	92.80	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	25	58.16	4.2.1 Happiness	33	68.72
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	50	75.57
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	44	31.95	4.2.4 Healthy life expectancy at birth	72	61.54
2.2.3 Professionals	109	5.09	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	38	52.94	4.3.1 Access to basic services	1	100.00
2.2.5 Extent of staff training	43	50.40	4.3.2 Pollution	117	18.00
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	109	18.44
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	46	63.48
2.3.1 Government online services	48	76.93	4.3.5 Maths proficiency in schools	64	14.54
2.3.2 Publication and use of open data	73	18.66	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	7	83.17			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

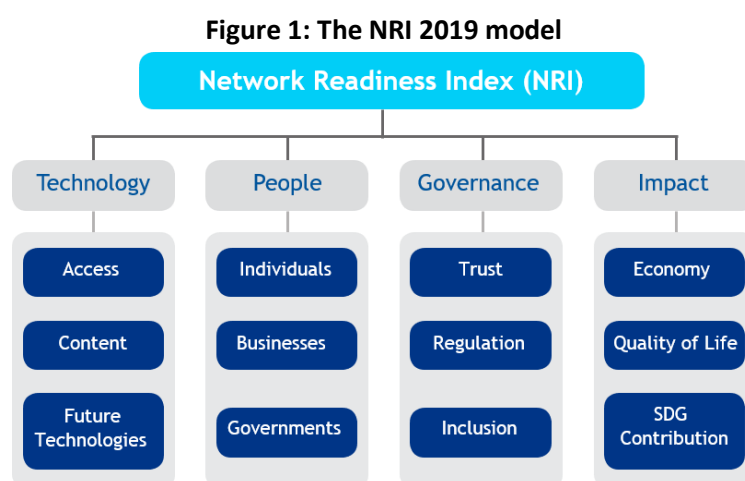
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Network Readiness Index 2019

Senegal

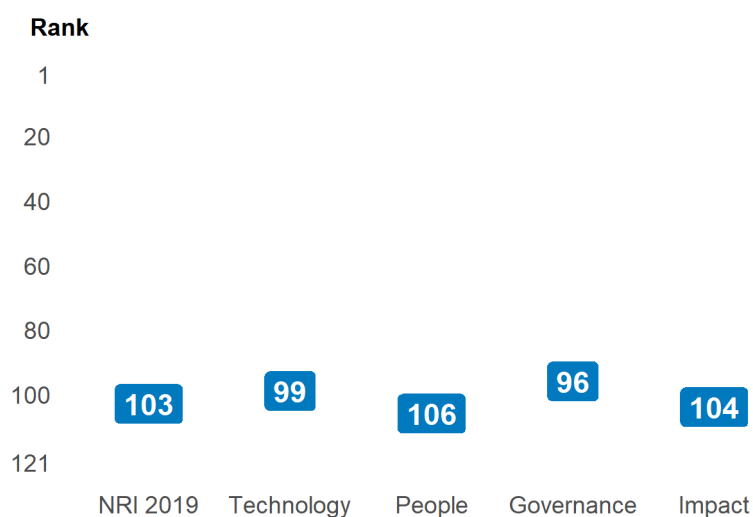
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Senegal

Senegal ranks 103rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Senegal global ranking, overall and by pillar



Performance at sub-pillar level

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

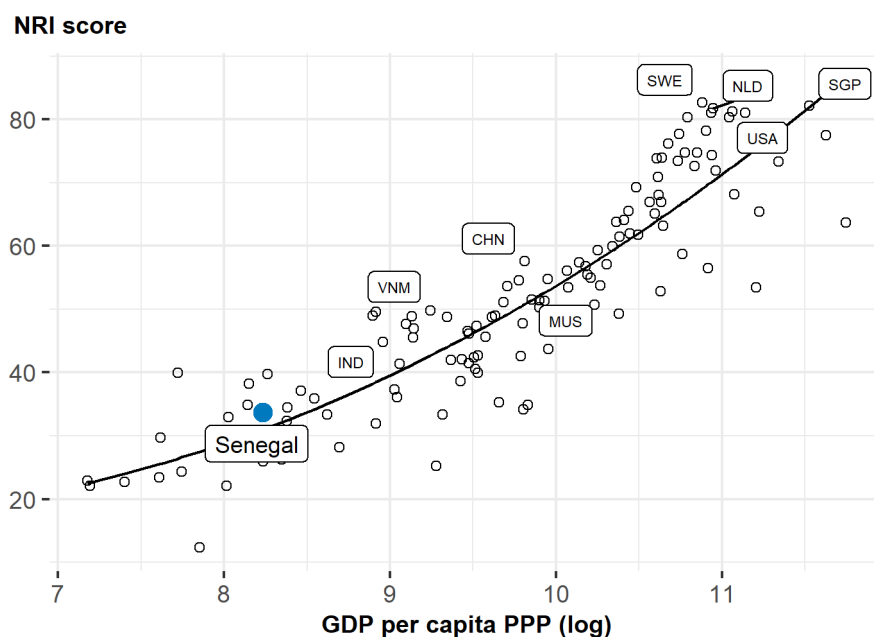
Table 1: Senegal rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	34	SDG Contribution	102
Governments	73	Access	106
Economy	82	Content	109
Regulation	87	Individuals	109
Inclusion	90	Quality of Life	110
Trust	102	Businesses	113

NRI score and income

Figure 3 shows the position of Senegal 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, Senegal 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Senegal belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries

Senegal is ranked 17th 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: Governance. At the sub-pillar level, it outperforms lower-middle-income countries in four of the twelve sub-pillars: Future Technology, Governments, Regulation and Inclusion.

Africa

Senegal is ranked 7th within Africa (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Africa in seven of the twelve sub-pillars: Access, Future Technology, Governments, Regulation, Inclusion, Economy and SDG Contribution.

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



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

Dimension	Senegal	Lower-middle-income countries	Africa
NRI	33.67	37.18	31.07
Technology	29.31	32.15	26.03
People	24.62	30.04	23.76
Governance	48.12	46.17	45.32
Impact	32.65	40.35	29.15

Strongest and weakest indicators

The indicators where Senegal performs particularly well include R&D expenditure by governments and higher education, Maths proficiency in schools, and Computer software spending (Table 3). By contrast, the economy's weakest indicators include International Internet bandwidth, Secure Internet servers, and Mobile apps development.

Table 3: Top-ranked and bottom-ranked indicators of Senegal

Strongest indicators	Rank	Weakest indicators	Rank
R&D expenditure by governments and higher education	16	Active mobile-broadband subscriptions	103
Maths proficiency in schools	29	Professionals	104
Computer software spending	30	Access to basic services	104
Government procurement of advanced technology products	42	Internet shopping	105
Legal framework's adaptability to digital business models	42	Digital participation and content creation	108
Online trust and safety	51	Technicians and associate professionals	109
Intellectual property receipts	52	Freedom to make life choices	111
ICT use and government efficiency	52	Mobile apps development	112
Availability of latest technologies	57	International Internet bandwidth	114
Internet access in schools	58	Secure Internet servers	114

NRI 2019 At-A-Glance: Senegal

Network Readiness Index

Rank: 103 (out of 121)

Score: 33.67

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	99	29.31	C. Governance pillar	96	48.12
1st sub-pillar: Access	106	33.51	1st sub-pillar: Trust	102	37.33
2nd sub-pillar: Content	109	13.14	2nd sub-pillar: Regulation	87	55.88
3rd sub-pillar: Future Technologies	34	41.29	3rd sub-pillar: Inclusion	90	51.16
B. People pillar	106	24.62	D. Impact pillar	104	32.65
1st sub-pillar: Individuals	109	21.60	1st sub-pillar: Economy	82	13.27
2nd sub-pillar: Businesses	113	11.15	2nd sub-pillar: Quality of Life	110	38.74
3rd sub-pillar: Governments	73	41.10	3rd sub-pillar: SDG Contribution	102	45.93

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	95	46.44	3.1.1 Rule of law	70	48.59
1.1.2 Handset prices	101	27.73	3.1.2 Software piracy rate	74	20.27
1.1.3 Internet access	100	19.08	3.1.3 Secure Internet servers	114	24.02
1.1.4 4G mobile network coverage	95	62.00	3.1.4 Cybersecurity	98	31.36
1.1.5 Fixed-broadband subscriptions	92	15.86	3.1.5 Online trust and safety	51	62.40
1.1.6 International Internet bandwidth	114	51.13	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	58	12.30	3.2.1 Regulatory quality	78	49.04
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	99	51.37
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	42	52.65
1.2.2 Mobile apps development	112	25.08	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	52	0.68	3.2.5 Social safety net protection	96	27.29
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	79	79.93
1.3.1 Availability of latest technologies	57	55.21	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	59	36.23	3.3.1 E-Participation	98	43.95
1.3.3 Government procurement of advanced technology products	42	46.43	3.3.2 Socioeconomic gap in use of digital payments	60	70.00
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	88	35.87
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	83	54.81
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	93	40.29	4.1.1 Medium and high-tech industry	72	27.47
2.1.2 Active mobile-broadband subscriptions	103	14.54	4.1.2 High-tech exports	90	5.32
2.1.3 Use of virtual social networks	102	18.92	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	98	8.79	4.1.4 Labour productivity per employee	90	7.03
2.1.5 Adult literacy rate	93	25.47	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	98	35.66
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	111	23.30
2.2.1 Firms with website	93	20.77	4.2.3 Income inequality	75	59.74
2.2.2 Internet shopping	105	3.24	4.2.4 Healthy life expectancy at birth	101	36.26
2.2.3 Professionals	104	8.67	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	109	5.56	4.3.1 Access to basic services	104	55.25
2.2.5 Extent of staff training	94	28.61	4.3.2 Pollution	100	64.12
2.2.6 R&D expenditure by businesses	88	0.04	4.3.3 Road safety	96	35.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	65	28.25
2.3.1 Government online services	101	42.31	4.3.5 Maths proficiency in schools	29	63.76
2.3.2 Publication and use of open data	91	8.74	4.3.6 Use of clean fuels and technology	100	28.89
2.3.3 ICT use and government efficiency	52	48.10			
2.3.4 R&D expenditure by governments and higher education	16	65.26			

* Confidential data

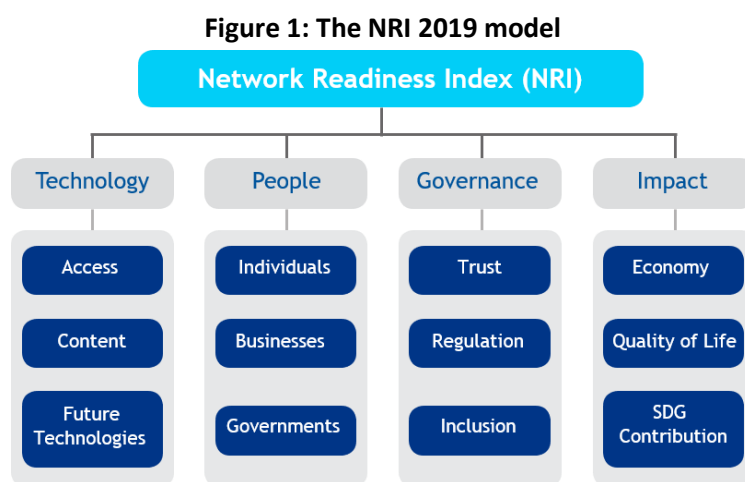
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Network Readiness Index 2019

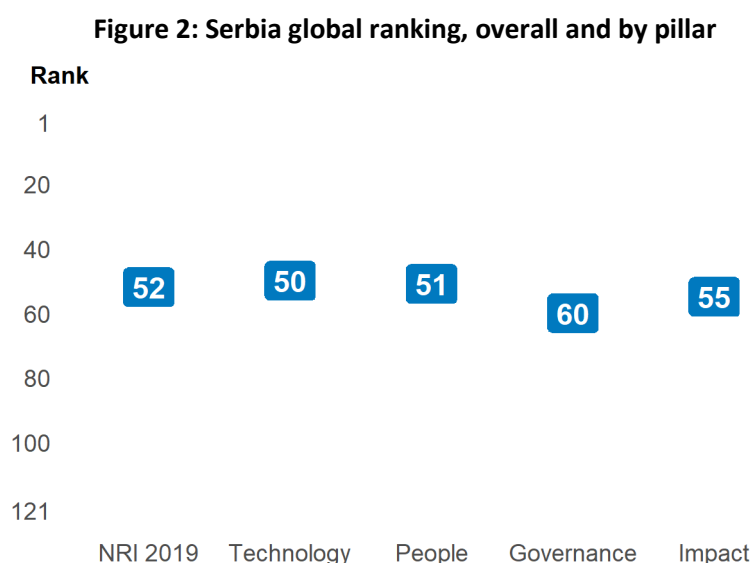
Serbia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Serbia

Serbia ranks 52nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

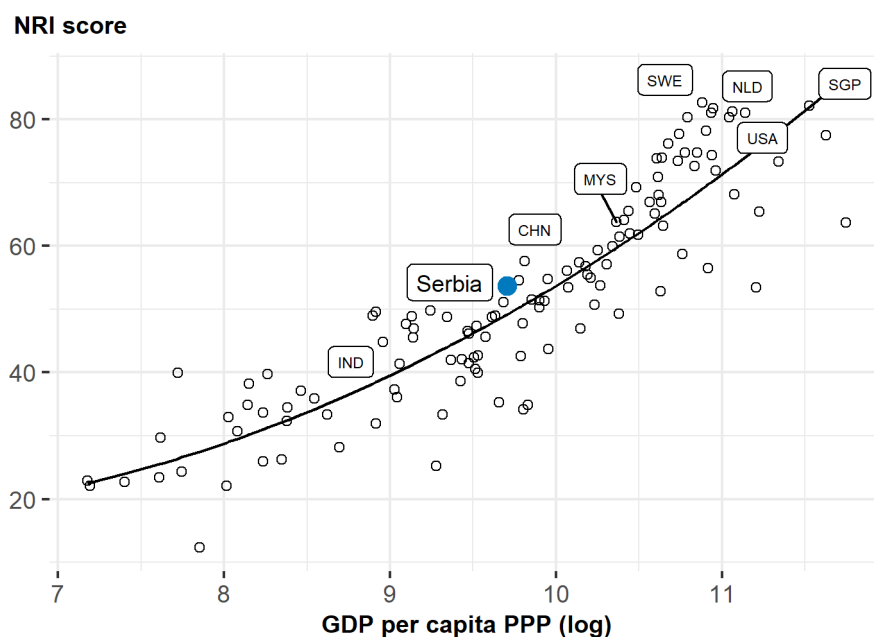
Table 1: Serbia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	39	Governments	56
Businesses	45	Individuals	63
Economy	46	Trust	63
Access	51	Regulation	68
SDG Contribution	53	Quality of Life	69
Inclusion	55	Future Technologies	104

NRI score and income

Figure 3 shows the position of Serbia 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, Serbia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Serbia belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Upper-middle-income countries

Serbia is ranked 8th 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, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Serbia 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 trails the regional average in each of them.

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

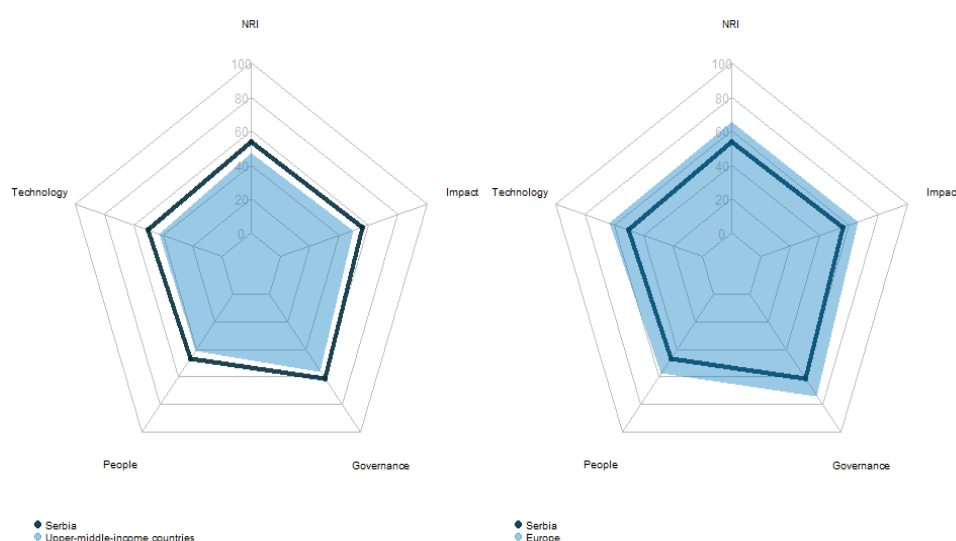


Table 2: Serbia scores vs. averages of its income group and region, overall and by pillar

Dimension	Serbia	Upper-middle-income countries	Europe
NRI	53.65	47.40	65.20
Technology	50.54	42.66	63.08
People	46.53	41.07	57.50
Governance	61.49	56.24	73.99
Impact	56.03	49.62	66.24

Strongest and weakest indicators

The indicators where Serbia performs particularly well include ICT regulatory environment, R&D expenditure by governments and higher education, and Fixed-broadband subscriptions (Table 3). By contrast, the economy's weakest indicators include Computer software spending, Freedom to make life choices, and Government procurement of advanced technology products.

Table 3: Top-ranked and bottom-ranked indicators of Serbia

Strongest indicators	Rank	Weakest indicators	Rank
ICT regulatory environment	20	Pollution	80
R&D expenditure by governments and higher education	26	Access to basic services	81
Fixed-broadband subscriptions	27	Extent of staff training	83
Adult literacy rate	27	Use of clean fuels and technology	83
Firms with website	28	Use of virtual social networks	84
Road safety	29	Company investment in emerging technology	88
Tertiary enrolment	34	Social safety net protection	88
Intellectual property receipts	35	Government procurement of advanced technology products	91
Digital participation and content creation	38	Freedom to make life choices	93
ICT skills	40	Computer software spending	97

NRI 2019 At-A-Glance: Serbia

Network Readiness Index

Rank: 52 (out of 121)

Score: 53.65

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	50	50.54	C. Governance pillar	60	61.49
1st sub-pillar: Access	51	73.79	1st sub-pillar: Trust	63	56.23
2nd sub-pillar: Content	39	58.26	2nd sub-pillar: Regulation	68	62.44
3rd sub-pillar: Future Technologies	104	19.59	3rd sub-pillar: Inclusion	55	65.80
B. People pillar	51	46.53	D. Impact pillar	55	56.03
1st sub-pillar: Individuals	63	55.30	1st sub-pillar: Economy	46	26.38
2nd sub-pillar: Businesses	45	37.20	2nd sub-pillar: Quality of Life	69	59.56
3rd sub-pillar: Governments	56	47.09	3rd sub-pillar: SDG Contribution	53	82.14

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	58	66.86	3.1.1 Rule of law	67	49.99
1.1.2 Handset prices	66	44.90	3.1.2 Software piracy rate	65	31.08
1.1.3 Internet access	58	71.09	3.1.3 Secure Internet servers	41	75.42
1.1.4 4G mobile network coverage	48	96.70	3.1.4 Cybersecurity	60	68.42
1.1.5 Fixed-broadband subscriptions	27	92.91	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	48	70.25	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	66	51.58
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	43	80.34
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	64	42.84
1.2.2 Mobile apps development	42	71.07	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	35	1.26	3.2.5 Social safety net protection	88	30.47
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	20	94.41
1.3.1 Availability of latest technologies	80	43.11	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	88	25.53	3.3.1 E-Participation	48	78.98
1.3.3 Government procurement of advanced technology products	91	28.32	3.3.2 Socioeconomic gap in use of digital payments	54	73.24
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	42	63.28
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	70	51.52
1.3.6 Robot density	53	0.99	3.3.5 Rural gap in use of digital payments	73	62.00
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	56	70.74	4.1.1 Medium and high-tech industry	56	33.50
2.1.2 Active mobile-broadband subscriptions	78	25.01	4.1.2 High-tech exports	NA	NA
2.1.3 Use of virtual social networks	84	41.79	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	34	48.86	4.1.4 Labour productivity per employee	71	19.26
2.1.5 Adult literacy rate	27	97.39	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	40	48.00	4.2.1 Happiness	52	59.97
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	93	48.93
2.2.1 Firms with website	28	71.91	4.2.3 Income inequality	72	61.58
2.2.2 Internet shopping	52	25.17	4.2.4 Healthy life expectancy at birth	48	67.77
2.2.3 Professionals	47	35.28	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	40	50.60	4.3.1 Access to basic services	81	87.51
2.2.5 Extent of staff training	83	31.60	4.3.2 Pollution	80	79.07
2.2.6 R&D expenditure by businesses	45	8.65	4.3.3 Road safety	29	85.31
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	57	70.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	64	22.77	4.3.6 Use of clean fuels and technology	83	76.67
2.3.3 ICT use and government efficiency	68	41.57			
2.3.4 R&D expenditure by governments and higher education	26	53.24			

* Confidential data

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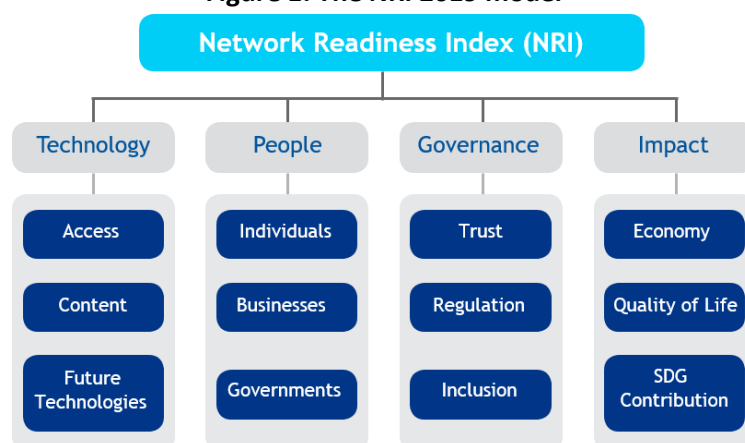
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Network Readiness Index 2019

Singapore

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

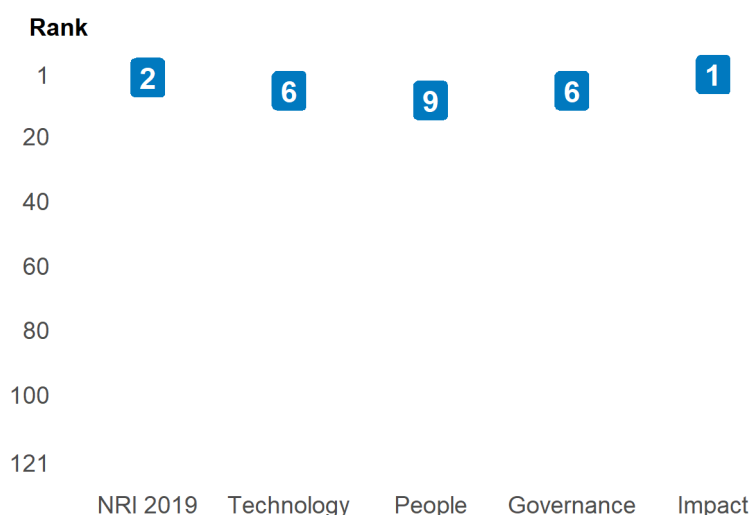
Figure 1: The NRI 2019 model



Global NRI position of Singapore

Singapore ranks 2nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Singapore global ranking, overall and by pillar



Performance at sub-pillar level

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

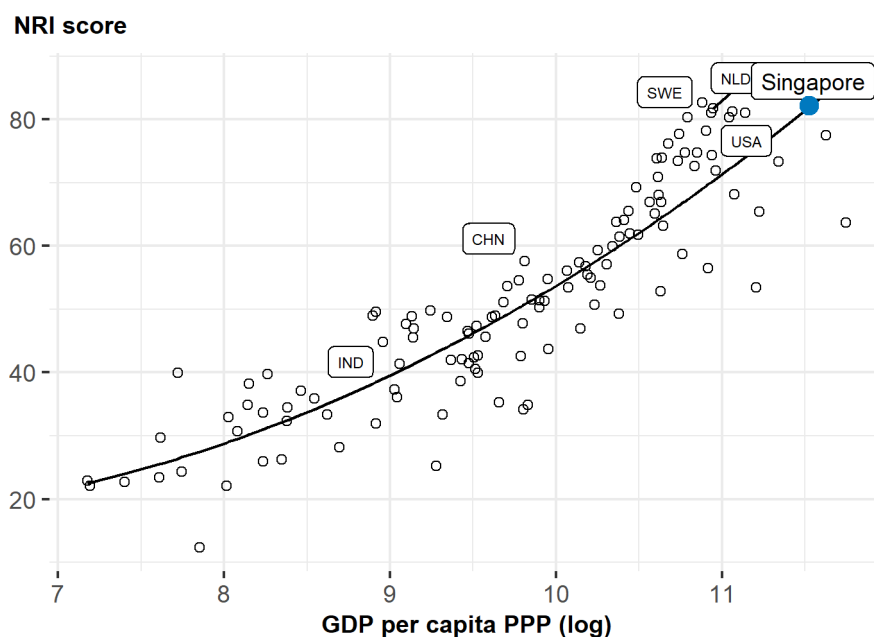
Table 1: Singapore rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	1	Individuals	7
Inclusion	2	SDG Contribution	9
Future Technologies	4	Quality of Life	12
Access	5	Trust	13
Governments	5	Content	16
Regulation	5	Businesses	16

NRI score and income

Figure 3 shows the position of Singapore 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, Singapore 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: SWE = Sweden (rank: 1), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Singapore belongs to the group of high-income countries, where the best performer is Sweden (SWE). Singapore is the top performer in its region, Asia & Pacific.

Performance against its income group and region

High-income countries

Singapore is ranked 2nd 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 each of the four pillars. At the sub-pillar level, it has a higher score than the average of high-income countries in all of them.

Asia & Pacific

Singapore is ranked 1st within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

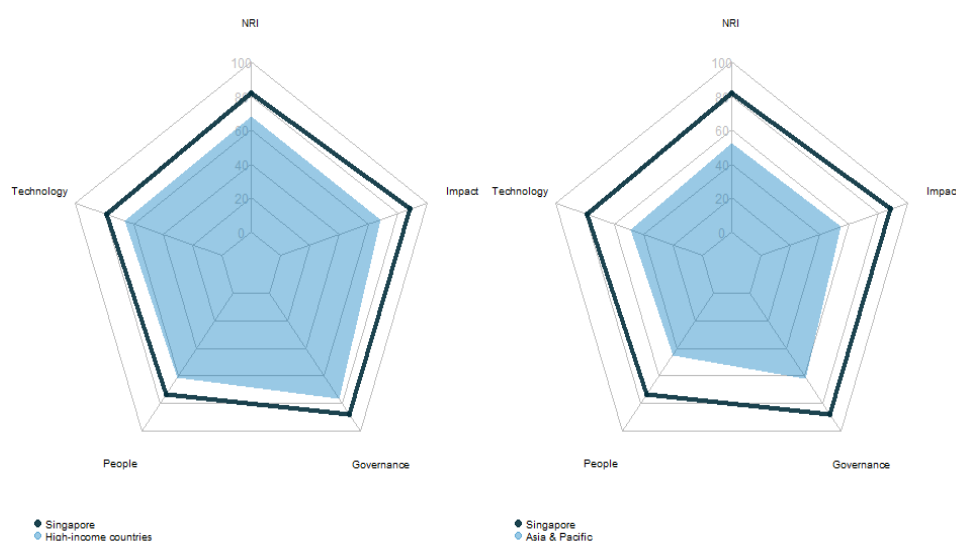


Table 2: Singapore scores vs. averages of its income group and region, overall and by pillar

Dimension	Singapore	High-income countries	Asia & Pacific
NRI	82.13	68.12	52.44
Technology	78.45	66.07	48.56
People	73.55	61.07	44.85
Governance	88.19	77.07	61.84
Impact	88.33	68.29	54.50

Strongest and weakest indicators

The indicators where Singapore performs particularly well include 4G mobile network coverage, Mobile apps development, and Robot density (Table 3). By contrast, the economy's weakest indicators include Online trust and safety, Pollution, and Social safety net protection.

Table 3: Top-ranked and bottom-ranked indicators of Singapore

Strongest indicators	Rank	Weakest indicators	Rank
4G mobile network coverage	1	Socioeconomic gap in use of digital payments	25
Mobile apps development	1	ICT skills	26
Robot density	1	Handset prices	27
ICT use and government efficiency	1	Computer software spending	30
E-commerce legislation	1	Happiness	30
Medium and high-tech industry	1	Gender gap in internet use	32
Healthy life expectancy at birth	1	Adult literacy rate	35
Access to basic services	1	Social safety net protection	38
Use of clean fuels and technology	1	Pollution	58
Government online services	2	Online trust and safety	60

NRI 2019 At-A-Glance: Singapore

Network Readiness Index

Rank: 2 (out of 121)

Score: 82.13

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	6	78.45	C. Governance pillar	6	88.19
1st sub-pillar: Access	5	89.69	1st sub-pillar: Trust	13	85.56
2nd sub-pillar: Content	16	71.48	2nd sub-pillar: Regulation	5	90.83
3rd sub-pillar: Future Technologies	4	74.19	3rd sub-pillar: Inclusion	2	88.19
B. People pillar	9	73.55	D. Impact pillar	1	88.33
1st sub-pillar: Individuals	7	73.20	1st sub-pillar: Economy	1	82.22
2nd sub-pillar: Businesses	16	64.47	2nd sub-pillar: Quality of Life	12	86.28
3rd sub-pillar: Governments	5	82.97	3rd sub-pillar: SDG Contribution	9	96.49

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	7	93.63	3.1.1 Rule of law	7	95.41
1.1.2 Handset prices	27	64.61	3.1.2 Software piracy rate	17	83.78
1.1.3 Internet access	6	97.58	3.1.3 Secure Internet servers	3	96.81
1.1.4 4G mobile network coverage	1	100.00	3.1.4 Cybersecurity	6	96.38
1.1.5 Fixed-broadband subscriptions	15	95.90	3.1.5 Online trust and safety	60	55.40
1.1.6 International Internet bandwidth	3	86.40	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	2	98.36
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	2	99.00
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	4	94.44
1.2.2 Mobile apps development	1	100.00	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	15	9.66	3.2.5 Social safety net protection	38	59.91
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	25	93.25
1.3.1 Availability of latest technologies	15	87.11	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	13	76.79	3.3.1 E-Participation	13	96.18
1.3.3 Government procurement of advanced technology products	5	84.99	3.3.2 Socioeconomic gap in use of digital payments	25	90.74
1.3.4 ICT PCT patent applications	10	68.96	3.3.3 Availability of local online content	7	90.82
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	32	64.36
1.3.6 Robot density	1	100.00	3.3.5 Rural gap in use of digital payments	2	98.86
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	22	87.22	4.1.1 Medium and high-tech industry	1	100.00
2.1.2 Active mobile-broadband subscriptions	6	57.25	4.1.2 High-tech exports	3	98.01
2.1.3 Use of virtual social networks	9	79.21	4.1.3 PCT patent applications	13	41.21
2.1.4 Tertiary enrolment	13	61.84	4.1.4 Labour productivity per employee	2	89.64
2.1.5 Adult literacy rate	35	95.92	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	26	57.77	4.2.1 Happiness	30	69.10
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	20	89.73
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	22	61.58	4.2.4 Healthy life expectancy at birth	1	100.00
2.2.3 Professionals	21	51.81	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	4	90.75	4.3.1 Access to basic services	1	100.00
2.2.5 Extent of staff training	6	84.23	4.3.2 Pollution	58	85.86
2.2.6 R&D expenditure by businesses	16	34.00	4.3.3 Road safety	3	99.69
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	11	98.02
2.3.1 Government online services	2	98.46	4.3.5 Maths proficiency in schools	4	95.38
2.3.2 Publication and use of open data	23	52.69	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	1	100.00			
2.3.4 R&D expenditure by governments and higher education	8	80.74			

* Confidential data

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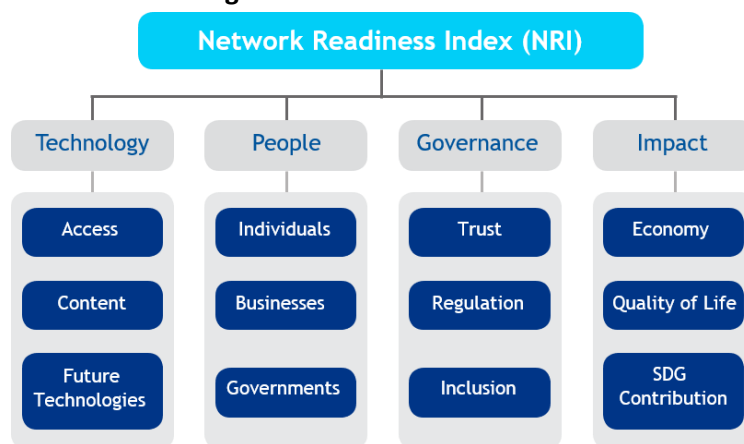
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Network Readiness Index 2019

Slovakia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

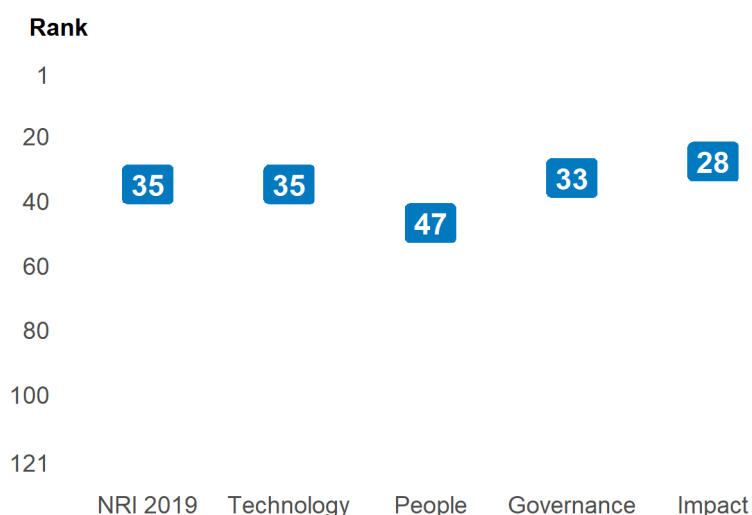
Figure 1: The NRI 2019 model



Global NRI position of Slovakia

Slovakia ranks 35th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Slovakia global ranking, overall and by pillar



Performance at sub-pillar level

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

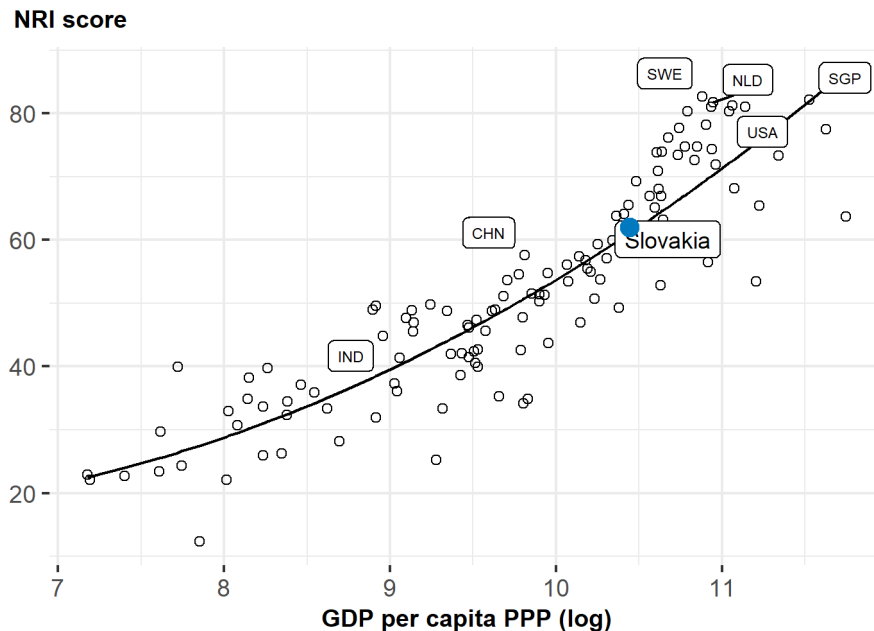
Table 1: Slovakia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	20	Inclusion	37
Trust	28	Access	38
Businesses	33	Content	38
Economy	33	Regulation	44
Quality of Life	33	Governments	57
Future Technologies	36	Individuals	80

NRI score and income

Figure 3 shows the position of Slovakia 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, Slovakia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Slovakia belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Slovakia is ranked 34th 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 outperforms high-income countries in one of the twelve sub-pillars: SDG Contribution.

Europe

Slovakia is ranked 24th within Europe (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Impact. With regard to sub-pillars, it outperforms the average in Europe in three of the twelve sub-pillars: Trust, Inclusion and SDG Contribution.

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



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

Dimension	Slovakia	High-income countries	Europe
NRI	61.95	68.12	65.20
Technology	60.00	66.07	63.08
People	48.62	61.07	57.50
Governance	72.78	77.07	73.99
Impact	66.39	68.29	66.24

Strongest and weakest indicators

The indicators where Slovakia performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Income inequality (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, ICT use and government efficiency, and Legal framework's adaptability to digital business models.

Table 3: Top-ranked and bottom-ranked indicators of Slovakia

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Pollution	53
Use of clean fuels and technology	1	4G mobile network coverage	54
Income inequality	6	Government online services	57
Medium and high-tech industry	12	Tertiary enrolment	64
Robot density	16	Government procurement of advanced technology products	68
Technicians and associate professionals	19	Intellectual property receipts	69
Gender gap in internet use	22	Use of virtual social networks	74
Road safety	22	Legal framework's adaptability to digital business models	75
Internet access in schools	24	ICT use and government efficiency	81
ICT skills	24	Freedom to make life choices	87

NRI 2019 At-A-Glance: Slovakia

Network Readiness Index

Rank: 35 (out of 121)

Score: 61.95

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	35	60.00	C. Governance pillar	33	72.78
1st sub-pillar: Access	38	78.59	1st sub-pillar: Trust	28	74.26
2nd sub-pillar: Content	38	60.43	2nd sub-pillar: Regulation	44	70.96
3rd sub-pillar: Future Technologies	36	40.99	3rd sub-pillar: Inclusion	37	73.13
B. People pillar	47	48.62	D. Impact pillar	28	66.39
1st sub-pillar: Individuals	80	50.73	1st sub-pillar: Economy	33	33.95
2nd sub-pillar: Businesses	33	48.09	2nd sub-pillar: Quality of Life	33	71.59
3rd sub-pillar: Governments	57	47.03	3rd sub-pillar: SDG Contribution	20	93.64

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	36	74.43	3.1.1 Rule of law	40	65.40
1.1.2 Handset prices	48	55.08	3.1.2 Software piracy rate	25	72.97
1.1.3 Internet access	43	80.08	3.1.3 Secure Internet servers	33	80.82
1.1.4 4G mobile network coverage	54	94.00	3.1.4 Cybersecurity	47	77.85
1.1.5 Fixed-broadband subscriptions	53	74.89	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	36	71.94	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	24	99.70	3.2.1 Regulatory quality	37	69.27
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	44	80.22
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	75	38.41
1.2.2 Mobile apps development	37	74.63	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	69	0.22	3.2.5 Social safety net protection	50	48.48
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	39	89.39
1.3.1 Availability of latest technologies	38	68.28	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	44	45.13	3.3.1 E-Participation	50	78.34
1.3.3 Government procurement of advanced technology products	68	37.98	3.3.2 Socioeconomic gap in use of digital payments	39	80.38
1.3.4 ICT PCT patent applications	39	18.53	3.3.3 Availability of local online content	41	64.98
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	22	66.50
1.3.6 Robot density	16	48.76	3.3.5 Rural gap in use of digital payments	28	75.42
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	38	78.86	4.1.1 Medium and high-tech industry	12	65.65
2.1.2 Active mobile-broadband subscriptions	52	32.78	4.1.2 High-tech exports	43	20.04
2.1.3 Use of virtual social networks	74	49.06	4.1.3 PCT patent applications	34	3.68
2.1.4 Tertiary enrolment	64	33.74	4.1.4 Labour productivity per employee	31	46.43
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	24	59.21	4.2.1 Happiness	39	66.19
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	87	53.03
2.2.1 Firms with website	25	74.57	4.2.3 Income inequality	6	96.05
2.2.2 Internet shopping	31	53.52	4.2.4 Healthy life expectancy at birth	40	71.06
2.2.3 Professionals	51	31.56	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	19	68.37	4.3.1 Access to basic services	37	98.50
2.2.5 Extent of staff training	50	48.40	4.3.2 Pollution	53	86.67
2.2.6 R&D expenditure by businesses	39	12.10	4.3.3 Road safety	22	89.38
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	57	70.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	30	44.90	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	81	36.61			
2.3.4 R&D expenditure by governments and higher education	46	35.83			

* Confidential data

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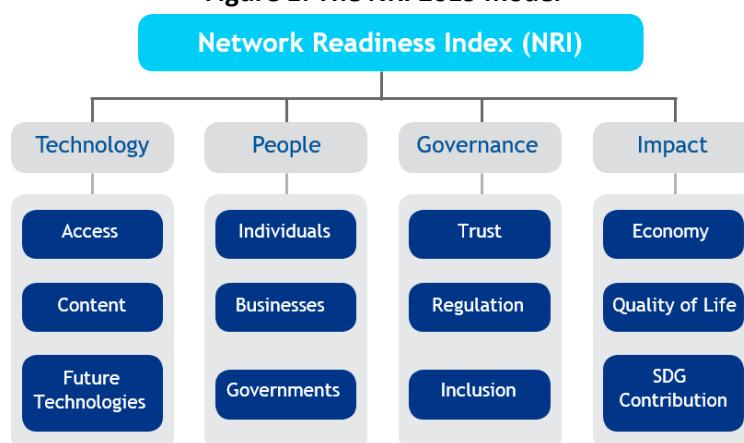
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Network Readiness Index 2019

Slovenia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

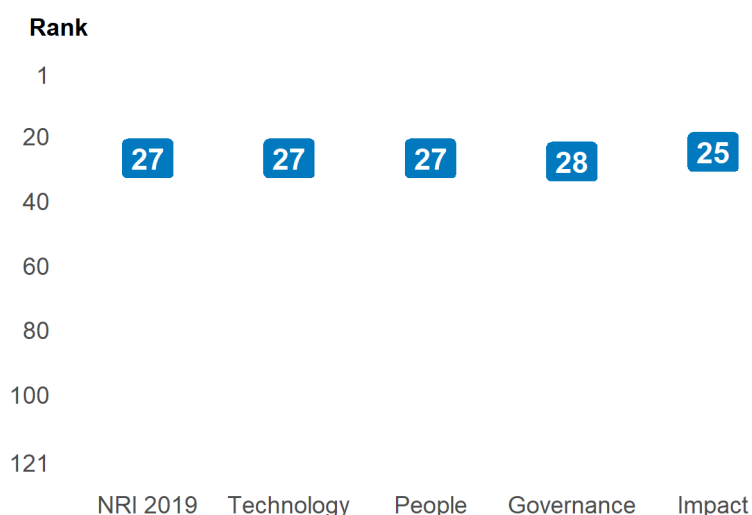
Figure 1: The NRI 2019 model



Global NRI position of Slovenia

Slovenia ranks 27th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Slovenia global ranking, overall and by pillar



Performance at sub-pillar level

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

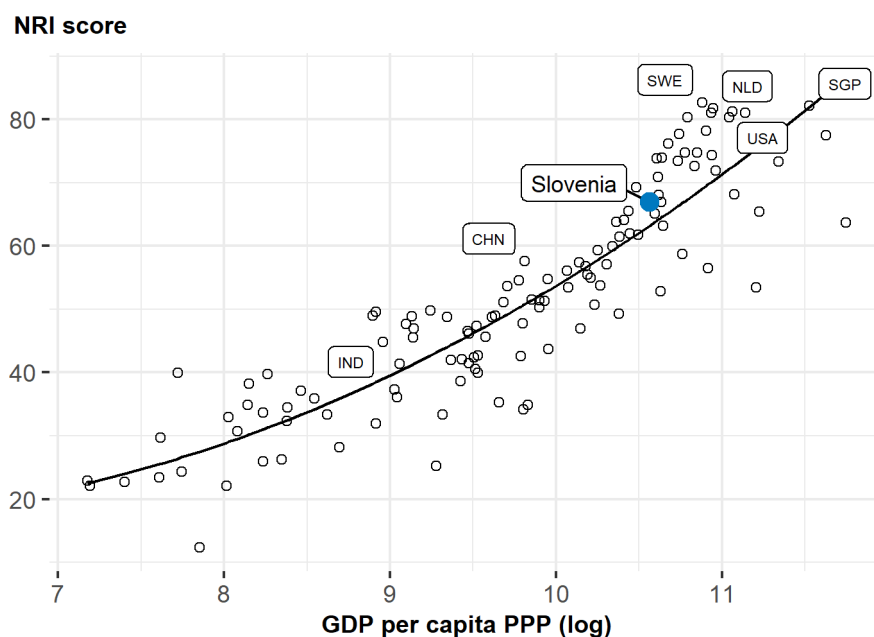
Table 1: Slovenia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	13	SDG Contribution	29
Content	18	Inclusion	30
Access	24	Future Technologies	38
Businesses	24	Individuals	38
Trust	25	Governments	39
Regulation	29	Economy	41

NRI score and income

Figure 3 shows the position of Slovenia 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, Slovenia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Slovenia belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Slovenia is ranked 27th 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 six of the twelve sub-pillars: Access, Content, Businesses, Trust, Quality of Life and SDG Contribution.

Europe

Slovenia is ranked 19th 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 eight of the twelve sub-pillars: Access, Content, Businesses, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

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

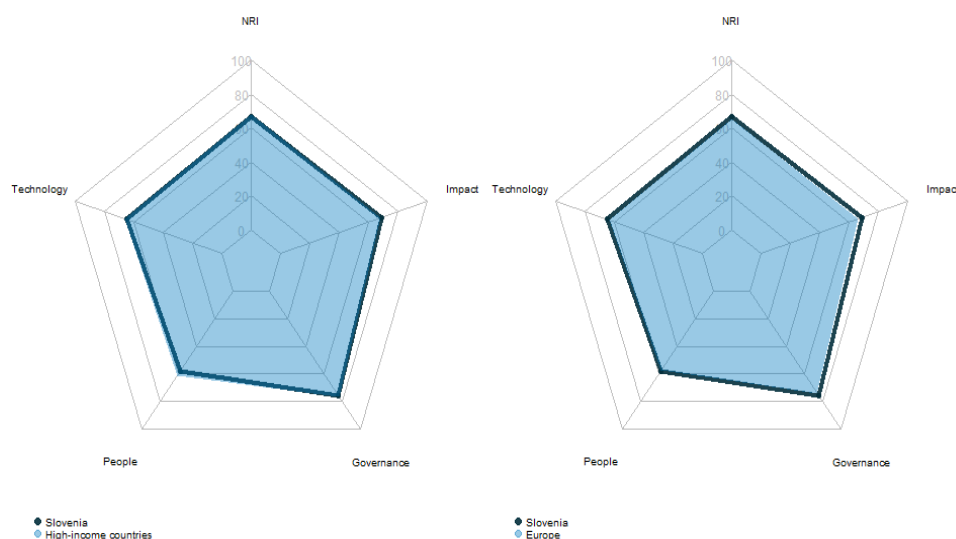


Table 2: Slovenia scores vs. averages of its income group and region, overall and by pillar

Dimension	Slovenia	High-income countries	Europe
NRI	66.89	68.12	65.20
Technology	64.86	66.07	63.08
People	58.06	61.07	57.50
Governance	76.13	77.07	73.99
Impact	68.53	68.29	66.24

Strongest and weakest indicators

The indicators where Slovenia performs particularly well include Internet access in schools, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Government procurement of advanced technology products, Computer software spending, and High-tech exports.

Table 3: Top-ranked and bottom-ranked indicators of Slovenia

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Pollution	45
E-commerce legislation	1	E-Participation	48
Use of clean fuels and technology	1	Cybersecurity	50
Income inequality	2	ICT use and government efficiency	59
Freedom to make life choices	7	Active mobile-broadband subscriptions	60
Firms with website	9	Gender gap in internet use	61
Adult literacy rate	11	Use of virtual social networks	65
Robot density	13	High-tech exports	66
Secure Internet servers	14	Computer software spending	77
Digital participation and content creation	15	Government procurement of advanced technology products	106

NRI 2019 At-A-Glance: Slovenia

Network Readiness Index

Rank: 27 (out of 121)

Score: 66.89

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	27	64.86	C. Governance pillar	28	76.13
1st sub-pillar: Access	24	83.54	1st sub-pillar: Trust	25	76.48
2nd sub-pillar: Content	18	71.29	2nd sub-pillar: Regulation	29	77.59
3rd sub-pillar: Future Technologies	38	39.76	3rd sub-pillar: Inclusion	30	74.32
B. People pillar	27	58.06	D. Impact pillar	25	68.53
1st sub-pillar: Individuals	38	61.87	1st sub-pillar: Economy	41	28.87
2nd sub-pillar: Businesses	24	57.45	2nd sub-pillar: Quality of Life	13	85.08
3rd sub-pillar: Governments	39	54.85	3rd sub-pillar: SDG Contribution	29	91.64

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	29	78.51	3.1.1 Rule of law	26	77.47
1.1.2 Handset prices	38	58.52	3.1.2 Software piracy rate	29	64.86
1.1.3 Internet access	29	85.79	3.1.3 Secure Internet servers	14	88.80
1.1.4 4G mobile network coverage	19	99.50	3.1.4 Cybersecurity	50	74.78
1.1.5 Fixed-broadband subscriptions	36	87.57	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	17	74.87	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	38	66.72
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	36	81.87
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	44	51.74
1.2.2 Mobile apps development	19	84.15	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	43	0.89	3.2.5 Social safety net protection	27	69.63
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	15	95.56
1.3.1 Availability of latest technologies	26	76.99	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	41	47.52	3.3.1 E-Participation	48	78.98
1.3.3 Government procurement of advanced technology products	106	22.86	3.3.2 Socioeconomic gap in use of digital payments	17	95.23
1.3.4 ICT PCT patent applications	29	30.55	3.3.3 Availability of local online content	39	65.30
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	61	57.57
1.3.6 Robot density	13	51.53	3.3.5 Rural gap in use of digital payments	35	74.54
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	41	77.85	4.1.1 Medium and high-tech industry	36	47.78
2.1.2 Active mobile-broadband subscriptions	60	29.37	4.1.2 High-tech exports	66	12.89
2.1.3 Use of virtual social networks	65	52.18	4.1.3 PCT patent applications	25	12.11
2.1.4 Tertiary enrolment	21	57.27	4.1.4 Labour productivity per employee	37	42.71
2.1.5 Adult literacy rate	11	99.57	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	30	54.95	4.2.1 Happiness	38	66.49
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	7	95.74
2.2.1 Firms with website	9	84.94	4.2.3 Income inequality	2	98.95
2.2.2 Internet shopping	27	58.35	4.2.4 Healthy life expectancy at birth	29	79.12
2.2.3 Professionals	16	57.72	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	30	56.82	4.3.1 Access to basic services	31	99.11
2.2.5 Extent of staff training	40	51.79	4.3.2 Pollution	45	88.62
2.2.6 R&D expenditure by businesses	15	35.10	4.3.3 Road safety	26	88.44
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	15	97.07
2.3.1 Government online services	45	77.69	4.3.5 Maths proficiency in schools	18	76.63
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	59	45.21			
2.3.4 R&D expenditure by governments and higher education	38	41.65			

* Confidential data

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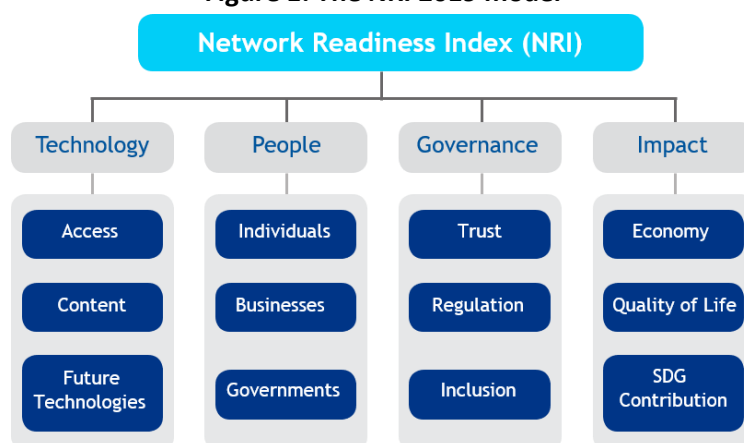
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Network Readiness Index 2019

South Africa

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

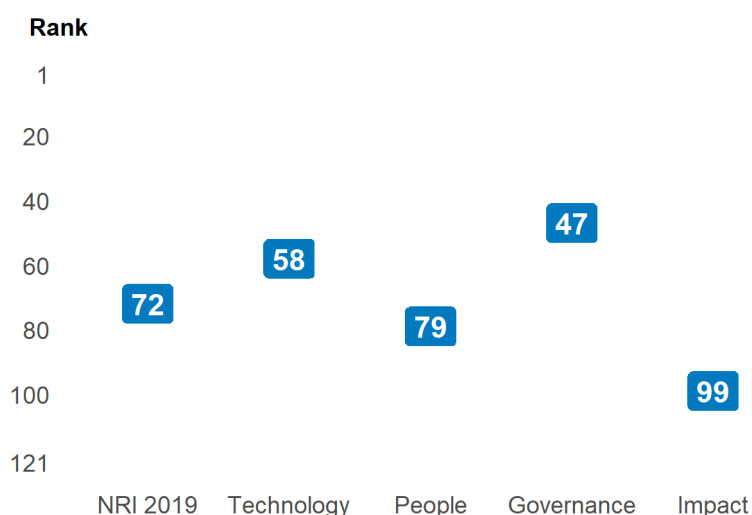
Figure 1: The NRI 2019 model



Global NRI position of South Africa

South Africa ranks 72nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: South Africa global ranking, overall and by pillar



Performance at sub-pillar level

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

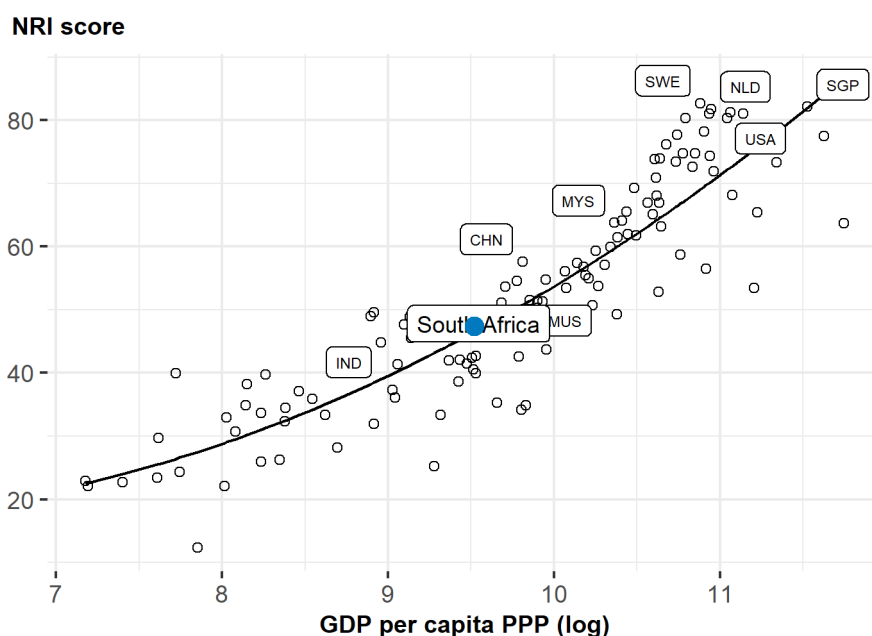
Table 1: South Africa rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Trust	38	Regulation	69
Inclusion	46	Economy	71
Future Technologies	53	SDG Contribution	81
Governments	53	Businesses	85
Content	54	Individuals	86
Access	69	Quality of Life	118

NRI score and income

Figure 3 shows the position of South Africa 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, South Africa 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. South Africa belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Upper-middle-income countries

South Africa is ranked 21st 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 two of the four pillars: Technology and Governance. At the sub-pillar level, it outperforms upper-middle-income countries in seven of the twelve sub-pillars: Access, Content, Future Technology, Governments, Trust, Regulation and Inclusion.

Africa

South Africa is ranked 2nd within Africa (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Africa in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

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

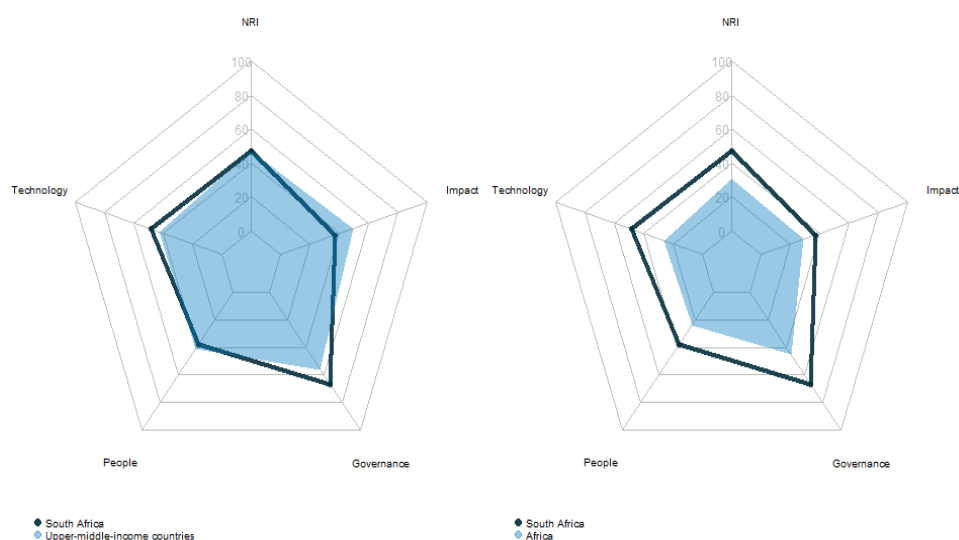


Table 2: South Africa scores vs. averages of its income group and region, overall and by pillar

Dimension	South Africa	Upper-middle-income countries	Africa
NRI	47.38	47.40	31.07
Technology	47.88	42.66	26.03
People	37.87	41.07	23.76
Governance	66.61	56.24	45.32
Impact	37.14	49.62	29.15

Strongest and weakest indicators

The indicators where South Africa performs particularly well include E-commerce legislation, Software piracy rate, and Maths proficiency in schools (Table 3). By contrast, the economy's weakest indicators include Healthy life expectancy at birth, Income inequality, and International Internet bandwidth.

Table 3: Top-ranked and bottom-ranked indicators of South Africa

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Firms with website	90
Software piracy rate	20	ICT use and government efficiency	91
Maths proficiency in schools	28	Access to basic services	91
Computer software spending	30	ICT regulatory environment	94
Rural gap in use of digital payments	34	Happiness	95
Secure Internet servers	35	Professionals	96
Robot density	36	Road safety	103
Government online services	37	International Internet bandwidth	106
R&D expenditure by governments and higher education	39	Income inequality	107
E-Participation	39	Healthy life expectancy at birth	111

NRI 2019 At-A-Glance: South Africa

Network Readiness Index

Rank: 72 (out of 121)

Score: 47.38

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	58	47.88	C. Governance pillar	47	66.61
1st sub-pillar: Access	69	61.33	1st sub-pillar: Trust	38	69.07
2nd sub-pillar: Content	54	48.92	2nd sub-pillar: Regulation	69	61.96
3rd sub-pillar: Future Technologies	53	33.39	3rd sub-pillar: Inclusion	46	68.81
B. People pillar	79	37.87	D. Impact pillar	99	37.14
1st sub-pillar: Individuals	86	42.95	1st sub-pillar: Economy	71	17.28
2nd sub-pillar: Businesses	85	23.22	2nd sub-pillar: Quality of Life	118	28.71
3rd sub-pillar: Governments	53	47.44	3rd sub-pillar: SDG Contribution	81	65.42

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	63	64.43	3.1.1 Rule of law	64	51.00
1.1.2 Handset prices	47	55.16	3.1.2 Software piracy rate	20	77.03
1.1.3 Internet access	71	59.28	3.1.3 Secure Internet servers	35	80.16
1.1.4 4G mobile network coverage	64	90.32	3.1.4 Cybersecurity	57	69.41
1.1.5 Fixed-broadband subscriptions	78	41.30	3.1.5 Online trust and safety	40	67.73
1.1.6 International Internet bandwidth	106	57.50	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	59	55.20
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	77	65.07
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	51	45.91
1.2.2 Mobile apps development	66	59.32	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	54	0.66	3.2.5 Social safety net protection	76	35.69
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	94	69.88
1.3.1 Availability of latest technologies	44	62.75	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	40	47.75	3.3.1 E-Participation	39	82.80
1.3.3 Government procurement of advanced technology products	51	44.37	3.3.2 Socioeconomic gap in use of digital payments	52	74.94
1.3.4 ICT PCT patent applications	46	10.85	3.3.3 Availability of local online content	78	42.56
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	36	7.36	3.3.5 Rural gap in use of digital payments	34	74.94
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	85	51.60	4.1.1 Medium and high-tech industry	63	31.04
2.1.2 Active mobile-broadband subscriptions	65	28.68	4.1.2 High-tech exports	74	10.07
2.1.3 Use of virtual social networks	87	38.67	4.1.3 PCT patent applications	48	1.48
2.1.4 Tertiary enrolment	89	15.87	4.1.4 Labour productivity per employee	58	26.52
2.1.5 Adult literacy rate	69	79.96	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	95	38.05
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	89	51.90
2.2.1 Firms with website	90	22.59	4.2.3 Income inequality	107	0.00
2.2.2 Internet shopping	73	10.05	4.2.4 Healthy life expectancy at birth	111	24.91
2.2.3 Professionals	96	12.62	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	59	37.77	4.3.1 Access to basic services	91	79.18
2.2.5 Extent of staff training	51	47.68	4.3.2 Pollution	76	79.86
2.2.6 R&D expenditure by businesses	46	8.62	4.3.3 Road safety	103	27.50
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	57	51.00
2.3.1 Government online services	37	81.54	4.3.5 Maths proficiency in schools	28	65.02
2.3.2 Publication and use of open data	46	34.43	4.3.6 Use of clean fuels and technology	75	90.00
2.3.3 ICT use and government efficiency	91	32.70			
2.3.4 R&D expenditure by governments and higher education	39	41.08			

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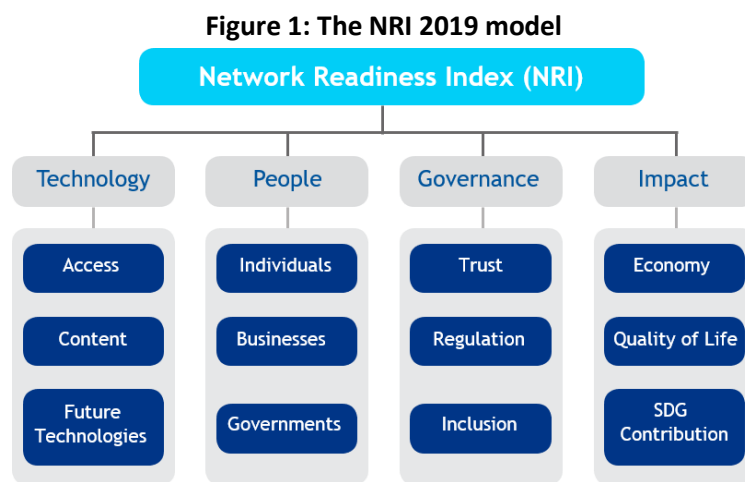
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Network Readiness Index 2019

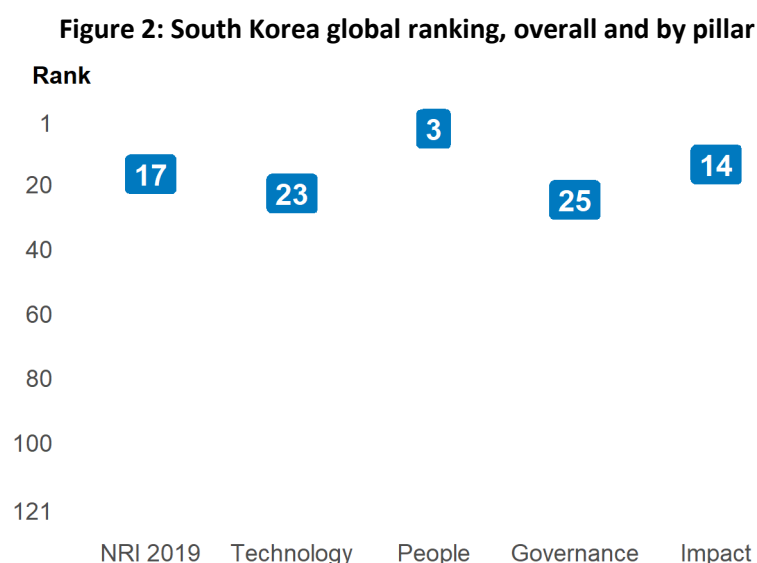
South Korea

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of South Korea

South Korea ranks 17th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

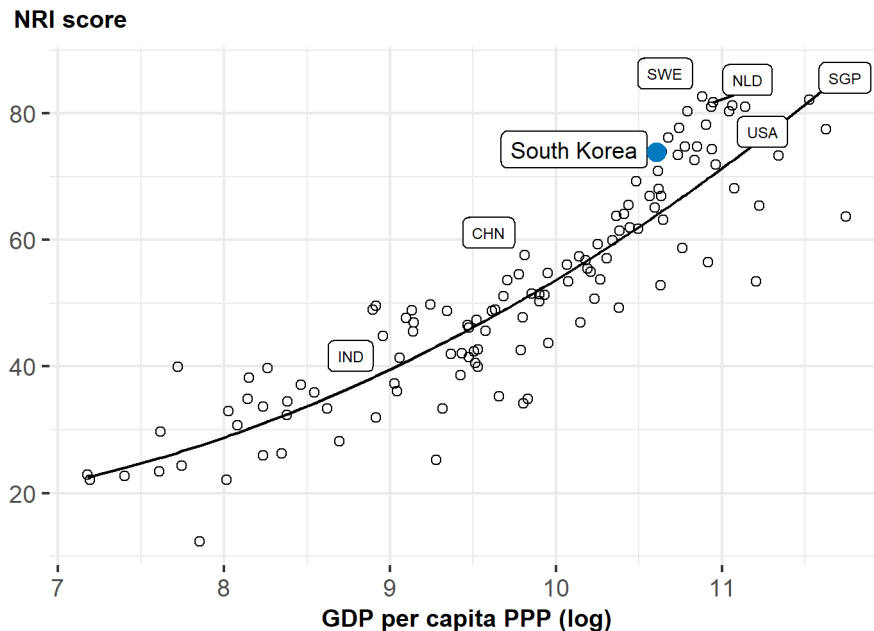
Table 1: South Korea rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	1	Access	20
Economy	2	Regulation	27
Individuals	10	Trust	30
Businesses	10	SDG Contribution	32
Future Technologies	12	Content	43
Inclusion	19	Quality of Life	64

NRI score and income

Figure 3 shows the position of South Korea 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, South Korea 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. South Korea belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

High-income countries

South Korea is ranked 17th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in eight of the twelve sub-pillars: Access, Future Technology, Individuals, Businesses, Governments, Inclusion, Economy and SDG Contribution.

Asia & Pacific

South Korea is ranked 5th within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Asia & Pacific in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

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

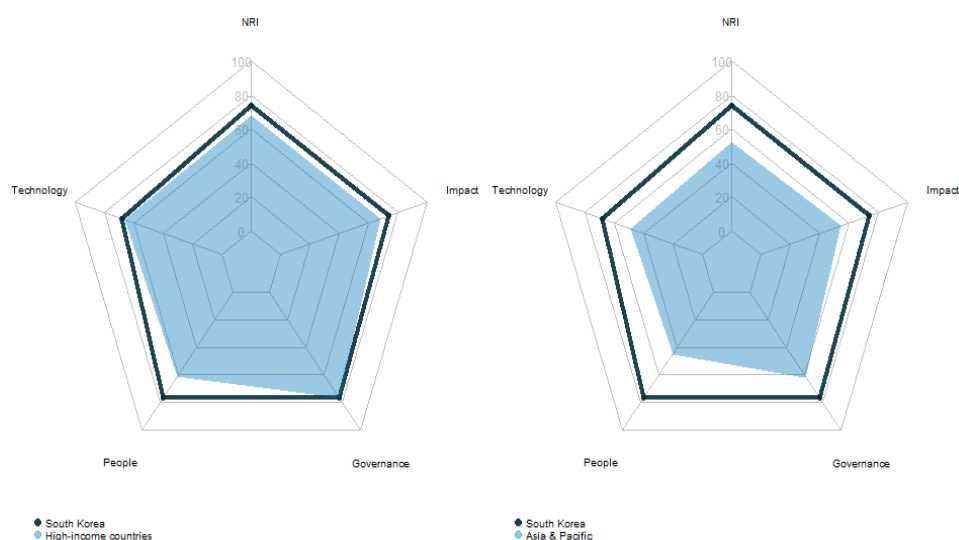


Table 2: South Korea scores vs. averages of its income group and region, overall and by pillar

Dimension	South Korea	High-income countries	Asia & Pacific
NRI	73.84	68.12	52.44
Technology	67.93	66.07	48.56
People	76.43	61.07	44.85
Governance	77.07	77.07	61.84
Impact	73.94	68.29	54.50

Strongest and weakest indicators

The indicators where South Korea performs particularly well include Fixed-broadband subscriptions, Internet access in schools, and Robot density (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Pollution, and ICT regulatory environment.

Table 3: Top-ranked and bottom-ranked indicators of South Korea

Strongest indicators	Rank	Weakest indicators	Rank
Fixed-broadband subscriptions	1	Firms with website	55
Internet access in schools	1	Computer software spending	59
Robot density	1	Happiness	60
E-commerce legislation	1	International Internet bandwidth	64
E-Participation	1	Online trust and safety	64
Use of clean fuels and technology	1	Rural gap in use of digital payments	64
Internet access	2	Mobile tariffs	71
R&D expenditure by businesses	2	ICT regulatory environment	72
Maths proficiency in schools	2	Pollution	82
ICT PCT patent applications	3	Freedom to make life choices	116

NRI 2019 At-A-Glance: South Korea

Network Readiness Index

Rank: 17 (out of 121)

Score: 73.84

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	23	67.93	C. Governance pillar	25	77.07
1st sub-pillar: Access	20	84.47	1st sub-pillar: Trust	30	73.75
2nd sub-pillar: Content	43	53.89	2nd sub-pillar: Regulation	27	77.92
3rd sub-pillar: Future Technologies	12	65.44	3rd sub-pillar: Inclusion	19	79.55
B. People pillar	3	76.43	D. Impact pillar	14	73.94
1st sub-pillar: Individuals	10	71.90	1st sub-pillar: Economy	2	69.37
2nd sub-pillar: Businesses	10	71.20	2nd sub-pillar: Quality of Life	64	61.36
3rd sub-pillar: Governments	1	86.18	3rd sub-pillar: SDG Contribution	32	91.08

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	71	60.65	3.1.1 Rule of law	23	81.53
1.1.2 Handset prices	32	63.16	3.1.2 Software piracy rate	20	77.03
1.1.3 Internet access	2	99.44	3.1.3 Secure Internet servers	52	65.12
1.1.4 4G mobile network coverage	9	99.90	3.1.4 Cybersecurity	17	93.64
1.1.5 Fixed-broadband subscriptions	1	100.00	3.1.5 Online trust and safety	64	51.45
1.1.6 International Internet bandwidth	64	68.17	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	30	75.53
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	5	95.11
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	29	61.03
1.2.2 Mobile apps development	26	81.69	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	18	6.90	3.2.5 Social safety net protection	44	54.00
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	72	81.86
1.3.1 Availability of latest technologies	23	79.32	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	34	56.05	3.3.1 E-Participation	1	100.00
1.3.3 Government procurement of advanced technology products	29	54.28	3.3.2 Socioeconomic gap in use of digital payments	21	93.01
1.3.4 ICT PCT patent applications	3	84.81	3.3.3 Availability of local online content	28	75.84
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	37	62.23
1.3.6 Robot density	1	100.00	3.3.5 Rural gap in use of digital payments	64	66.67
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	9	95.82	4.1.1 Medium and high-tech industry	3	81.42
2.1.2 Active mobile-broadband subscriptions	20	44.10	4.1.2 High-tech exports	5	68.87
2.1.3 Use of virtual social networks	5	85.45	4.1.3 PCT patent applications	4	80.71
2.1.4 Tertiary enrolment	3	68.88	4.1.4 Labour productivity per employee	30	46.47
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	17	65.25	4.2.1 Happiness	60	57.97
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	116	16.57
2.2.1 Firms with website	55	55.97	4.2.3 Income inequality	22	82.63
2.2.2 Internet shopping	5	92.94	4.2.4 Healthy life expectancy at birth	9	88.28
2.2.3 Professionals	20	53.08	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	13	75.96	4.3.1 Access to basic services	13	99.86
2.2.5 Extent of staff training	34	57.47	4.3.2 Pollution	82	78.73
2.2.6 R&D expenditure by businesses	2	91.77	4.3.3 Road safety	44	77.81
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	4	97.70	4.3.5 Maths proficiency in schools	2	99.01
2.3.2 Publication and use of open data	5	81.16	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	9	79.68			

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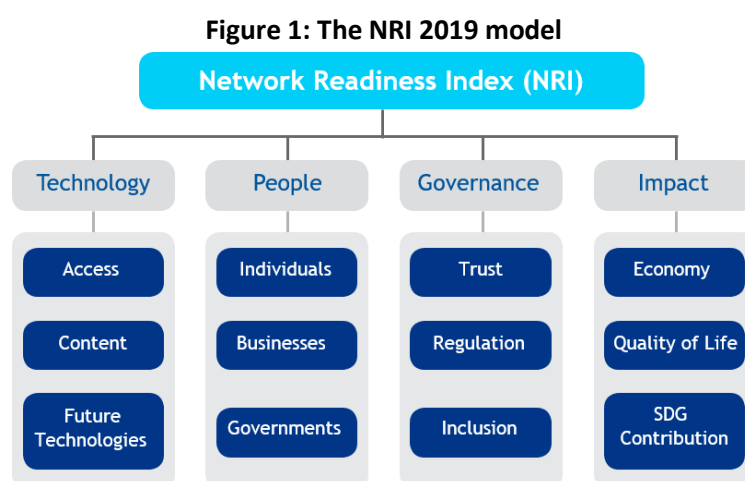
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Network Readiness Index 2019

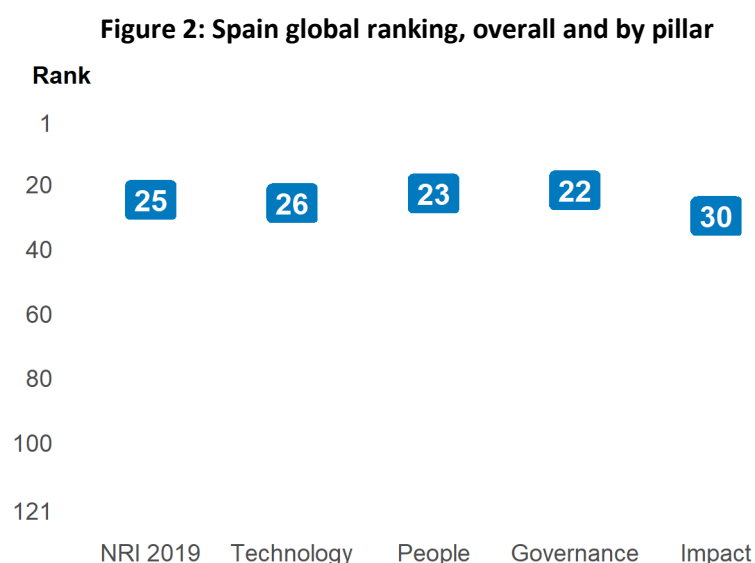
Spain

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Global NRI position of Spain

Spain ranks 25th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

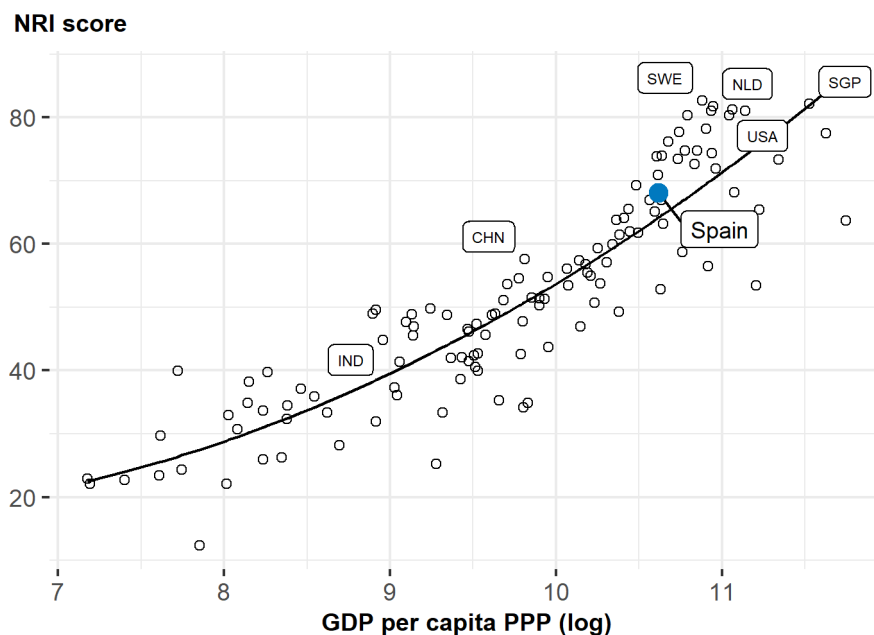
Table 1: Spain rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	11	Trust	26
Inclusion	13	Future Technologies	27
Governments	20	Businesses	31
Access	22	Content	33
SDG Contribution	23	Economy	35
Regulation	25	Quality of Life	38

NRI score and income

Figure 3 shows the position of Spain 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, Spain 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Spain belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Spain is ranked 25th 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 two of the four pillars: People and Governance. At the sub-pillar level, it outperforms high-income countries in seven of the twelve sub-pillars: Access, Individuals, Governments, Trust, Regulation, Inclusion and SDG Contribution.

Europe

Spain is ranked 17th within Europe (Figure 4, right panel). It has a score above the regional average in three of the four pillars: Score, Technology, People and Governance. With regard to sub-pillars, it outperforms the average in Europe in eight of the twelve sub-pillars: Access, Future Technology, Individuals, Governments, Trust, Regulation, Inclusion and SDG Contribution.

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



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

Dimension	Spain	High-income countries	Europe
NRI	68.01	68.12	65.20
Technology	65.30	66.07	63.08
People	62.52	61.07	57.50
Governance	79.33	77.07	73.99
Impact	64.90	68.29	66.24

Strongest and weakest indicators

The indicators where Spain performs particularly well include Internet access in schools, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, International Internet bandwidth, and Government procurement of advanced technology products.

Table 3: Top-ranked and bottom-ranked indicators of Spain

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Legal framework's adaptability to digital business models	47
E-commerce legislation	1	Use of virtual social networks	48
Use of clean fuels and technology	1	ICT regulatory environment	50
Healthy life expectancy at birth	3	Company investment in emerging technology	55
Computer software spending	4	Income inequality	56
Tertiary enrolment	5	High-tech exports	62
E-Participation	5	Extent of staff training	64
Cybersecurity	7	Government procurement of advanced technology products	74
Road safety	8	International Internet bandwidth	83
Socioeconomic gap in use of digital payments	9	Freedom to make life choices	99

NRI 2019 At-A-Glance: Spain

Network Readiness Index

Rank: 25 (out of 121)

Score: 68.01

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	26	65.30	C. Governance pillar	22	79.33
1st sub-pillar: Access	22	83.85	1st sub-pillar: Trust	26	76.16
2nd sub-pillar: Content	33	64.05	2nd sub-pillar: Regulation	25	79.28
3rd sub-pillar: Future Technologies	27	48.00	3rd sub-pillar: Inclusion	13	82.54
B. People pillar	23	62.52	D. Impact pillar	30	64.90
1st sub-pillar: Individuals	11	71.17	1st sub-pillar: Economy	35	32.27
2nd sub-pillar: Businesses	31	48.67	2nd sub-pillar: Quality of Life	38	69.64
3rd sub-pillar: Governments	20	67.72	3rd sub-pillar: SDG Contribution	23	92.80

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	28	79.58	3.1.1 Rule of law	30	75.43
1.1.2 Handset prices	31	64.23	3.1.2 Software piracy rate	31	63.51
1.1.3 Internet access	30	85.49	3.1.3 Secure Internet servers	37	79.64
1.1.4 4G mobile network coverage	42	97.80	3.1.4 Cybersecurity	7	96.16
1.1.5 Fixed-broadband subscriptions	14	96.04	3.1.5 Online trust and safety	45	66.06
1.1.6 International Internet bandwidth	83	63.78	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	33	72.23
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	29	84.38
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	47	47.40
1.2.2 Mobile apps development	25	82.03	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	27	2.95	3.2.5 Social safety net protection	15	84.78
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	50	86.88
1.3.1 Availability of latest technologies	35	69.69	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	55	38.19	3.3.1 E-Participation	5	98.08
1.3.3 Government procurement of advanced technology products	74	35.23	3.3.2 Socioeconomic gap in use of digital payments	9	97.21
1.3.4 ICT PCT patent applications	27	31.52	3.3.3 Availability of local online content	29	75.35
1.3.5 Computer software spending	4	63.64	3.3.4 Gender gap in internet use	31	64.70
1.3.6 Robot density	15	49.72	3.3.5 Rural gap in use of digital payments	14	77.36
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	26	84.92	4.1.1 Medium and high-tech industry	30	50.84
2.1.2 Active mobile-broadband subscriptions	30	37.90	4.1.2 High-tech exports	62	13.62
2.1.3 Use of virtual social networks	48	59.46	4.1.3 PCT patent applications	26	10.75
2.1.4 Tertiary enrolment	5	64.83	4.1.4 Labour productivity per employee	25	53.87
2.1.5 Adult literacy rate	24	97.62	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	11	82.30	4.2.1 Happiness	28	71.99
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	99	44.84
2.2.1 Firms with website	27	73.91	4.2.3 Income inequality	56	70.53
2.2.2 Internet shopping	18	69.47	4.2.4 Healthy life expectancy at birth	3	91.21
2.2.3 Professionals	32	46.05	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	44	48.72	4.3.1 Access to basic services	12	99.89
2.2.5 Extent of staff training	64	37.04	4.3.2 Pollution	13	95.77
2.2.6 R&D expenditure by businesses	32	16.83	4.3.3 Road safety	8	95.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	14	97.32
2.3.1 Government online services	16	93.08	4.3.5 Maths proficiency in schools	27	68.20
2.3.2 Publication and use of open data	12	73.36	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	40	55.51			
2.3.4 R&D expenditure by governments and higher education	31	48.91			

* Confidential data

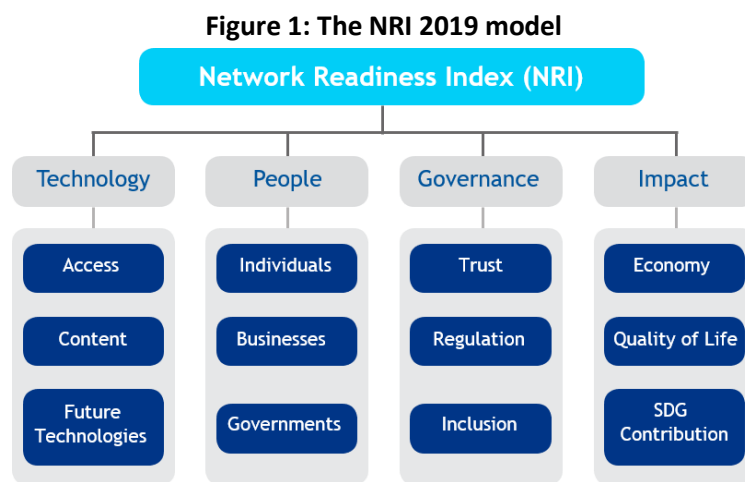
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Network Readiness Index 2019

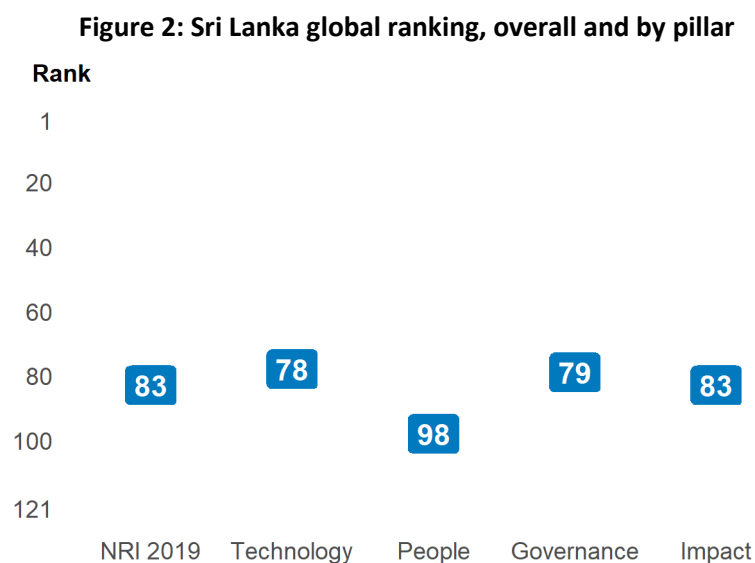
Sri Lanka

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Sri Lanka

Sri Lanka ranks 83rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Sri Lanka relate to Inclusion, Future Technologies and SDG Contribution, among others (Table 1). More could be done, though, to improve the economy's performances in the Regulation, Economy and Businesses sub-pillars.

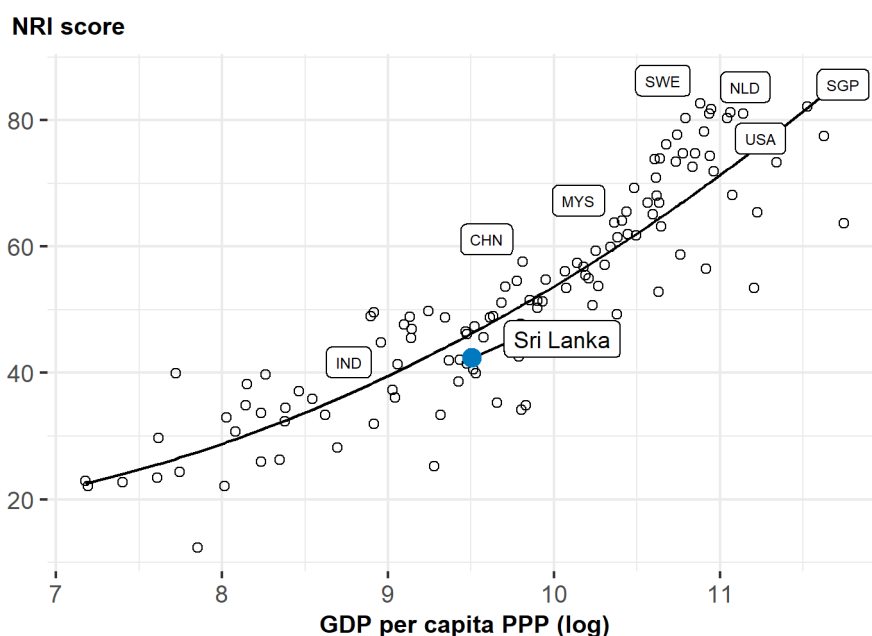
Table 1: Sri Lanka rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Inclusion	62	Access	81
Future Technologies	64	Governments	92
SDG Contribution	65	Individuals	96
Content	71	Regulation	97
Trust	78	Economy	105
Quality of Life	79	Businesses	110

NRI score and income

Figure 3 shows the position of Sri Lanka 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, Sri Lanka 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Sri Lanka belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Upper-middle-income countries

Sri Lanka is ranked 29th in the group of upper-middle-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 outperforms upper-middle-income countries in three of the twelve sub-pillars: Future Technology, Inclusion and Quality of Life.

Asia & Pacific

Sri Lanka is ranked 15th within Asia & Pacific (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 Asia & Pacific in one of the twelve sub-pillars: SDG Contribution.

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



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

Dimension	Sri Lanka	Upper-middle-income countries	Asia & Pacific
NRI	42.42	47.40	52.44
Technology	40.46	42.66	48.56
People	28.36	41.07	44.85
Governance	54.66	56.24	61.84
Impact	46.19	49.62	54.50

Strongest and weakest indicators

The indicators where Sri Lanka performs particularly well include Maths proficiency in schools, Mobile tariffs, and Online trust and safety (Table 3). By contrast, the economy's weakest indicators include Firms with website, ICT regulatory environment, High-tech exports, and Happiness.

Table 3: Top-ranked and bottom-ranked indicators of Sri Lanka

Strongest indicators	Rank	Weakest indicators	Rank
Maths proficiency in schools	8	Internet access	99
Mobile tariffs	21	R&D expenditure by governments and higher education	99
Online trust and safety	23	Internet users	100
Reading proficiency in schools	26	Medium and high-tech industry	102
Computer software spending	30	Internet shopping	103
Socioeconomic gap in use of digital payments	32	Use of clean fuels and technology	103
Pollution	40	ICT regulatory environment	107
Freedom to make life choices	51	High-tech exports	107
Healthy life expectancy at birth	53	Happiness	107
ICT PCT patent applications	56	Firms with website	111

NRI 2019 At-A-Glance: Sri Lanka

Network Readiness Index

Rank: 83 (out of 121)

Score: 42.42

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	78	40.46	C. Governance pillar	79	54.66
1st sub-pillar: Access	81	52.59	1st sub-pillar: Trust	78	49.42
2nd sub-pillar: Content	71	38.94	2nd sub-pillar: Regulation	97	52.01
3rd sub-pillar: Future Technologies	64	29.85	3rd sub-pillar: Inclusion	62	62.55
B. People pillar	98	28.36	D. Impact pillar	83	46.19
1st sub-pillar: Individuals	96	35.66	1st sub-pillar: Economy	105	7.94
2nd sub-pillar: Businesses	110	14.52	2nd sub-pillar: Quality of Life	79	57.41
3rd sub-pillar: Governments	92	34.90	3rd sub-pillar: SDG Contribution	65	73.22

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	21	83.17	3.1.1 Rule of law	58	53.93
1.1.2 Handset prices	84	36.79	3.1.2 Software piracy rate	81	16.22
1.1.3 Internet access	99	19.30	3.1.3 Secure Internet servers	69	51.37
1.1.4 4G mobile network coverage	63	91.00	3.1.4 Cybersecurity	82	49.01
1.1.5 Fixed-broadband subscriptions	87	22.40	3.1.5 Online trust and safety	23	76.56
1.1.6 International Internet bandwidth	90	62.87	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	81	48.06
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	87	55.85
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	82	35.64
1.2.2 Mobile apps development	85	48.73	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	72	38.06
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	107	59.46
1.3.1 Availability of latest technologies	83	41.95	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	69	33.14	3.3.1 E-Participation	81	57.96
1.3.3 Government procurement of advanced technology products	62	40.97	3.3.2 Socioeconomic gap in use of digital payments	32	83.98
1.3.4 ICT PCT patent applications	56	5.93	3.3.3 Availability of local online content	79	42.15
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	65	66.10
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	100	27.06	4.1.1 Medium and high-tech industry	102	9.39
2.1.2 Active mobile-broadband subscriptions	85	21.63	4.1.2 High-tech exports	107	1.93
2.1.3 Use of virtual social networks	97	28.27	4.1.3 PCT patent applications	70	0.28
2.1.4 Tertiary enrolment	92	13.85	4.1.4 Labour productivity per employee	68	20.16
2.1.5 Adult literacy rate	60	87.48	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	107	27.97
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	51	75.03
2.2.1 Firms with website	111	0.00	4.2.3 Income inequality	73	61.05
2.2.2 Internet shopping	103	3.45	4.2.4 Healthy life expectancy at birth	53	65.57
2.2.3 Professionals	87	16.08	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	74	28.90	4.3.1 Access to basic services	72	90.24
2.2.5 Extent of staff training	62	37.77	4.3.2 Pollution	40	89.26
2.2.6 R&D expenditure by businesses	73	0.92	4.3.3 Road safety	63	61.88
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	26	86.56
2.3.1 Government online services	74	63.08	4.3.5 Maths proficiency in schools	8	85.86
2.3.2 Publication and use of open data	NA	NA	4.3.6 Use of clean fuels and technology	103	25.56
2.3.3 ICT use and government efficiency	82	36.32			
2.3.4 R&D expenditure by governments and higher education	99	5.30			

* Confidential data

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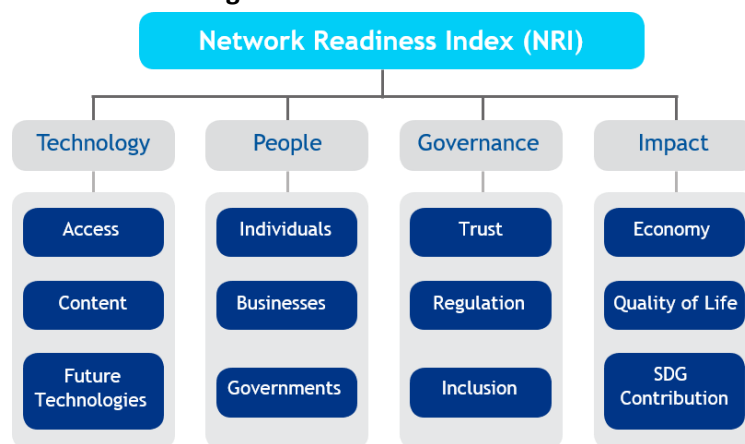
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Network Readiness Index 2019

Sweden

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

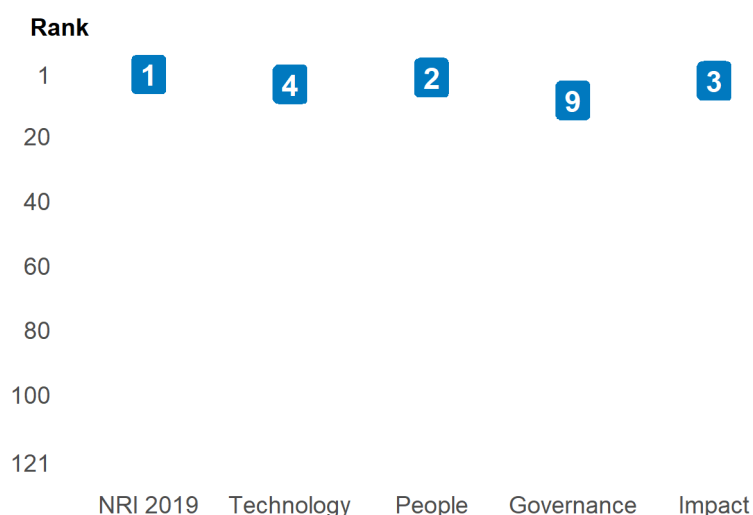
Figure 1: The NRI 2019 model



Global NRI position of Sweden

Sweden ranks 1st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Sweden global ranking, overall and by pillar



Performance at sub-pillar level

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

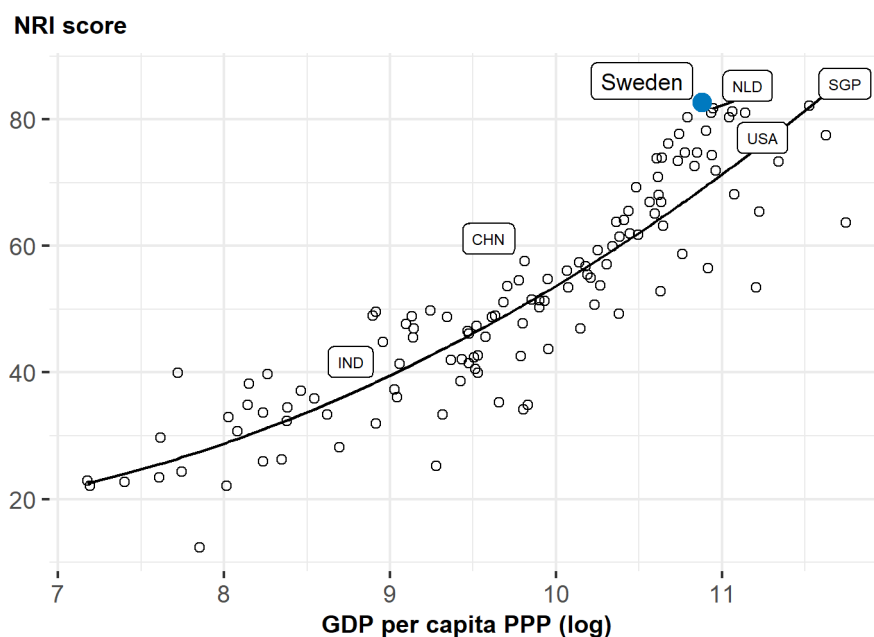
Table 1: Sweden rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	1	Quality of Life	6
Future Technologies	3	Inclusion	7
Governments	4	Trust	12
Content	5	SDG Contribution	12
Economy	5	Access	14
Regulation	6	Individuals	14

NRI score and income

Figure 3 shows the position of Sweden 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, Sweden 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: SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Sweden, clearly, is the best performer of both its income group (high-income countries) and region (Europe).

Performance against its income group and region

High-income countries

Sweden is ranked 1st 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 each of the four pillars. At the sub-pillar level, it has a higher score than the average of high-income countries in all of them.

Europe

Sweden is ranked 1st within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

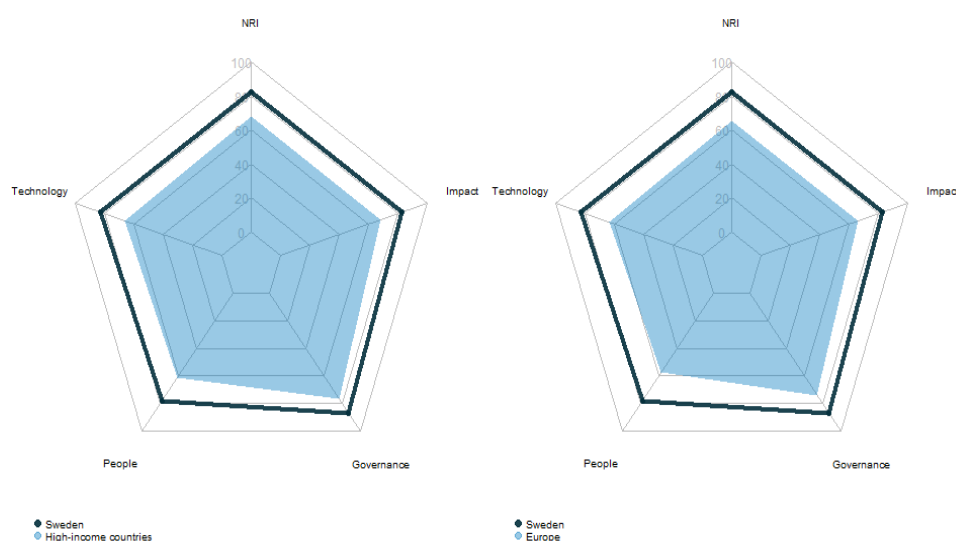


Table 2: Sweden scores vs. averages of its income group and region, overall and by pillar

Dimension	Sweden	High-income countries	Europe
NRI	82.65	68.12	65.20
Technology	82.28	66.07	63.08
People	78.17	61.07	57.50
Governance	87.43	77.07	73.99
Impact	82.73	68.29	66.24

Strongest and weakest indicators

The indicators where Sweden performs particularly well include 4G mobile network coverage, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include International Internet bandwidth, Online trust and safety, and Tertiary enrolment.

Table 3: Top-ranked and bottom-ranked indicators of Sweden

Strongest indicators	Rank	Weakest indicators	Rank
4G mobile network coverage	1	Maths proficiency in schools	19
E-commerce legislation	1	Secure Internet servers	23
Use of clean fuels and technology	1	Rural gap in use of digital payments	23
ICT PCT patent applications	2	Fixed-broadband subscriptions	30
Professionals	2	High-tech exports	30
PCT patent applications	2	ICT regulatory environment	32
Company investment in emerging technology	3	Cybersecurity	34
R&D expenditure by governments and higher education	3	Tertiary enrolment	35
Pollution	3	Online trust and safety	45
Road safety	3	International Internet bandwidth	54

NRI 2019 At-A-Glance: Sweden

Network Readiness Index

Rank: 1 (out of 121)

Score: 82.65

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	4	82.28	C. Governance pillar	9	87.43
1st sub-pillar: Access	14	86.53	1st sub-pillar: Trust	12	85.57
2nd sub-pillar: Content	5	81.53	2nd sub-pillar: Regulation	6	90.57
3rd sub-pillar: Future Technologies	3	78.77	3rd sub-pillar: Inclusion	7	86.14
B. People pillar	2	78.17	D. Impact pillar	3	82.73
1st sub-pillar: Individuals	14	69.35	1st sub-pillar: Economy	5	62.37
2nd sub-pillar: Businesses	1	81.14	2nd sub-pillar: Quality of Life	6	90.16
3rd sub-pillar: Governments	4	84.02	3rd sub-pillar: SDG Contribution	12	95.65

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	8	92.50	3.1.1 Rule of law	4	96.57
1.1.2 Handset prices	15	70.48	3.1.2 Software piracy rate	6	94.59
1.1.3 Internet access	11	94.38	3.1.3 Secure Internet servers	23	83.87
1.1.4 4G mobile network coverage	1	100.00	3.1.4 Cybersecurity	34	86.73
1.1.5 Fixed-broadband subscriptions	30	92.12	3.1.5 Online trust and safety	45	66.06
1.1.6 International Internet bandwidth	54	69.71	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	6	91.06
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	10	91.56
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	6	85.14
1.2.2 Mobile apps development	13	87.49	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	7	27.29	3.2.5 Social safety net protection	14	85.34
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	32	90.35
1.3.1 Availability of latest technologies	5	96.45	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	3	91.30	3.3.1 E-Participation	19	92.99
1.3.3 Government procurement of advanced technology products	16	65.09	3.3.2 Socioeconomic gap in use of digital payments	7	97.28
1.3.4 ICT PCT patent applications	2	92.33	3.3.3 Availability of local online content	5	91.96
1.3.5 Computer software spending	8	54.55	3.3.4 Gender gap in internet use	4	72.47
1.3.6 Robot density	5	72.93	3.3.5 Rural gap in use of digital payments	23	75.98
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	13	91.64	4.1.1 Medium and high-tech industry	10	67.74
2.1.2 Active mobile-broadband subscriptions	17	47.96	4.1.2 High-tech exports	30	27.18
2.1.3 Use of virtual social networks	18	71.93	4.1.3 PCT patent applications	2	92.95
2.1.4 Tertiary enrolment	35	48.73	4.1.4 Labour productivity per employee	13	61.60
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	9	86.49	4.2.1 Happiness	8	89.93
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	9	95.67
2.2.1 Firms with website	4	95.85	4.2.3 Income inequality	17	88.95
2.2.2 Internet shopping	6	91.90	4.2.4 Healthy life expectancy at birth	16	86.08
2.2.3 Professionals	2	75.32	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	9	81.09	4.3.1 Access to basic services	19	99.54
2.2.5 Extent of staff training	7	83.35	4.3.2 Pollution	3	99.82
2.2.6 R&D expenditure by businesses	5	59.34	4.3.3 Road safety	3	99.69
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	6	98.86
2.3.1 Government online services	14	93.84	4.3.5 Maths proficiency in schools	19	76.02
2.3.2 Publication and use of open data	15	69.84	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	5	83.35			
2.3.4 R&D expenditure by governments and higher education	3	89.05			

* Confidential data

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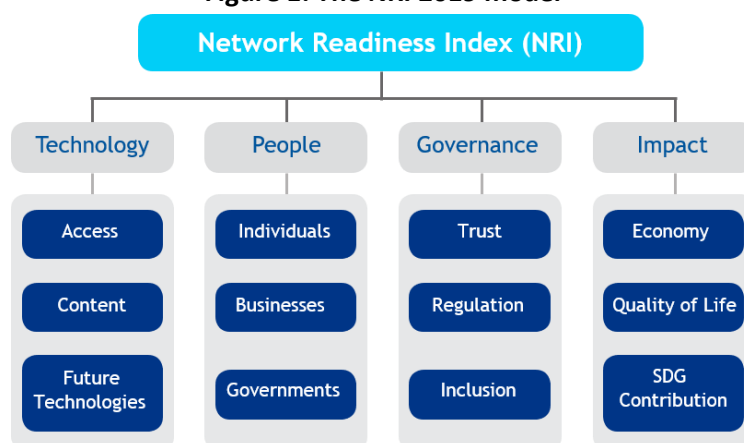
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Network Readiness Index 2019

Switzerland

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

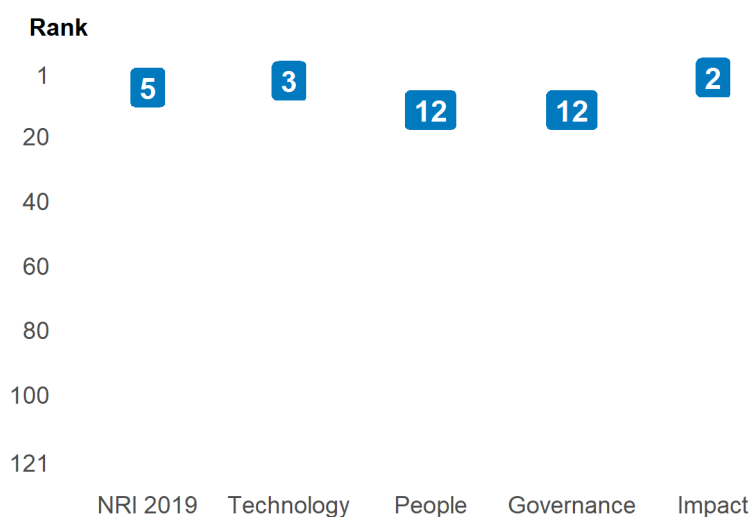
Figure 1: The NRI 2019 model



Global NRI position of Switzerland

Switzerland ranks 5th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People and Governance.

Figure 2: Switzerland global ranking, overall and by pillar



Performance at sub-pillar level

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

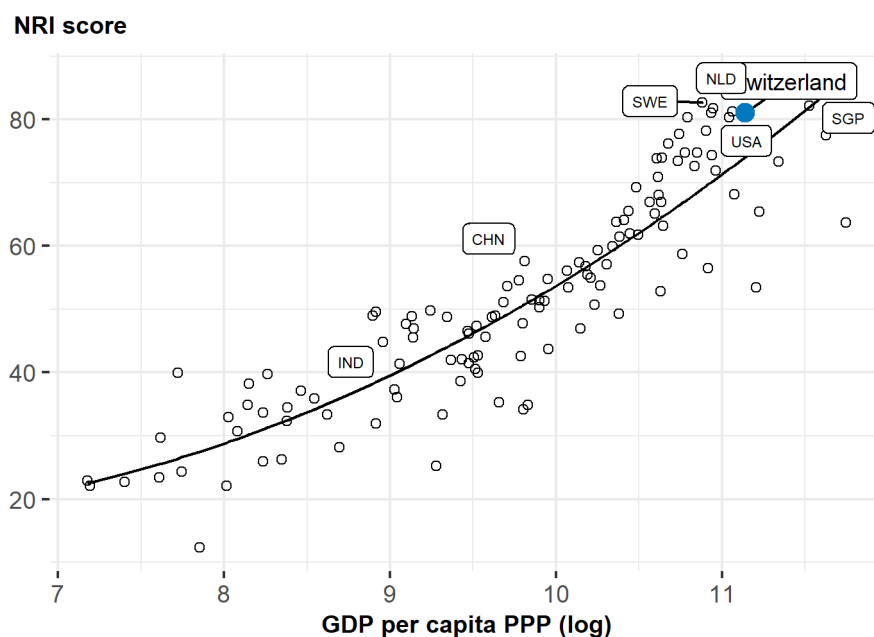
Table 1: Switzerland rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	2	Trust	8
Content	3	Quality of Life	8
Businesses	3	Regulation	11
Economy	3	Governments	17
Access	4	Inclusion	18
Future Technologies	7	Individuals	44

NRI score and income

Figure 3 shows the position of Switzerland 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, Switzerland 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Switzerland belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

Switzerland is ranked 5th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Switzerland is ranked 4th 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 eleven of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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

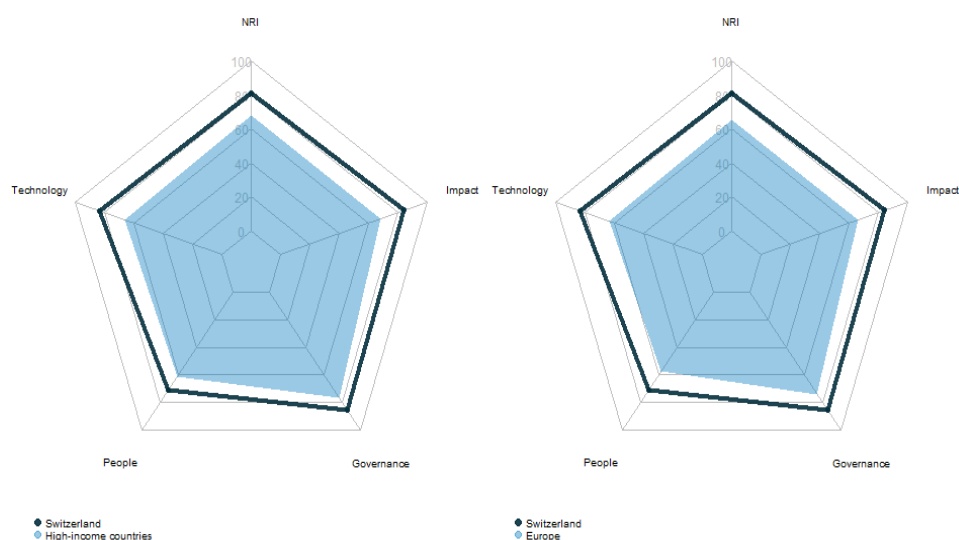


Table 2: Switzerland scores vs. averages of its income group and region, overall and by pillar

Dimension	Switzerland	High-income countries	Europe
NRI	81.08	68.12	65.20
Technology	83.47	66.07	63.08
People	71.06	61.07	57.50
Governance	85.81	77.07	73.99
Impact	83.99	68.29	66.24

Strongest and weakest indicators

The indicators where Switzerland performs particularly well include Internet access in schools, Extent of staff training, and E-commerce legislation (Table 3). By contrast, the economy's weakest indicators include Use of virtual social networks, Tertiary enrolment, International Internet bandwidth, and Online trust and safety.

Table 3: Top-ranked and bottom-ranked indicators of Switzerland

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	High-tech exports	34
Extent of staff training	1	Government online services	35
E-commerce legislation	1	Ease of doing business	35
Road safety	1	Cybersecurity	39
Use of clean fuels and technology	1	Gender gap in internet use	39
Computer software spending	2	E-Participation	41
Medium and high-tech industry	2	International Internet bandwidth	42
Intellectual property receipts	3	Online trust and safety	42
Availability of latest technologies	3	Tertiary enrolment	48
Rule of law	3	Use of virtual social networks	69

NRI 2019 At-A-Glance: Switzerland

Network Readiness Index

Rank: 5 (out of 121)

Score: 81.08

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	3	83.47	C. Governance pillar	12	85.81
1st sub-pillar: Access	4	90.24	1st sub-pillar: Trust	8	87.13
2nd sub-pillar: Content	3	89.69	2nd sub-pillar: Regulation	11	88.90
3rd sub-pillar: Future Technologies	7	70.48	3rd sub-pillar: Inclusion	18	81.42
B. People pillar	12	71.06	D. Impact pillar	2	83.99
1st sub-pillar: Individuals	44	60.22	1st sub-pillar: Economy	3	64.31
2nd sub-pillar: Businesses	3	79.52	2nd sub-pillar: Quality of Life	8	88.94
3rd sub-pillar: Governments	17	73.43	3rd sub-pillar: SDG Contribution	2	98.72

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	6	93.92	3.1.1 Rule of law	3	97.38
1.1.2 Handset prices	5	82.77	3.1.2 Software piracy rate	10	91.89
1.1.3 Internet access	22	87.81	3.1.3 Secure Internet servers	5	94.96
1.1.4 4G mobile network coverage	24	99.00	3.1.4 Cybersecurity	39	84.32
1.1.5 Fixed-broadband subscriptions	11	97.05	3.1.5 Online trust and safety	42	67.12
1.1.6 International Internet bandwidth	42	71.11	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	8	90.63
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	35	82.05
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	21	69.73
1.2.2 Mobile apps development	9	89.72	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	3	71.11	3.2.5 Social safety net protection	8	95.40
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	15	95.56
1.3.1 Availability of latest technologies	3	97.52	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	4	88.54	3.3.1 E-Participation	41	82.17
1.3.3 Government procurement of advanced technology products	32	51.54	3.3.2 Socioeconomic gap in use of digital payments	15	95.67
1.3.4 ICT PCT patent applications	9	69.25	3.3.3 Availability of local online content	6	91.59
1.3.5 Computer software spending	2	72.73	3.3.4 Gender gap in internet use	39	62.12
1.3.6 Robot density	18	43.32	3.3.5 Rural gap in use of digital payments	27	75.53
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	17	88.91	4.1.1 Medium and high-tech industry	2	82.59
2.1.2 Active mobile-broadband subscriptions	31	37.80	4.1.2 High-tech exports	34	25.34
2.1.3 Use of virtual social networks	69	50.10	4.1.3 PCT patent applications	3	87.04
2.1.4 Tertiary enrolment	48	43.26	4.1.4 Labour productivity per employee	12	62.27
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	12	81.05	4.2.1 Happiness	3	92.72
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	14	92.12
2.2.1 Firms with website	5	94.95	4.2.3 Income inequality	29	80.79
2.2.2 Internet shopping	15	71.84	4.2.4 Healthy life expectancy at birth	4	90.11
2.2.3 Professionals	8	66.19	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	8	83.33	4.3.1 Access to basic services	10	99.93
2.2.5 Extent of staff training	1	100.00	4.3.2 Pollution	16	94.94
2.2.6 R&D expenditure by businesses	4	60.80	4.3.3 Road safety	1	100.00
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	35	83.07	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	19	57.46	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	22	68.26			
2.3.4 R&D expenditure by governments and higher education	6	84.92			

* Confidential data

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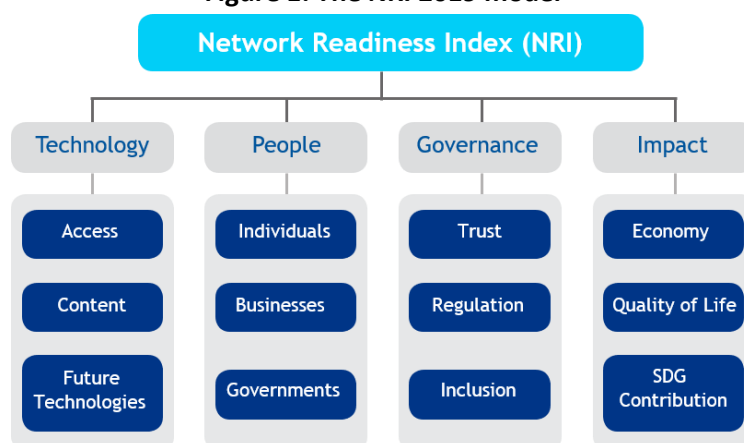
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Network Readiness Index 2019

Tajikistan

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

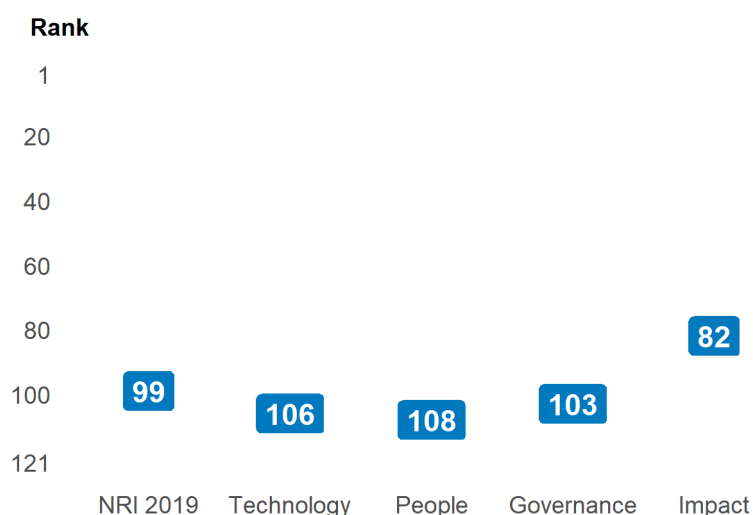
Figure 1: The NRI 2019 model



Global NRI position of Tajikistan

Tajikistan ranks 99th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Tajikistan global ranking, overall and by pillar



Performance at sub-pillar level

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

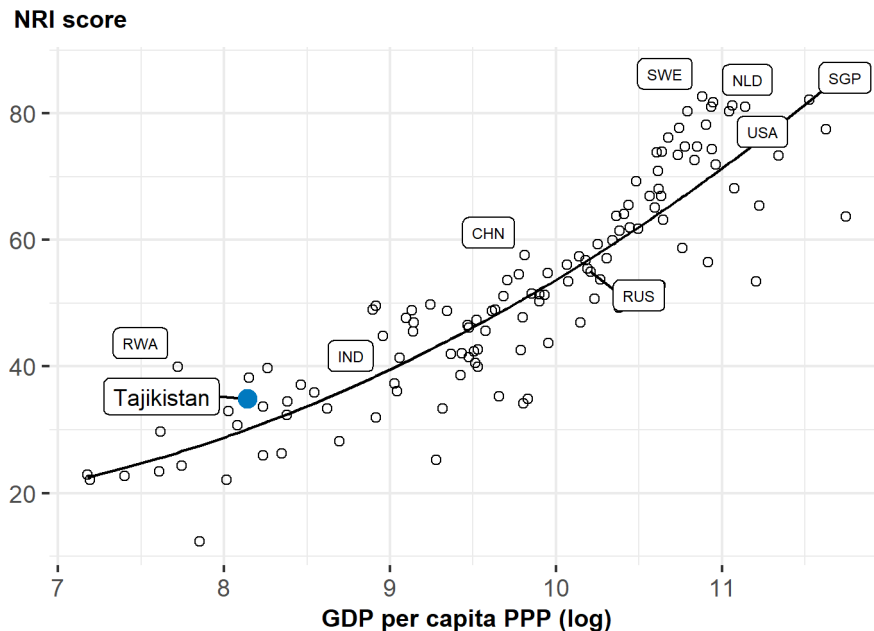
Table 1: Tajikistan rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	47	Access	103
Quality of Life	54	Governments	109
SDG Contribution	73	Regulation	109
Inclusion	76	Content	114
Businesses	96	Trust	116
Individuals	102	Economy	116

NRI score and income

Figure 3 shows the position of Tajikistan 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, Tajikistan 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Tajikistan belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—CIS—is Russia (RUS).

Performance against its income group and region

Low-income countries

Tajikistan is ranked 2nd in the group of low-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 low-income countries in eight of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Inclusion, Quality of Life and SDG Contribution.

CIS

Tajikistan is ranked 7th within CIS (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 CIS in two of the twelve sub-pillars: Future Technology and Quality of Life.

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

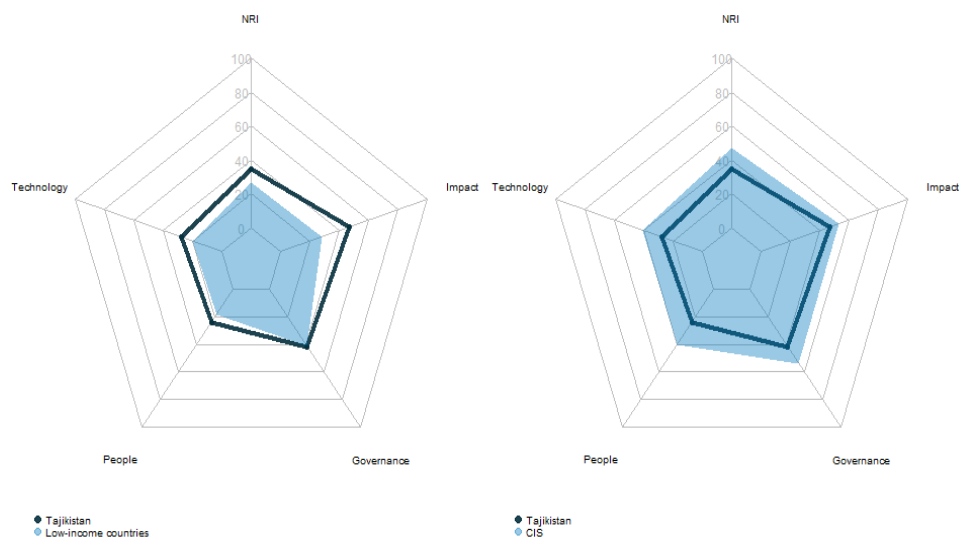


Table 2: Tajikistan scores vs. averages of its income group and region, overall and by pillar

Dimension	Tajikistan	Low-income countries	CIS
NRI	34.90	26.91	46.89
Technology	27.40	20.09	40.39
People	23.77	18.24	40.30
Governance	41.72	41.33	53.69
Impact	46.72	27.97	53.16

Strongest and weakest indicators

The indicators where Tajikistan performs particularly well include Adult literacy rate, Government procurement of advanced technology products, and Rural gap in use of digital payments (Table 3). By contrast, the economy's weakest indicators include Use of virtual social networks, ICT regulatory environment, and Rule of law.

Table 3: Top-ranked and bottom-ranked indicators of Tajikistan

Strongest indicators	Rank	Weakest indicators	Rank
Adult literacy rate	5	Handset prices	113
Government procurement of advanced technology products	25	Internet access	113
Rural gap in use of digital payments	43	Active mobile-broadband subscriptions	114
Income inequality	43	Medium and high-tech industry	115
Social safety net protection	55	Digital participation and content creation	116
Company investment in emerging technology	57	Regulatory quality	116
Freedom to make life choices	57	International Internet bandwidth	118
Happiness	61	Rule of law	119
Socioeconomic gap in use of digital payments	63	Use of virtual social networks	120
E-commerce legislation	66	ICT regulatory environment	120

NRI 2019 At-A-Glance: Tajikistan

Network Readiness Index

Rank: 99 (out of 121)

Score: 34.90

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	106	27.40	C. Governance pillar	103	41.72
1st sub-pillar: Access	103	34.65	1st sub-pillar: Trust	116	26.31
2nd sub-pillar: Content	114	11.45	2nd sub-pillar: Regulation	109	41.60
3rd sub-pillar: Future Technologies	47	36.11	3rd sub-pillar: Inclusion	76	57.24
B. People pillar	108	23.77	D. Impact pillar	82	46.72
1st sub-pillar: Individuals	102	28.93	1st sub-pillar: Economy	116	4.35
2nd sub-pillar: Businesses	96	20.48	2nd sub-pillar: Quality of Life	54	64.45
3rd sub-pillar: Governments	109	21.89	3rd sub-pillar: SDG Contribution	73	71.36

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	113	25.50	3.1.1 Rule of law	119	24.08
1.1.2 Handset prices	113	16.67	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	113	5.95	3.1.3 Secure Internet servers	109	28.09
1.1.4 4G mobile network coverage	79	80.00	3.1.4 Cybersecurity	101	26.75
1.1.5 Fixed-broadband subscriptions	NA	NA	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	118	45.13	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	116	28.32
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	91	54.90
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	NA	NA
1.2.2 Mobile apps development	106	32.40	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	98	0.00	3.2.5 Social safety net protection	55	46.33
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	120	3.48
1.3.1 Availability of latest technologies	85	41.51	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	57	36.96	3.3.1 E-Participation	108	30.57
1.3.3 Government procurement of advanced technology products	25	56.87	3.3.2 Socioeconomic gap in use of digital payments	63	68.11
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	NA	NA
1.3.5 Computer software spending	77	9.09	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	43	73.04
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	111	13.53	4.1.1 Medium and high-tech industry	115	2.48
2.1.2 Active mobile-broadband subscriptions	114	6.90	4.1.2 High-tech exports	NA	NA
2.1.3 Use of virtual social networks	120	2.08	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	80	22.41	4.1.4 Labour productivity per employee	94	6.22
2.1.5 Adult literacy rate	5	99.73	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	61	57.74
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	57	70.26
2.2.1 Firms with website	87	24.14	4.2.3 Income inequality	43	76.32
2.2.2 Internet shopping	74	9.65	4.2.4 Healthy life expectancy at birth	86	53.48
2.2.3 Professionals	80	18.18	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	82	24.53	4.3.1 Access to basic services	85	85.64
2.2.5 Extent of staff training	103	25.90	4.3.2 Pollution	103	61.27
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	80	51.88
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	110	26.93	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	89	9.70	4.3.6 Use of clean fuels and technology	77	86.67
2.3.3 ICT use and government efficiency	67	41.58			
2.3.4 R&D expenditure by governments and higher education	90	9.37			

* Confidential data

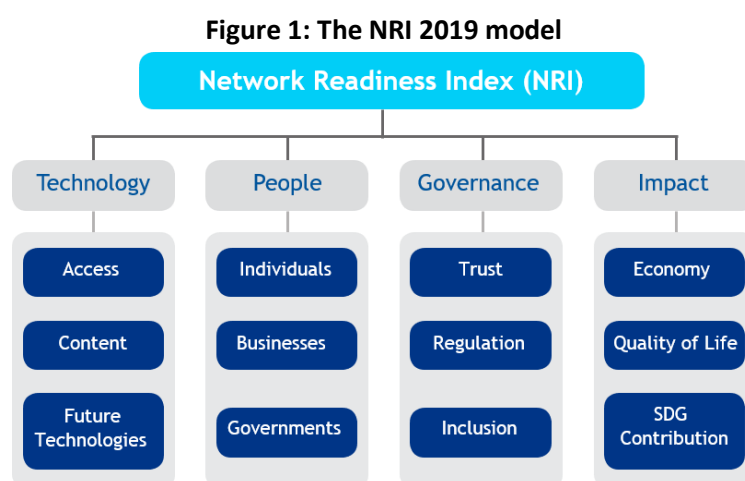
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Network Readiness Index 2019

Tanzania

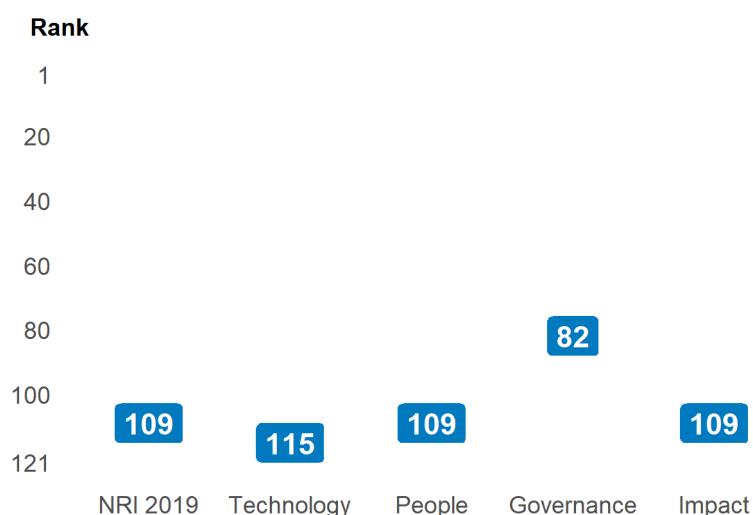
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Tanzania

Tanzania ranks 109th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Tanzania global ranking, overall and by pillar



Performance at sub-pillar level

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

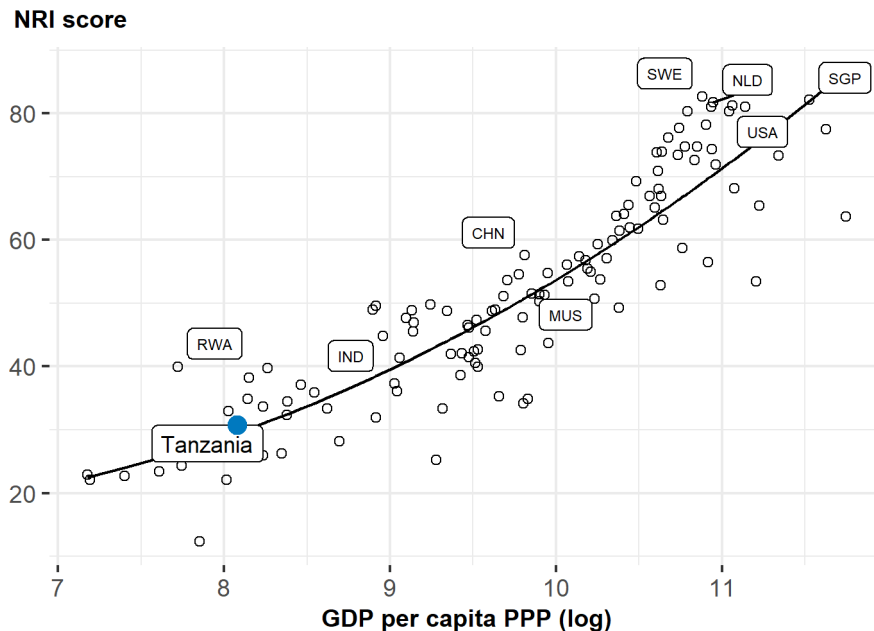
Table 1: Tanzania rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Trust	66	Economy	104
Future Technologies	75	SDG Contribution	111
Inclusion	75	Individuals	113
Governments	76	Content	115
Regulation	102	Businesses	115
Quality of Life	103	Access	118

NRI score and income

Figure 3 shows the position of Tanzania 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, Tanzania 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Tanzania belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Low-income countries

Tanzania is ranked 4th in the group of low-income countries (Figure 4, left panel). In terms of pillar performance, it has a score higher than the income group average in three of the four pillars: Score, People, Governance and Impact. At the sub-pillar level, it outperforms low-income countries in eight of the twelve sub-pillars: Future Technology, Individuals, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

Africa

Tanzania is ranked 9th within Africa (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Governance. With regard to sub-pillars, it outperforms the average in Africa in four of the twelve sub-pillars: Governments, Trust, Inclusion and Quality of Life.

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

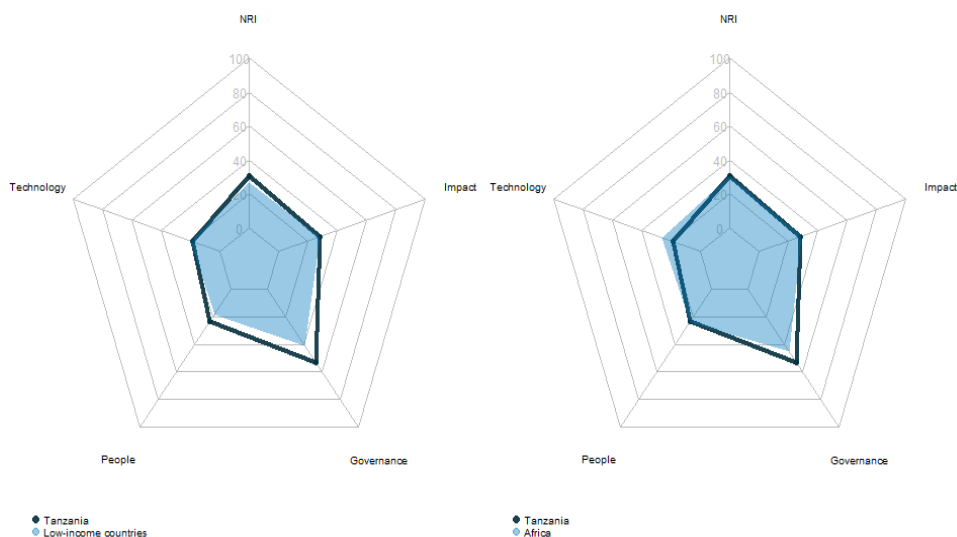


Table 2: Tanzania scores vs. averages of its income group and region, overall and by pillar

Dimension	Tanzania	Low-income countries	Africa
NRI	30.73	26.91	31.07
Technology	18.49	20.09	26.03
People	23.12	18.24	23.76
Governance	53.06	41.33	45.32
Impact	28.26	27.97	29.15

Strongest and weakest indicators

The indicators where Tanzania performs particularly well include Online trust and safety, R&D expenditure by governments and higher education, and Government procurement of advanced technology products (Table 3). By contrast, the economy's weakest indicators include International Internet bandwidth, Active mobile-broadband subscriptions, and Happiness.

Table 3: Top-ranked and bottom-ranked indicators of Tanzania

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	12	Internet access	112
R&D expenditure by governments and higher education	33	Use of virtual social networks	112
Government procurement of advanced technology products	46	Mobile apps development	113
Reading proficiency in schools	52	Tertiary enrolment	114
Maths proficiency in schools	53	Professionals	116
Rural gap in use of digital payments	55	Access to basic services	116
Company investment in emerging technology	58	4G mobile network coverage	117
Social safety net protection	60	Happiness	119
ICT regulatory environment	60	Active mobile-broadband subscriptions	120
Cybersecurity	62	International Internet bandwidth	121

NRI 2019 At-A-Glance: Tanzania

Network Readiness Index

Rank: 109 (out of 121)

Score: 30.73

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	115	18.49	C. Governance pillar	82	53.06
1st sub-pillar: Access	118	16.77	1st sub-pillar: Trust	66	54.85
2nd sub-pillar: Content	115	10.90	2nd sub-pillar: Regulation	102	46.51
3rd sub-pillar: Future Technologies	75	27.80	3rd sub-pillar: Inclusion	75	57.80
B. People pillar	109	23.12	D. Impact pillar	109	28.26
1st sub-pillar: Individuals	113	18.38	1st sub-pillar: Economy	104	8.06
2nd sub-pillar: Businesses	115	10.17	2nd sub-pillar: Quality of Life	103	41.68
3rd sub-pillar: Governments	76	40.80	3rd sub-pillar: SDG Contribution	111	35.04

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	104	36.07	3.1.1 Rule of law	95	40.68
1.1.2 Handset prices	102	26.12	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	112	8.67	3.1.3 Secure Internet servers	110	28.07
1.1.4 4G mobile network coverage	117	13.00	3.1.4 Cybersecurity	62	68.31
1.1.5 Fixed-broadband subscriptions	NA	NA	3.1.5 Online trust and safety	12	82.34
1.1.6 International Internet bandwidth	121	0.00	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	102	37.92
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	109	42.86
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	63	42.91
1.2.2 Mobile apps development	113	23.50	3.2.4 E-commerce legislation	110	25.00
1.2.3 Intellectual property receipts	90	0.01	3.2.5 Social safety net protection	60	44.69
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	60	85.72
1.3.1 Availability of latest technologies	108	28.58	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	58	36.70	3.3.1 E-Participation	86	56.69
1.3.3 Government procurement of advanced technology products	46	45.93	3.3.2 Socioeconomic gap in use of digital payments	64	67.56
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	86	37.27
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	55	69.69
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	107	16.92	4.1.1 Medium and high-tech industry	105	8.44
2.1.2 Active mobile-broadband subscriptions	120	1.27	4.1.2 High-tech exports	65	13.05
2.1.3 Use of virtual social networks	112	5.61	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	114	2.35	4.1.4 Labour productivity per employee	101	2.68
2.1.5 Adult literacy rate	79	65.76	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	119	8.07
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	71	64.50
2.2.1 Firms with website	104	5.19	4.2.3 Income inequality	63	66.32
2.2.2 Internet shopping	83	6.82	4.2.4 Healthy life expectancy at birth	107	27.84
2.2.3 Professionals	116	0.00	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	106	8.17	4.3.1 Access to basic services	116	25.20
2.2.5 Extent of staff training	87	30.65	4.3.2 Pollution	84	77.59
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	111	17.19
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	52	55.99
2.3.1 Government online services	93	51.54	4.3.5 Maths proficiency in schools	53	34.28
2.3.2 Publication and use of open data	65	21.73	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	64	42.19			
2.3.4 R&D expenditure by governments and higher education	33	47.75			

* Confidential data

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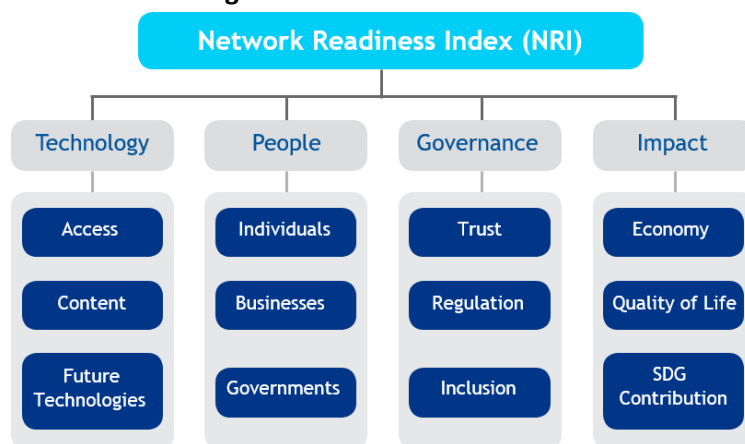
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Network Readiness Index 2019

Thailand

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

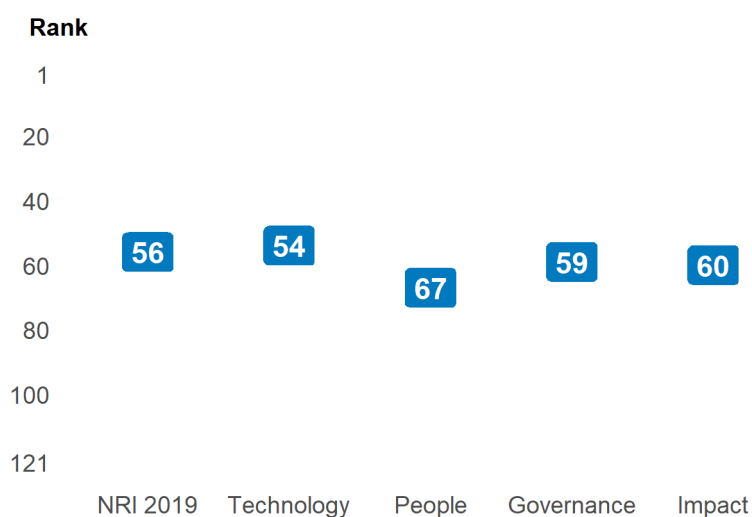
Figure 1: The NRI 2019 model



Global NRI position of Thailand

Thailand ranks 56th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Thailand global ranking, overall and by pillar



Performance at sub-pillar level

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

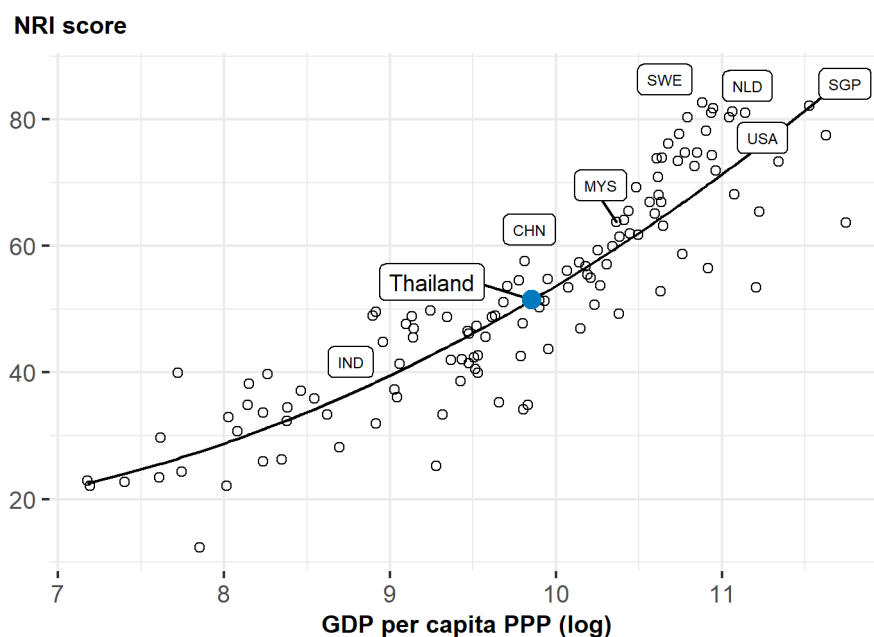
Table 1: Thailand rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Quality of Life	35	Future Technologies	60
Access	39	Trust	67
Economy	40	Content	69
Individuals	49	Businesses	78
Inclusion	56	Governments	79
Regulation	58	SDG Contribution	87

NRI score and income

Figure 3 shows the position of Thailand 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, Thailand 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Thailand belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Upper-middle-income countries

Thailand is ranked 10th 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 eight of the twelve sub-pillars: Access, Future Technology, Individuals, Trust, Regulation, Inclusion, Economy and Quality of Life.

Asia & Pacific

Thailand is ranked 9th within Asia & Pacific (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Technology. With regard to sub-pillars, it outperforms the average in Asia & Pacific in five of the twelve sub-pillars: Access, Individuals, Regulation, Inclusion and Quality of Life.

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

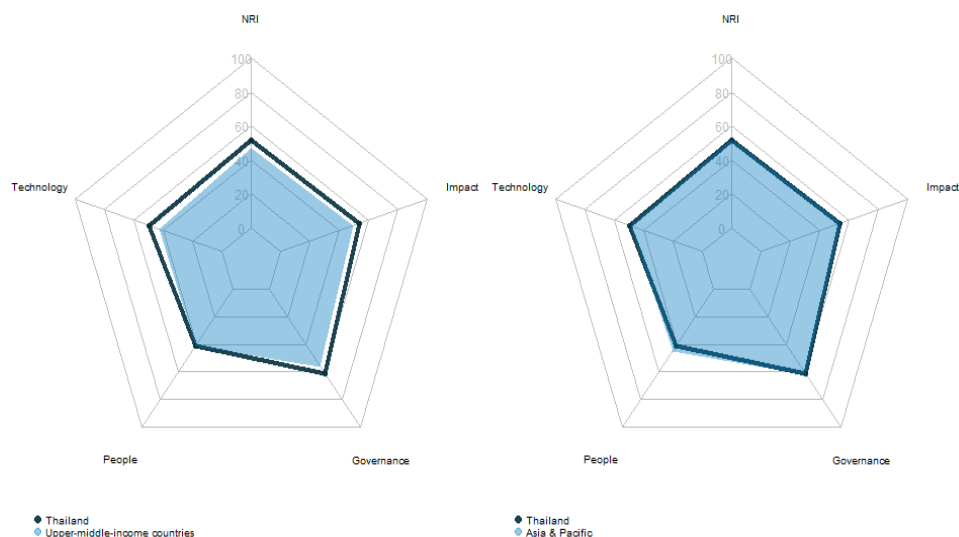


Table 2: Thailand scores vs. averages of its income group and region, overall and by pillar

Dimension	Thailand	Upper-middle-income countries	Asia & Pacific
NRI	51.54	47.40	52.44
Technology	49.61	42.66	48.56
People	41.16	41.07	44.85
Governance	61.61	56.24	61.84
Impact	53.80	49.62	54.50

Strongest and weakest indicators

The indicators where Thailand performs particularly well include Fixed-broadband subscriptions, High-tech exports, and Use of virtual social networks (Table 3). By contrast, the economy's weakest indicators include Road safety, Professionals, and Technicians and associate professionals.

Table 3: Top-ranked and bottom-ranked indicators of Thailand

Strongest indicators	Rank	Weakest indicators	Rank
Fixed-broadband subscriptions	9	R&D expenditure by governments and higher education	73
High-tech exports	12	ICT regulatory environment	74
Use of virtual social networks	16	E-Participation	79
International Internet bandwidth	18	Use of clean fuels and technology	81
Ease of doing business	20	Government online services	83
Active mobile-broadband subscriptions	25	Internet users	84
Internet access in schools	26	Pollution	86
Freedom to make life choices	26	Technicians and associate professionals	89
Robot density	28	Professionals	95
Medium and high-tech industry	28	Road safety	117

NRI 2019 At-A-Glance: Thailand

Network Readiness Index

Rank: 56 (out of 121)

Score: 51.54

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	54	49.61	C. Governance pillar	59	61.61
1st sub-pillar: Access	39	78.34	1st sub-pillar: Trust	67	54.68
2nd sub-pillar: Content	69	39.34	2nd sub-pillar: Regulation	58	64.76
3rd sub-pillar: Future Technologies	60	31.13	3rd sub-pillar: Inclusion	56	65.38
B. People pillar	67	41.16	D. Impact pillar	60	53.80
1st sub-pillar: Individuals	49	58.29	1st sub-pillar: Economy	40	29.13
2nd sub-pillar: Businesses	78	25.54	2nd sub-pillar: Quality of Life	35	70.99
3rd sub-pillar: Governments	79	39.66	3rd sub-pillar: SDG Contribution	87	61.28

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	72	60.55	3.1.1 Rule of law	60	53.86
1.1.2 Handset prices	50	52.99	3.1.2 Software piracy rate	65	31.08
1.1.3 Internet access	67	65.55	3.1.3 Secure Internet servers	63	58.53
1.1.4 4G mobile network coverage	38	98.00	3.1.4 Cybersecurity	37	85.20
1.1.5 Fixed-broadband subscriptions	9	97.86	3.1.5 Online trust and safety	72	44.75
1.1.6 International Internet bandwidth	18	74.67	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	26	98.80	3.2.1 Regulatory quality	62	53.87
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	20	88.20
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	62	43.04
1.2.2 Mobile apps development	67	59.28	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	71	0.20	3.2.5 Social safety net protection	52	47.02
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	74	81.47
1.3.1 Availability of latest technologies	54	56.50	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	37	50.58	3.3.1 E-Participation	79	60.51
1.3.3 Government procurement of advanced technology products	50	44.49	3.3.2 Socioeconomic gap in use of digital payments	42	79.33
1.3.4 ICT PCT patent applications	66	1.87	3.3.3 Availability of local online content	51	58.75
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	43	60.99
1.3.6 Robot density	28	15.19	3.3.5 Rural gap in use of digital payments	61	67.30
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	84	52.33	4.1.1 Medium and high-tech industry	28	51.95
2.1.2 Active mobile-broadband subscriptions	25	40.43	4.1.2 High-tech exports	12	44.22
2.1.3 Use of virtual social networks	16	74.01	4.1.3 PCT patent applications	59	0.67
2.1.4 Tertiary enrolment	59	35.69	4.1.4 Labour productivity per employee	70	19.68
2.1.5 Adult literacy rate	58	88.98	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	49	61.54
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	26	87.12
2.2.1 Firms with website	73	34.92	4.2.3 Income inequality	58	69.74
2.2.2 Internet shopping	57	21.54	4.2.4 Healthy life expectancy at birth	53	65.57
2.2.3 Professionals	95	12.73	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	89	19.23	4.3.1 Access to basic services	29	99.13
2.2.5 Extent of staff training	44	50.35	4.3.2 Pollution	86	76.87
2.2.6 R&D expenditure by businesses	35	14.46	4.3.3 Road safety	117	6.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	83	60.00	4.3.5 Maths proficiency in schools	46	43.03
2.3.2 Publication and use of open data	56	27.55	4.3.6 Use of clean fuels and technology	81	81.11
2.3.3 ICT use and government efficiency	44	53.11			
2.3.4 R&D expenditure by governments and higher education	73	17.96			

* Confidential data

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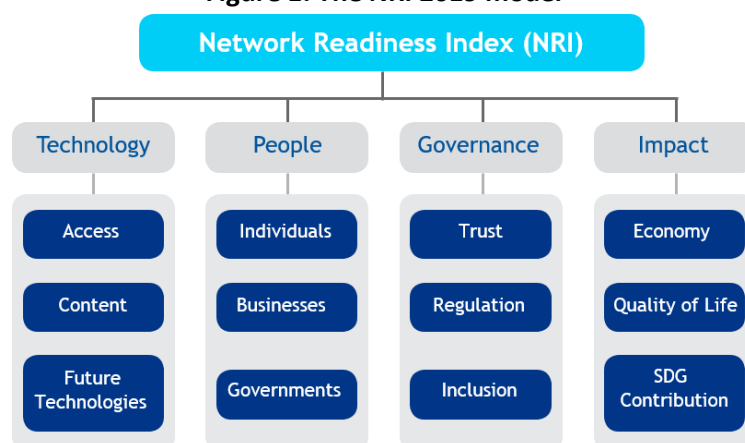
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Network Readiness Index 2019

Trinidad and Tobago

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

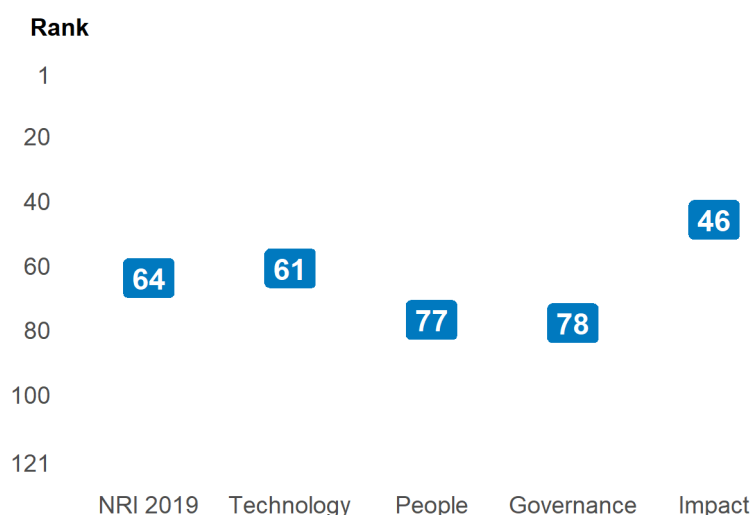
Figure 1: The NRI 2019 model



Global NRI position of Trinidad and Tobago

Trinidad and Tobago ranks 64th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Trinidad and Tobago global ranking, overall and by pillar



Performance at sub-pillar level

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

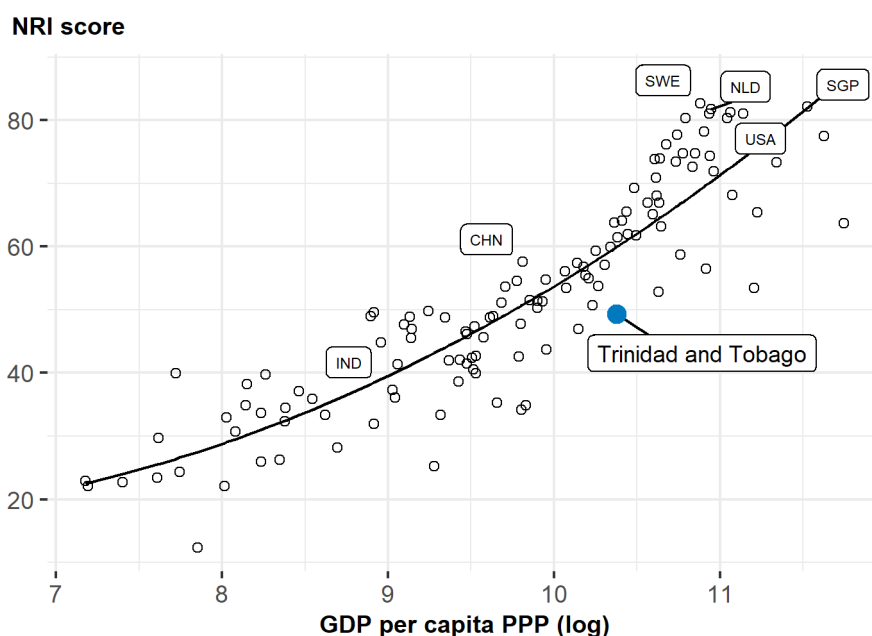
Table 1: Trinidad and Tobago rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	37	Access	64
SDG Contribution	47	Businesses	70
Quality of Life	52	Regulation	75
Inclusion	53	Future Technologies	88
Economy	58	Trust	100
Content	61	Governments	102

NRI score and income

Figure 3 shows the position of Trinidad and Tobago 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, Trinidad and Tobago 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Trinidad and Tobago belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

High-income countries

Trinidad and Tobago is ranked 47th 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.

The Americas

Trinidad and Tobago is ranked 9th within The Americas (Figure 4, right panel). It has a score above the regional average in two of the four pillars: Score, Technology and Impact. With regard to sub-pillars, it outperforms the average in The Americas in seven of the twelve sub-pillars: Access, Content, Individuals, Inclusion, Economy, Quality of Life and SDG Contribution.

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

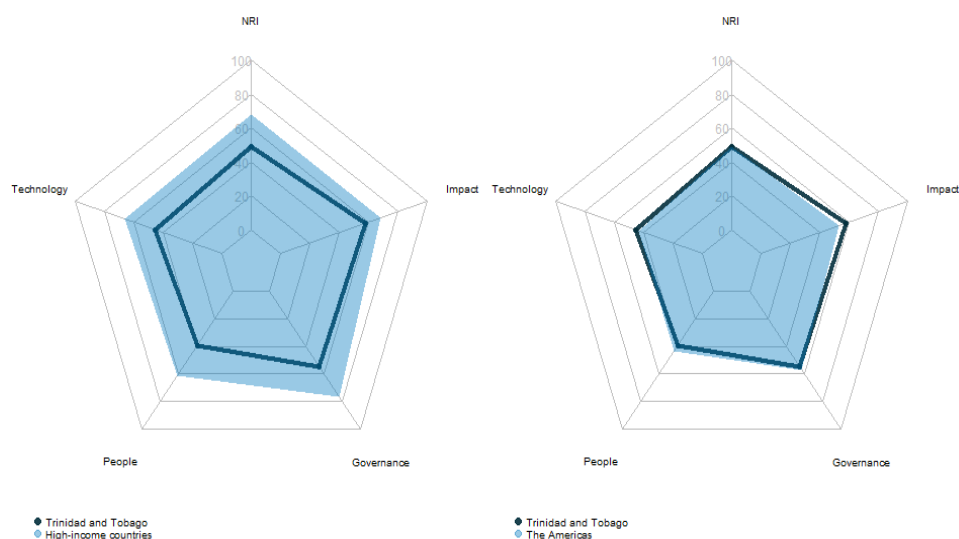


Table 2: Trinidad and Tobago scores vs. averages of its income group and region, overall and by pillar

Dimension	Trinidad and Tobago	High-income countries	The Americas
NRI	49.29	68.12	49.08
Technology	45.17	66.07	43.12
People	39.23	61.07	43.32
Governance	55.13	77.07	57.13
Impact	57.64	68.29	52.73

Strongest and weakest indicators

The indicators where Trinidad and Tobago performs particularly well include E-commerce legislation, Use of clean fuels and technology, and International Internet bandwidth (Table 3). By contrast, the economy's weakest indicators include High-tech exports, Government procurement of advanced technology products, and Cybersecurity.

Table 3: Top-ranked and bottom-ranked indicators of Trinidad and Tobago

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	R&D expenditure by governments and higher education	91
Use of clean fuels and technology	1	Professionals	92
International Internet bandwidth	14	Active mobile-broadband subscriptions	98
Adult literacy rate	22	Firms with website	99
Technicians and associate professionals	29	Legal framework's adaptability to digital business models	105
Socioeconomic gap in use of digital payments	30	Mobile tariffs	106
Reading proficiency in schools	31	Company investment in emerging technology	106
Medium and high-tech industry	32	Cybersecurity	110
Extent of staff training	37	Government procurement of advanced technology products	112
Rural gap in use of digital payments	39	High-tech exports	116

NRI 2019 At-A-Glance: Trinidad and Tobago

Network Readiness Index

Rank: 64 (out of 121)

Score: 49.29

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	61	45.17	C. Governance pillar	78	55.13
1st sub-pillar: Access	64	63.95	1st sub-pillar: Trust	100	39.07
2nd sub-pillar: Content	61	47.48	2nd sub-pillar: Regulation	75	60.14
3rd sub-pillar: Future Technologies	88	24.08	3rd sub-pillar: Inclusion	53	66.17
B. People pillar	77	39.23	D. Impact pillar	46	57.64
1st sub-pillar: Individuals	37	62.01	1st sub-pillar: Economy	58	22.58
2nd sub-pillar: Businesses	70	27.30	2nd sub-pillar: Quality of Life	52	64.86
3rd sub-pillar: Governments	102	28.38	3rd sub-pillar: SDG Contribution	47	85.49

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	106	35.40	3.1.1 Rule of law	65	50.59
1.1.2 Handset prices	57	48.96	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	51	76.00	3.1.3 Secure Internet servers	77	48.10
1.1.4 4G mobile network coverage	83	75.00	3.1.4 Cybersecurity	110	18.53
1.1.5 Fixed-broadband subscriptions	55	72.76	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	14	75.57	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	67	50.96
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	90	54.94
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	105	24.15
1.2.2 Mobile apps development	79	51.56	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	79	0.11	3.2.5 Social safety net protection	59	44.70
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	59	86.10
1.3.1 Availability of latest technologies	52	58.16	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	106	15.74	3.3.1 E-Participation	90	52.23
1.3.3 Government procurement of advanced technology products	112	19.94	3.3.2 Socioeconomic gap in use of digital payments	30	86.14
1.3.4 ICT PCT patent applications	64	2.50	3.3.3 Availability of local online content	63	52.39
1.3.5 Computer software spending	NA	NA	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	39	73.91
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	48	75.15	4.1.1 Medium and high-tech industry	32	50.52
2.1.2 Active mobile-broadband subscriptions	98	16.46	4.1.2 High-tech exports	116	0.25
2.1.3 Use of virtual social networks	49	58.42	4.1.3 PCT patent applications	66	0.32
2.1.4 Tertiary enrolment	NA	NA	4.1.4 Labour productivity per employee	44	39.22
2.1.5 Adult literacy rate	22	98.02	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	42	65.29
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	49	76.54
2.2.1 Firms with website	99	15.84	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	58	21.09	4.2.4 Healthy life expectancy at birth	90	52.75
2.2.3 Professionals	92	14.20	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	29	57.87	4.3.1 Access to basic services	56	94.45
2.2.5 Extent of staff training	37	54.77	4.3.2 Pollution	72	81.60
2.2.6 R&D expenditure by businesses	90	0.03	4.3.3 Road safety	47	70.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	31	80.79
2.3.1 Government online services	83	60.00	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	74	17.99	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	91	7.16			

* Confidential data

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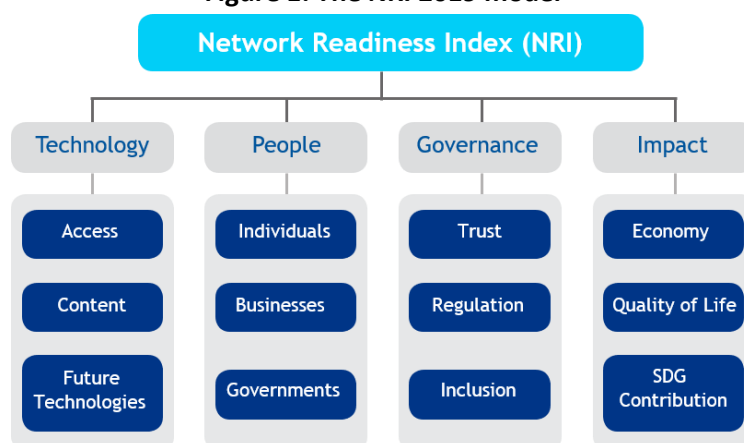
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Network Readiness Index 2019

Tunisia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

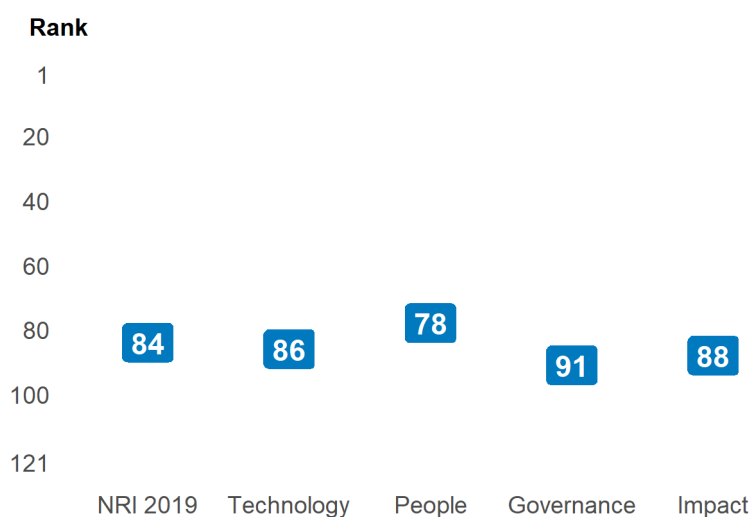
Figure 1: The NRI 2019 model



Global NRI position of Tunisia

Tunisia ranks 84th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Tunisia global ranking, overall and by pillar



Performance at sub-pillar level

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

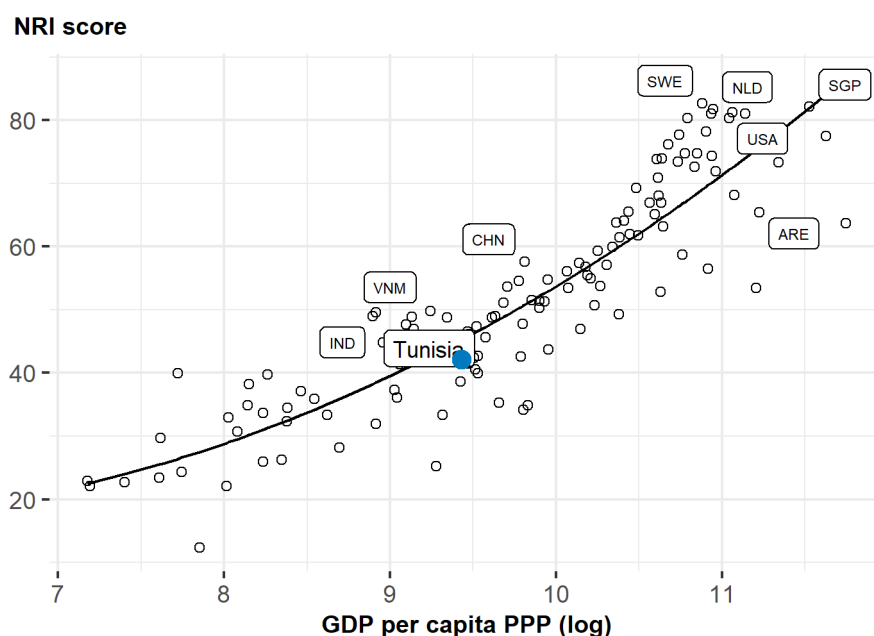
Table 1: Tunisia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	51	SDG Contribution	86
Economy	64	Content	91
Businesses	75	Individuals	91
Access	76	Quality of Life	96
Regulation	79	Future Technologies	97
Trust	84	Inclusion	101

NRI score and income

Figure 3 shows the position of Tunisia 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, Tunisia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Tunisia belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

Lower-middle-income countries

Tunisia is ranked 7th 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 each of the four pillars. At the sub-pillar level, it outperforms lower-middle-income countries in nine of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Economy and SDG Contribution.

Arab States

Tunisia is ranked 8th within Arab States (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 Arab States in two of the twelve sub-pillars: Governments and Regulation.

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

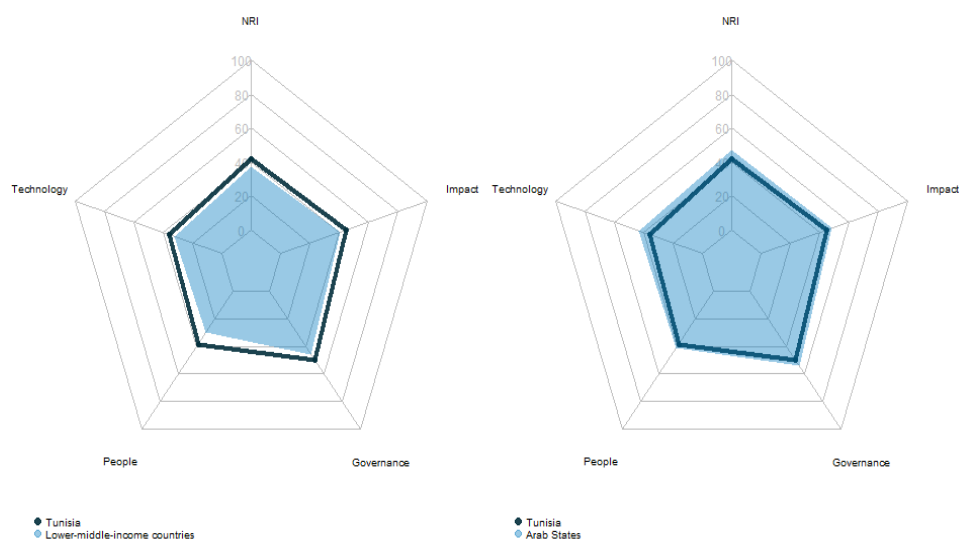


Table 2: Tunisia scores vs. averages of its income group and region, overall and by pillar

Dimension	Tunisia	Lower-middle-income countries	Arab States
NRI	42.04	37.18	46.82
Technology	35.70	32.15	43.54
People	38.29	30.04	41.30
Governance	49.68	46.17	54.28
Impact	44.50	40.35	48.18

Strongest and weakest indicators

The indicators where Tunisia performs particularly well include E-commerce legislation, Use of clean fuels and technology, and Computer software spending (Table 3). By contrast, the economy's weakest indicators include Rural gap in use of digital payments, Freedom to make life choices, and Socioeconomic gap in use of digital payments.

Table 3: Top-ranked and bottom-ranked indicators of Tunisia

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Professionals	89
Use of clean fuels and technology	1	Digital participation and content creation	94
Computer software spending	30	Road safety	94
R&D expenditure by governments and higher education	32	Regulatory quality	95
Income inequality	34	Happiness	99
Use of virtual social networks	41	Pollution	99
Internet access in schools	42	Government procurement of advanced technology products	107
Medium and high-tech industry	42	Socioeconomic gap in use of digital payments	108
Firms with website	44	Freedom to make life choices	109
Government online services	44	Rural gap in use of digital payments	110

NRI 2019 At-A-Glance: Tunisia

Network Readiness Index

Rank: 84 (out of 121)

Score: 42.04

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	86	35.70	C. Governance pillar	91	49.68
1st sub-pillar: Access	76	57.74	1st sub-pillar: Trust	84	45.74
2nd sub-pillar: Content	91	27.48	2nd sub-pillar: Regulation	79	58.47
3rd sub-pillar: Future Technologies	97	21.88	3rd sub-pillar: Inclusion	101	44.83
B. People pillar	78	38.29	D. Impact pillar	88	44.50
1st sub-pillar: Individuals	91	40.88	1st sub-pillar: Economy	64	20.17
2nd sub-pillar: Businesses	75	25.80	2nd sub-pillar: Quality of Life	96	51.58
3rd sub-pillar: Governments	51	48.21	3rd sub-pillar: SDG Contribution	86	61.76

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	54	68.38	3.1.1 Rule of law	57	54.23
1.1.2 Handset prices	76	41.27	3.1.2 Software piracy rate	73	21.62
1.1.3 Internet access	82	42.44	3.1.3 Secure Internet servers	75	49.10
1.1.4 4G mobile network coverage	51	96.00	3.1.4 Cybersecurity	76	56.69
1.1.5 Fixed-broadband subscriptions	79	40.64	3.1.5 Online trust and safety	71	47.03
1.1.6 International Internet bandwidth	74	67.01	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	42	48.44	3.2.1 Regulatory quality	95	42.36
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	71	67.97
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	88	33.00
1.2.2 Mobile apps development	75	53.24	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	51	0.73	3.2.5 Social safety net protection	78	33.76
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	85	73.75
1.3.1 Availability of latest technologies	72	47.84	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	77	30.18	3.3.1 E-Participation	53	77.07
1.3.3 Government procurement of advanced technology products	107	22.36	3.3.2 Socioeconomic gap in use of digital payments	108	35.33
1.3.4 ICT PCT patent applications	63	2.66	3.3.3 Availability of local online content	83	39.46
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	54	0.95	3.3.5 Rural gap in use of digital payments	110	27.44
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	75	60.53	4.1.1 Medium and high-tech industry	42	42.88
2.1.2 Active mobile-broadband subscriptions	64	28.72	4.1.2 High-tech exports	59	14.00
2.1.3 Use of virtual social networks	41	63.62	4.1.3 PCT patent applications	69	0.31
2.1.4 Tertiary enrolment	79	23.07	4.1.4 Labour productivity per employee	64	23.51
2.1.5 Adult literacy rate	78	67.54	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	60	1.77	4.2.1 Happiness	99	35.07
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	109	28.03
2.2.1 Firms with website	44	61.92	4.2.3 Income inequality	34	79.47
2.2.2 Internet shopping	87	5.96	4.2.4 Healthy life expectancy at birth	62	63.74
2.2.3 Professionals	89	15.95	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	65	32.49	4.3.1 Access to basic services	69	91.54
2.2.5 Extent of staff training	72	35.40	4.3.2 Pollution	99	66.23
2.2.6 R&D expenditure by businesses	59	3.07	4.3.3 Road safety	94	37.19
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	44	66.19
2.3.1 Government online services	44	78.47	4.3.5 Maths proficiency in schools	71	9.39
2.3.2 Publication and use of open data	52	32.17	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	88	34.04			
2.3.4 R&D expenditure by governments and higher education	32	48.17			

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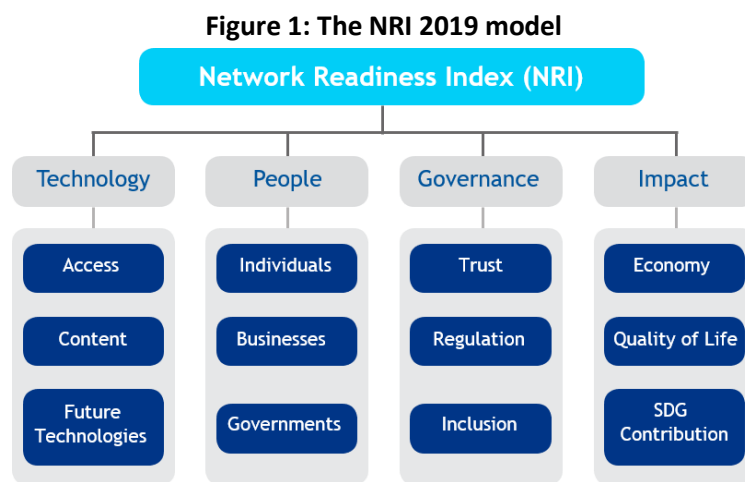
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Network Readiness Index 2019

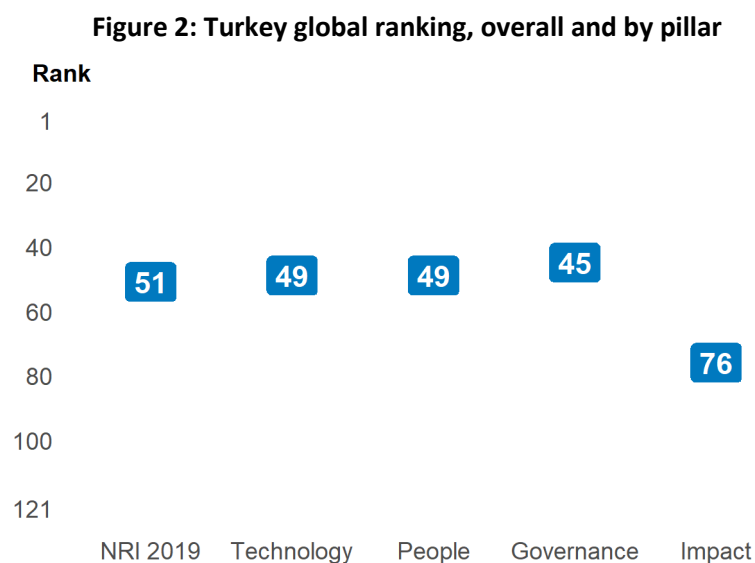
Turkey

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Turkey

Turkey ranks 51st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. 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 Regulation, Governments and Trust, among others (Table 1). More could be done, though, to improve the economy's performances in the Businesses, Inclusion and Quality of Life sub-pillars.

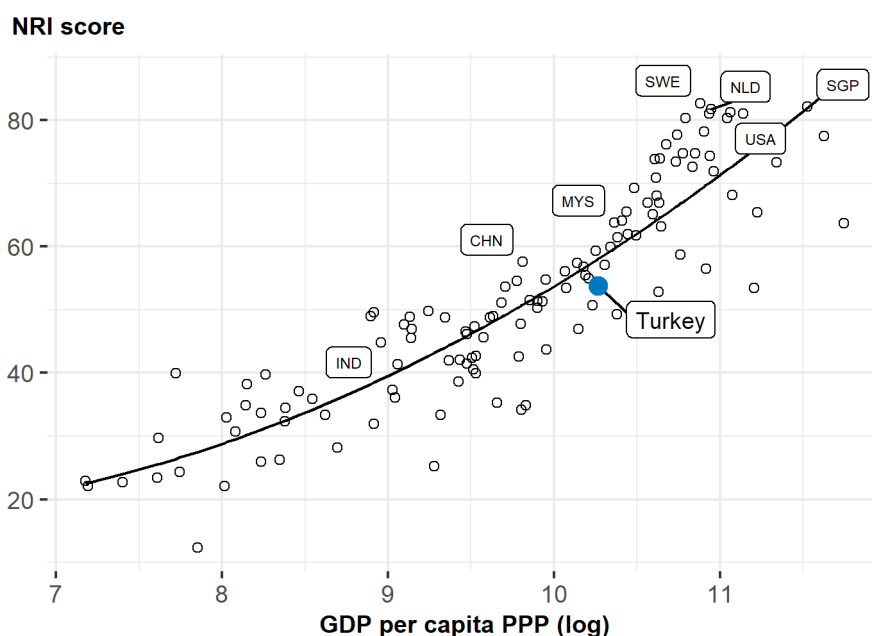
Table 1: Turkey rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Regulation	31	SDG Contribution	54
Governments	40	Economy	56
Trust	45	Future Technologies	58
Individuals	50	Businesses	61
Content	52	Inclusion	66
Access	54	Quality of Life	107

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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Turkey belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Upper-middle-income countries

Turkey is ranked 7th 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 three of the four pillars: Score, Technology, People and Governance. At the sub-pillar level, it outperforms upper-middle-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

Europe

Turkey is ranked 33rd 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: Regulation.

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

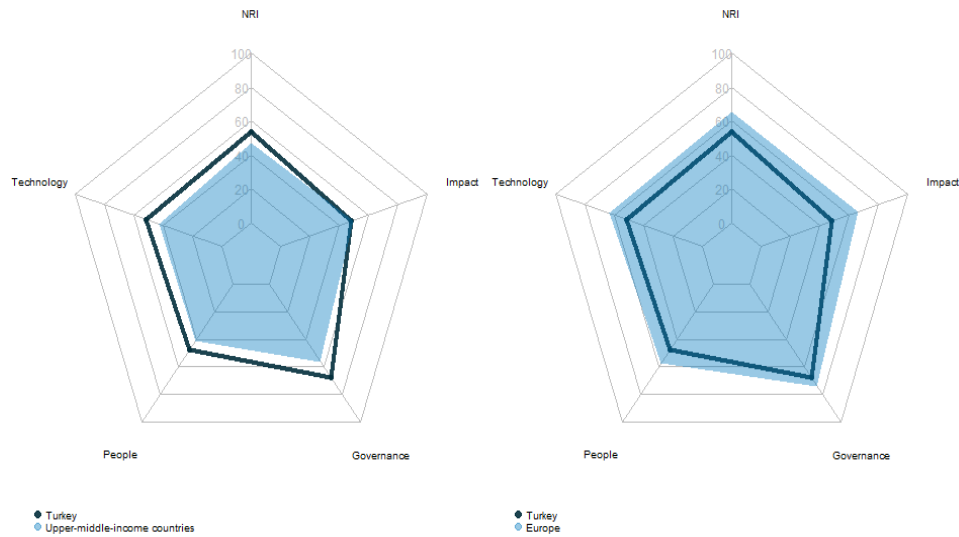


Table 2: Turkey scores vs. averages of its income group and region, overall and by pillar

Dimension	Turkey	Upper-middle-income countries	Europe
NRI	53.75	47.40	65.20
Technology	51.27	42.66	63.08
People	47.45	41.07	57.50
Governance	67.79	56.24	73.99
Impact	48.49	49.62	66.24

Strongest and weakest indicators

The indicators where Turkey performs particularly well include E-commerce legislation, Use of clean fuels and technology, and ICT regulatory environment (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Pollution, and Extent of staff training.

Table 3: Top-ranked and bottom-ranked indicators of Turkey

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Rule of law	80
Use of clean fuels and technology	1	Income inequality	80
ICT regulatory environment	8	Happiness	83
Computer software spending	19	Intellectual property receipts	86
Cybersecurity	22	Handset prices	88
Government online services	27	High-tech exports	94
Ease of doing business	32	Company investment in emerging technology	97
Labour productivity per employee	33	Extent of staff training	99
Robot density	35	Pollution	106
PCT patent applications	35	Freedom to make life choices	121

NRI 2019 At-A-Glance: Turkey

Network Readiness Index

Rank: 51 (out of 121)

Score: 53.75

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	49	51.27	C. Governance pillar	45	67.79
1st sub-pillar: Access	54	71.63	1st sub-pillar: Trust	45	64.53
2nd sub-pillar: Content	52	50.02	2nd sub-pillar: Regulation	31	77.09
3rd sub-pillar: Future Technologies	58	32.17	3rd sub-pillar: Inclusion	66	61.75
B. People pillar	49	47.45	D. Impact pillar	76	48.49
1st sub-pillar: Individuals	50	58.29	1st sub-pillar: Economy	56	23.19
2nd sub-pillar: Businesses	61	30.17	2nd sub-pillar: Quality of Life	107	40.62
3rd sub-pillar: Governments	40	53.90	3rd sub-pillar: SDG Contribution	54	81.64

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	49	69.79	3.1.1 Rule of law	80	46.05
1.1.2 Handset prices	88	35.86	3.1.2 Software piracy rate	50	44.59
1.1.3 Internet access	37	82.71	3.1.3 Secure Internet servers	47	71.45
1.1.4 4G mobile network coverage	58	93.17	3.1.4 Cybersecurity	22	91.45
1.1.5 Fixed-broadband subscriptions	51	76.42	3.1.5 Online trust and safety	39	69.10
1.1.6 International Internet bandwidth	38	71.87	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	72	50.37
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	32	82.36
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	NA	NA
1.2.2 Mobile apps development	48	67.77	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	86	0.05	3.2.5 Social safety net protection	42	56.03
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	8	96.72
1.3.1 Availability of latest technologies	55	56.45	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	97	21.50	3.3.1 E-Participation	37	84.08
1.3.3 Government procurement of advanced technology products	57	42.19	3.3.2 Socioeconomic gap in use of digital payments	61	68.25
1.3.4 ICT PCT patent applications	38	18.58	3.3.3 Availability of local online content	NA	NA
1.3.5 Computer software spending	19	45.45	3.3.4 Gender gap in internet use	79	34.87
1.3.6 Robot density	35	8.83	3.3.5 Rural gap in use of digital payments	74	59.78
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	61	68.16	4.1.1 Medium and high-tech industry	45	40.05
2.1.2 Active mobile-broadband subscriptions	68	27.95	4.1.2 High-tech exports	94	4.41
2.1.3 Use of virtual social networks	44	62.58	4.1.3 PCT patent applications	35	3.66
2.1.4 Tertiary enrolment	NA	NA	4.1.4 Labour productivity per employee	33	44.63
2.1.5 Adult literacy rate	40	94.07	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	45	38.69	4.2.1 Happiness	83	44.33
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	121	0.00
2.2.1 Firms with website	46	61.63	4.2.3 Income inequality	80	55.53
2.2.2 Internet shopping	50	27.31	4.2.4 Healthy life expectancy at birth	69	62.64
2.2.3 Professionals	65	25.91	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	80	25.42	4.3.1 Access to basic services	45	97.48
2.2.5 Extent of staff training	99	26.87	4.3.2 Pollution	106	59.10
2.2.6 R&D expenditure by businesses	37	13.88	4.3.3 Road safety	49	70.00
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	27	87.69	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	43	36.88	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	44	37.12			

* Confidential data

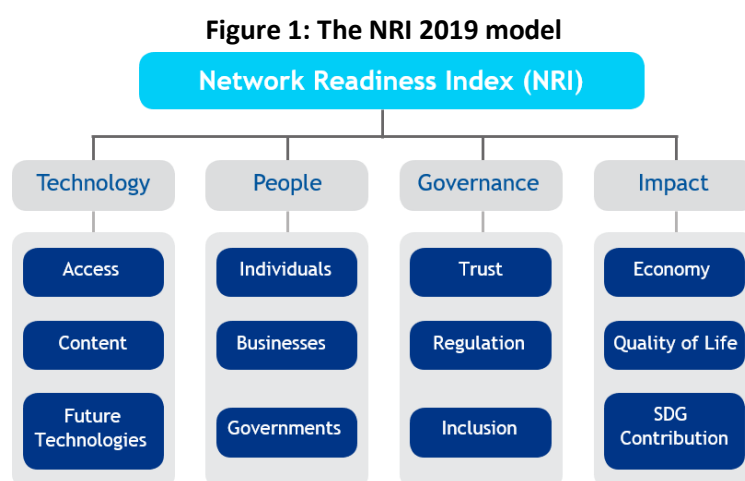
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Network Readiness Index 2019

Uganda

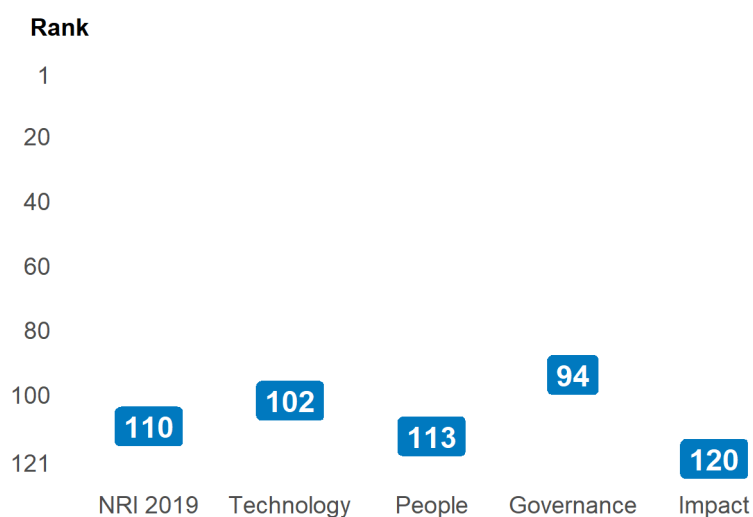
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Uganda

Uganda ranks 110th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Uganda global ranking, overall and by pillar



Performance at sub-pillar level

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

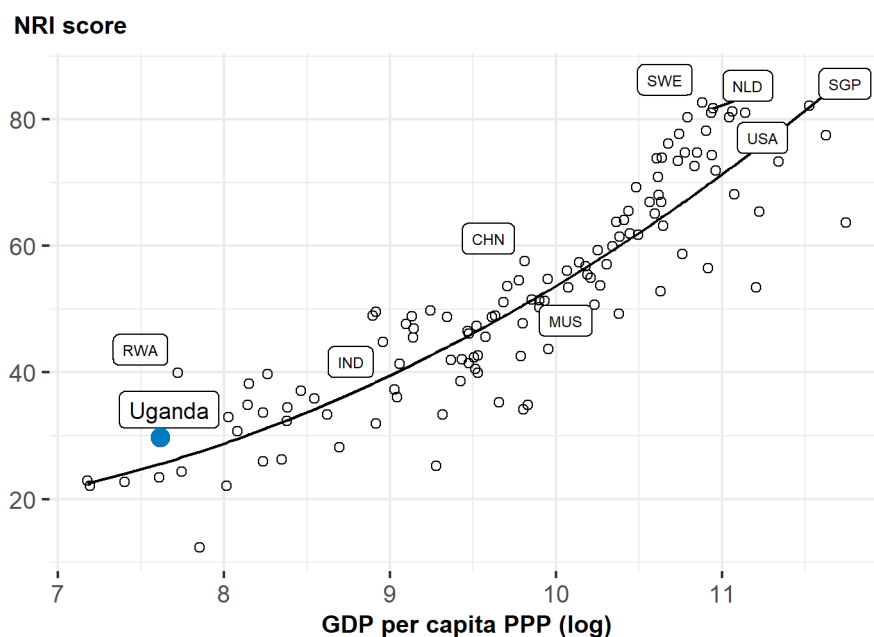
Table 1: Uganda rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	73	Content	104
Trust	90	Economy	106
Inclusion	91	Individuals	112
Access	95	Quality of Life	112
Regulation	96	Businesses	114
Governments	98	SDG Contribution	120

NRI score and income

Figure 3 shows the position of Uganda 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, Uganda 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Uganda belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Low-income countries

Uganda is ranked 5th in the group of low-income countries (Figure 4, left panel). In terms of pillar performance, it has a score higher than the income group average in three of the four pillars: Score, Technology, People and Governance. At the sub-pillar level, it outperforms low-income countries in eight of the twelve sub-pillars: Access, Content, Future Technology, Individuals, Governments, Trust, Regulation and Inclusion.

Africa

Uganda is ranked 10th within Africa (Figure 4, right panel). It has a score above the regional average in two of the four pillars: Technology and Governance. With regard to sub-pillars, it outperforms the average in Africa in four of the twelve sub-pillars: Access, Content, Regulation and Inclusion.

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



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

Dimension	Uganda	Low-income countries	Africa
NRI	29.70	26.91	31.07
Technology	28.28	20.09	26.03
People	19.74	18.24	23.76
Governance	48.39	41.33	45.32
Impact	22.39	27.97	29.15

Strongest and weakest indicators

The indicators where Uganda performs particularly well include Rural gap in use of digital payments, Government procurement of advanced technology products, and ICT regulatory environment (Table 3). By contrast, the economy's weakest indicators include Access to basic services, Use of virtual social networks, and Internet access.

Table 3: Top-ranked and bottom-ranked indicators of Uganda

Strongest indicators	Rank	Weakest indicators	Rank
Rural gap in use of digital payments	37	Use of clean fuels and technology	111
Government procurement of advanced technology products	43	Mobile tariffs	112
ICT regulatory environment	50	Tertiary enrolment	112
Fixed-broadband subscriptions	58	Secure Internet servers	113
Intellectual property receipts	58	Healthy life expectancy at birth	113
Maths proficiency in schools	61	Mobile apps development	114
Reading proficiency in schools	62	Availability of local online content	114
Socioeconomic gap in use of digital payments	65	Internet access	116
Cybersecurity	66	Use of virtual social networks	117
E-commerce legislation	66	Access to basic services	119

NRI 2019 At-A-Glance: Uganda

Network Readiness Index

Rank: 110 (out of 121)

Score: 29.70

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	102	28.28	C. Governance pillar	94	48.39
1st sub-pillar: Access	95	39.74	1st sub-pillar: Trust	90	42.40
2nd sub-pillar: Content	104	17.12	2nd sub-pillar: Regulation	96	52.48
3rd sub-pillar: Future Technologies	73	27.98	3rd sub-pillar: Inclusion	91	50.30
B. People pillar	113	19.74	D. Impact pillar	120	22.39
1st sub-pillar: Individuals	112	19.26	1st sub-pillar: Economy	106	7.79
2nd sub-pillar: Businesses	114	10.70	2nd sub-pillar: Quality of Life	112	36.94
3rd sub-pillar: Governments	98	29.26	3rd sub-pillar: SDG Contribution	120	22.44

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	112	28.67	3.1.1 Rule of law	78	46.61
1.1.2 Handset prices	108	21.53	3.1.2 Software piracy rate	NA	NA
1.1.3 Internet access	116	4.80	3.1.3 Secure Internet servers	113	25.46
1.1.4 4G mobile network coverage	97	57.00	3.1.4 Cybersecurity	66	66.01
1.1.5 Fixed-broadband subscriptions	58	71.01	3.1.5 Online trust and safety	84	31.51
1.1.6 International Internet bandwidth	109	55.42	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	89	45.88
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	96	52.62
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	89	32.70
1.2.2 Mobile apps development	114	21.98	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	58	0.53	3.2.5 Social safety net protection	103	21.83
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	50	86.88
1.3.1 Availability of latest technologies	101	35.12	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	75	30.61	3.3.1 E-Participation	83	57.32
1.3.3 Government procurement of advanced technology products	43	46.20	3.3.2 Socioeconomic gap in use of digital payments	65	65.42
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	114	4.24
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	37	74.20
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	109	15.48	4.1.1 Medium and high-tech industry	96	13.88
2.1.2 Active mobile-broadband subscriptions	107	11.32	4.1.2 High-tech exports	87	6.69
2.1.3 Use of virtual social networks	117	2.91	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	112	2.96	4.1.4 Labour productivity per employee	100	2.80
2.1.5 Adult literacy rate	81	63.65	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	109	26.33
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	96	46.29
2.2.1 Firms with website	110	0.78	4.2.3 Income inequality	82	53.16
2.2.2 Internet shopping	93	4.91	4.2.4 Healthy life expectancy at birth	113	21.98
2.2.3 Professionals	93	13.65	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	100	11.77	4.3.1 Access to basic services	119	12.66
2.2.5 Extent of staff training	77	32.91	4.3.2 Pollution	108	51.83
2.2.6 R&D expenditure by businesses	83	0.18	4.3.3 Road safety	110	17.81
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	62	32.79
2.3.1 Government online services	90	52.30	4.3.5 Maths proficiency in schools	61	19.56
2.3.2 Publication and use of open data	85	11.59	4.3.6 Use of clean fuels and technology	111	0.00
2.3.3 ICT use and government efficiency	74	39.76			
2.3.4 R&D expenditure by governments and higher education	83	13.37			

* Confidential data

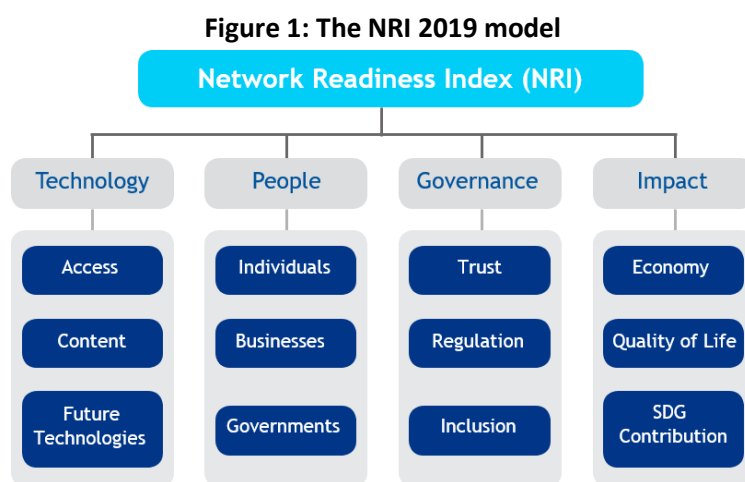
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Network Readiness Index 2019

Ukraine

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Ukraine

Ukraine ranks 67th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Technology.



Performance at sub-pillar level

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

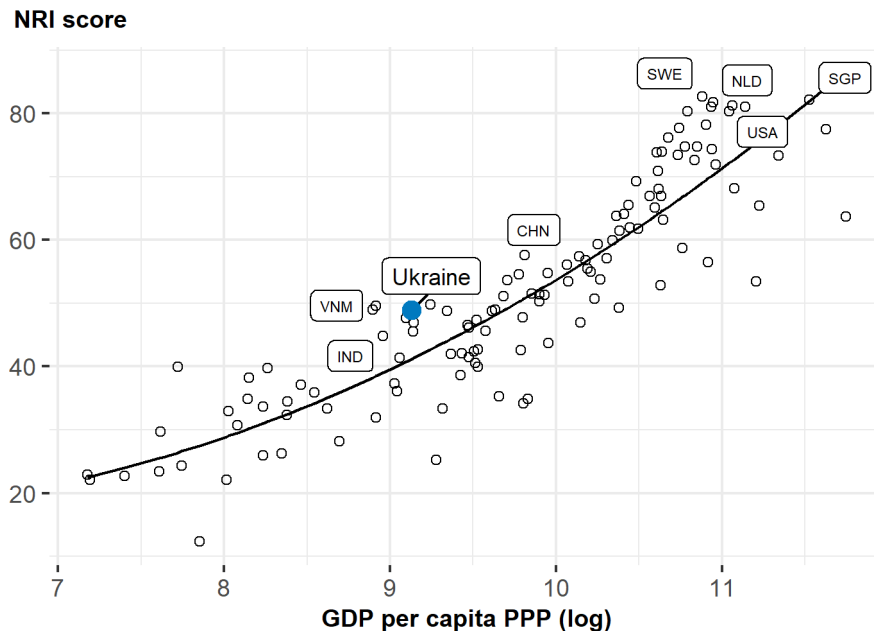
Table 1: Ukraine rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	43	Regulation	72
Businesses	48	Economy	75
Content	56	Access	78
Individuals	68	Future Technologies	82
Trust	70	Quality of Life	82
Inclusion	70	Governments	87

NRI score and income

Figure 3 shows the position of Ukraine 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, Ukraine 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Ukraine belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Europe—is Sweden (SWE).

Performance against its income group and region

Lower-middle-income countries

Ukraine is ranked 3rd 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 each of the four pillars. At the sub-pillar level, it outperforms lower-middle-income countries in eleven of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Ukraine is ranked 37th within Europe (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 Ukraine against its income group and region, overall and by pillar

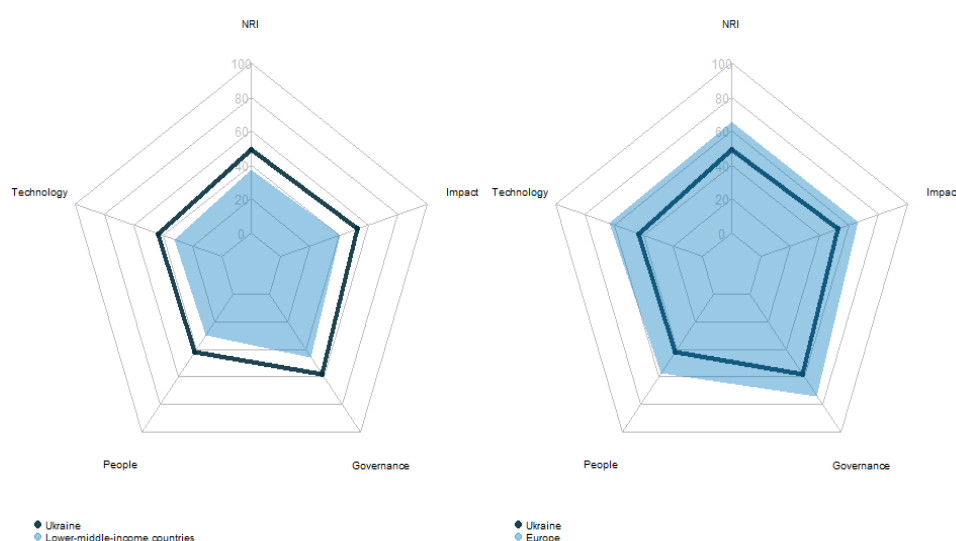


Table 2: Ukraine scores vs. averages of its income group and region, overall and by pillar

Dimension	Ukraine	Lower-middle-income countries	Europe
NRI	48.92	37.18	65.20
Technology	43.01	32.15	63.08
People	42.05	30.04	57.50
Governance	58.32	46.17	73.99
Impact	52.31	40.35	66.24

Strongest and weakest indicators

The indicators where Ukraine performs particularly well include Adult literacy rate, E-commerce legislation, and Income inequality (Table 3). By contrast, the economy's weakest indicators include 4G mobile network coverage, Handset prices, and Freedom to make life choices.

Table 3: Top-ranked and bottom-ranked indicators of Ukraine

Strongest indicators	Rank	Weakest indicators	Rank
Adult literacy rate	1	Government online services	90
E-commerce legislation	1	Use of virtual social networks	92
Income inequality	1	Legal framework's adaptability to digital business models	93
Use of clean fuels and technology	1	Active mobile-broadband subscriptions	97
Tertiary enrolment	14	Availability of latest technologies	99
Fixed-broadband subscriptions	16	Happiness	100
Computer software spending	19	Rule of law	102
Professionals	29	Freedom to make life choices	105
Online trust and safety	32	Handset prices	107
Internet access in schools	40	4G mobile network coverage	119

NRI 2019 At-A-Glance: Ukraine

Network Readiness Index

Rank: 67 (out of 121)

Score: 48.92

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	71	43.01	C. Governance pillar	67	58.32
1st sub-pillar: Access	78	53.72	1st sub-pillar: Trust	70	53.00
2nd sub-pillar: Content	56	48.74	2nd sub-pillar: Regulation	72	61.26
3rd sub-pillar: Future Technologies	82	26.57	3rd sub-pillar: Inclusion	70	60.69
B. People pillar	63	42.05	D. Impact pillar	65	52.31
1st sub-pillar: Individuals	68	53.88	1st sub-pillar: Economy	75	15.76
2nd sub-pillar: Businesses	48	35.69	2nd sub-pillar: Quality of Life	82	54.97
3rd sub-pillar: Governments	87	36.58	3rd sub-pillar: SDG Contribution	43	86.22

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	46	70.14	3.1.1 Rule of law	102	36.96
1.1.2 Handset prices	107	21.72	3.1.2 Software piracy rate	83	12.16
1.1.3 Internet access	74	57.60	3.1.3 Secure Internet servers	43	74.26
1.1.4 4G mobile network coverage	119	3.00	3.1.4 Cybersecurity	55	70.39
1.1.5 Fixed-broadband subscriptions	16	95.72	3.1.5 Online trust and safety	32	71.23
1.1.6 International Internet bandwidth	49	70.25	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	40	57.61	3.2.1 Regulatory quality	85	46.57
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	60	70.72
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	93	31.40
1.2.2 Mobile apps development	61	62.88	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	46	0.81	3.2.5 Social safety net protection	75	37.24
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	73	81.66
1.3.1 Availability of latest technologies	99	35.19	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	62	35.52	3.3.1 E-Participation	72	64.33
1.3.3 Government procurement of advanced technology products	83	31.96	3.3.2 Socioeconomic gap in use of digital payments	56	71.47
1.3.4 ICT PCT patent applications	47	10.55	3.3.3 Availability of local online content	52	58.65
1.3.5 Computer software spending	19	45.45	3.3.4 Gender gap in internet use	65	55.03
1.3.6 Robot density	56	0.74	3.3.5 Rural gap in use of digital payments	86	53.97
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	80	54.63	4.1.1 Medium and high-tech industry	48	38.65
2.1.2 Active mobile-broadband subscriptions	97	16.87	4.1.2 High-tech exports	71	10.24
2.1.3 Use of virtual social networks	92	37.63	4.1.3 PCT patent applications	55	0.91
2.1.4 Tertiary enrolment	14	60.28	4.1.4 Labour productivity per employee	81	13.23
2.1.5 Adult literacy rate	1	100.00	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	100	33.42
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	105	31.13
2.2.1 Firms with website	61	47.64	4.2.3 Income inequality	1	100.00
2.2.2 Internet shopping	49	27.80	4.2.4 Healthy life expectancy at birth	84	55.31
2.2.3 Professionals	29	47.44	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	45	48.57	4.3.1 Access to basic services	62	93.41
2.2.5 Extent of staff training	67	36.06	4.3.2 Pollution	59	85.83
2.2.6 R&D expenditure by businesses	50	6.62	4.3.3 Road safety	58	65.62
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	90	52.30	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	45	35.96	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	65	42.01			
2.3.4 R&D expenditure by governments and higher education	79	16.04			

* Confidential data

Sources

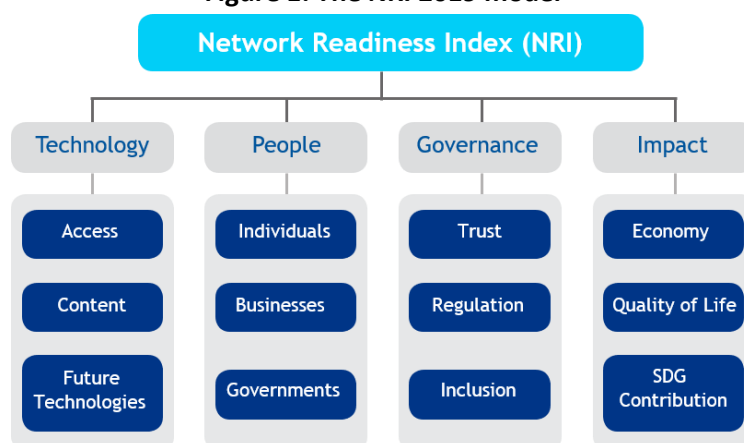
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Network Readiness Index 2019

United Arab Emirates

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

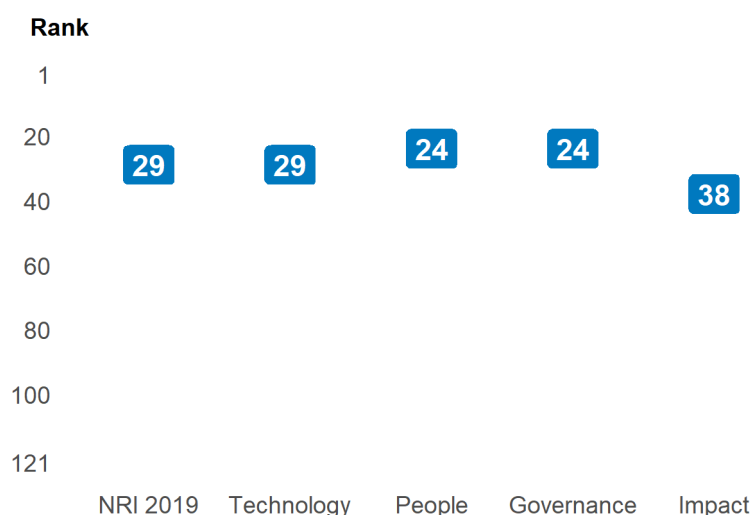
Figure 1: The NRI 2019 model



Global NRI position of United Arab Emirates

United Arab Emirates ranks 29th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People and Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: United Arab Emirates global ranking, overall and by pillar



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of United Arab Emirates relate to Individuals, Access and Quality of Life, among others (Table 1). More could be done, though, to improve the economy's performances in the Content, Governments and SDG Contribution sub-pillars.

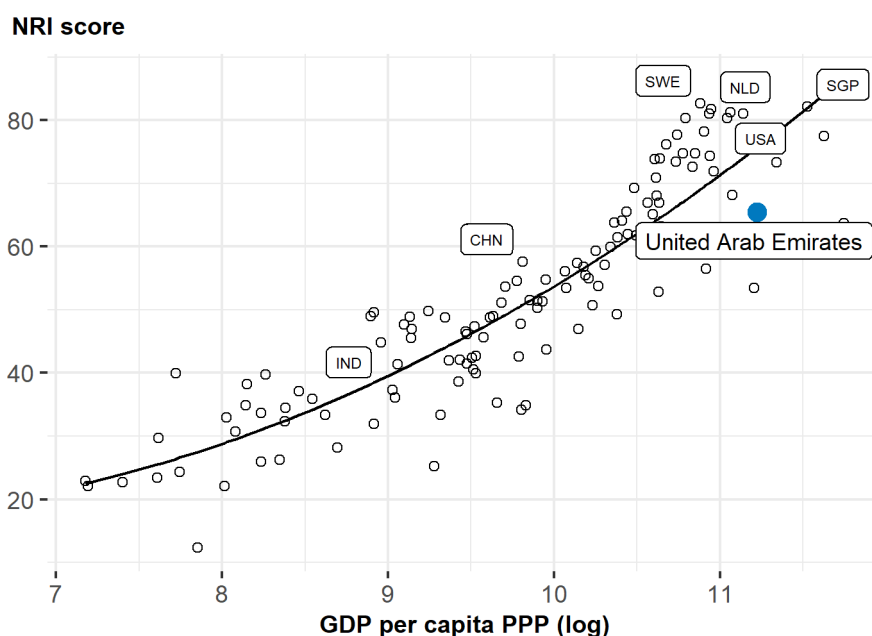
Table 1: United Arab Emirates rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	1	Trust	27
Access	10	Businesses	34
Quality of Life	21	Economy	36
Future Technologies	23	Content	48
Regulation	23	Governments	59
Inclusion	23	SDG Contribution	75

NRI score and income

Figure 3 shows the position of United Arab Emirates 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, United Arab Emirates 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. United Arab Emirates belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

High-income countries

United Arab Emirates is ranked 29th 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: Governance. At the sub-pillar level, it outperforms high-income countries in six of the twelve sub-pillars: Access, Future Technology, Individuals, Regulation, Inclusion and Quality of Life.

Arab States

United Arab Emirates is ranked 1st within Arab States (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

Figure 4: Performance of United Arab Emirates against its income group and region, overall and by pillar



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

Dimension	United Arab Emirates	High-income countries	Arab States
NRI	65.45	68.12	46.82
Technology	63.92	66.07	43.54
People	60.28	61.07	41.30
Governance	77.69	77.07	54.28
Impact	59.92	68.29	48.18

Strongest and weakest indicators

The indicators where United Arab Emirates performs particularly well include Internet access in schools, Government procurement of advanced technology products, and Active mobile-broadband subscriptions (Table 3). By contrast, the economy's weakest indicators include Pollution, Rural gap in use of digital payments, and Road safety.

Table 3: Top-ranked and bottom-ranked indicators of United Arab Emirates

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	Publication and use of open data	59
Government procurement of advanced technology products	1	Secure Internet servers	59
Active mobile-broadband subscriptions	1	Medium and high-tech industry	60
Use of virtual social networks	1	Digital participation and content creation	61
Use of clean fuels and technology	1	ICT regulatory environment	65
Legal framework's adaptability to digital business models	2	E-commerce legislation	66
Internet access	4	R&D expenditure by governments and higher education	70
Internet users	5	Road safety	80
Freedom to make life choices	6	Rural gap in use of digital payments	93
International Internet bandwidth	7	Pollution	102

NRI 2019 At-A-Glance: United Arab Emirates

Network Readiness Index

Rank: 29 (out of 121)

Score: 65.45

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	29	63.92	C. Governance pillar	24	77.69
1st sub-pillar: Access	10	87.77	1st sub-pillar: Trust	27	74.56
2nd sub-pillar: Content	48	51.68	2nd sub-pillar: Regulation	23	80.05
3rd sub-pillar: Future Technologies	23	52.30	3rd sub-pillar: Inclusion	23	78.46
B. People pillar	24	60.28	D. Impact pillar	38	59.92
1st sub-pillar: Individuals	1	88.09	1st sub-pillar: Economy	36	31.13
2nd sub-pillar: Businesses	34	46.22	2nd sub-pillar: Quality of Life	21	78.40
3rd sub-pillar: Governments	59	46.53	3rd sub-pillar: SDG Contribution	75	70.24

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	43	71.25	3.1.1 Rule of law	33	71.72
1.1.2 Handset prices	12	73.52	3.1.2 Software piracy rate	20	77.03
1.1.3 Internet access	4	98.29	3.1.3 Secure Internet servers	59	62.30
1.1.4 4G mobile network coverage	14	99.73	3.1.4 Cybersecurity	35	86.40
1.1.5 Fixed-broadband subscriptions	31	91.39	3.1.5 Online trust and safety	25	75.34
1.1.6 International Internet bandwidth	7	80.23	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	34	71.93
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	15	89.65
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	2	97.74
1.2.2 Mobile apps development	32	77.30	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	19	5.93	3.2.5 Social safety net protection	34	62.57
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	65	83.40
1.3.1 Availability of latest technologies	13	87.97	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	11	77.84	3.3.1 E-Participation	17	93.63
1.3.3 Government procurement of advanced technology products	1	100.00	3.3.2 Socioeconomic gap in use of digital payments	31	86.01
1.3.4 ICT PCT patent applications	35	19.83	3.3.3 Availability of local online content	8	90.54
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	7	69.76
1.3.6 Robot density	55	0.90	3.3.5 Rural gap in use of digital payments	93	52.36
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	5	98.66	4.1.1 Medium and high-tech industry	60	32.36
2.1.2 Active mobile-broadband subscriptions	1	100.00	4.1.2 High-tech exports	32	25.82
2.1.3 Use of virtual social networks	1	100.00	4.1.3 PCT patent applications	45	2.25
2.1.4 Tertiary enrolment	NA	NA	4.1.4 Labour productivity per employee	11	64.11
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	33	53.70	4.2.1 Happiness	25	73.87
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	6	96.12
2.2.1 Firms with website	NA	NA	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	21	63.63	4.2.4 Healthy life expectancy at birth	57	65.20
2.2.3 Professionals	48	34.44	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	49	44.19	4.3.1 Access to basic services	41	97.78
2.2.5 Extent of staff training	20	70.09	4.3.2 Pollution	102	61.95
2.2.6 R&D expenditure by businesses	26	18.73	4.3.3 Road safety	80	51.88
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	39	67.79
2.3.1 Government online services	14	93.84	4.3.5 Maths proficiency in schools	47	42.06
2.3.2 Publication and use of open data	59	26.17	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	NA	NA			
2.3.4 R&D expenditure by governments and higher education	70	19.57			

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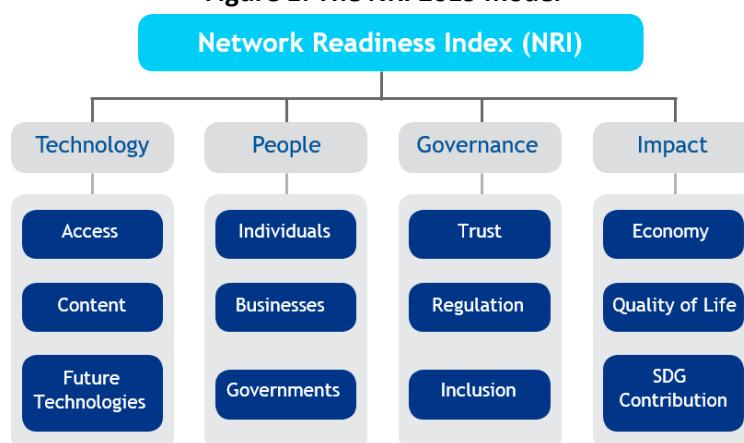
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Network Readiness Index 2019

United Kingdom

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

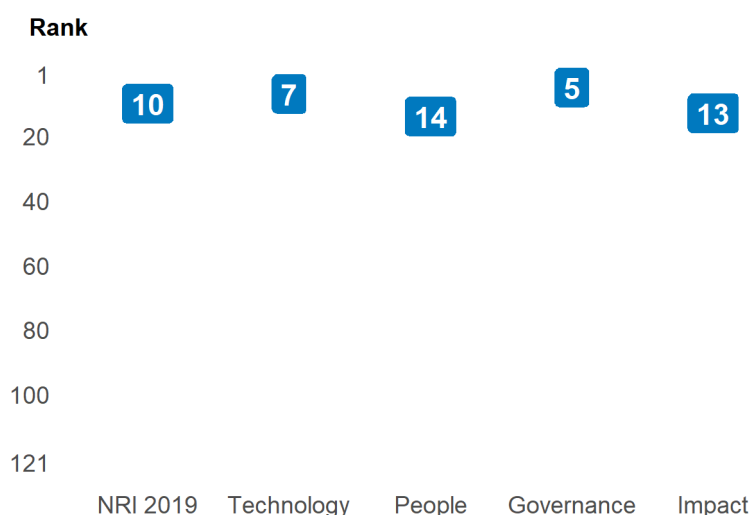
Figure 1: The NRI 2019 model



Global NRI position of United Kingdom

United Kingdom ranks 10th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: United Kingdom global ranking, overall and by pillar



Performance at sub-pillar level

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

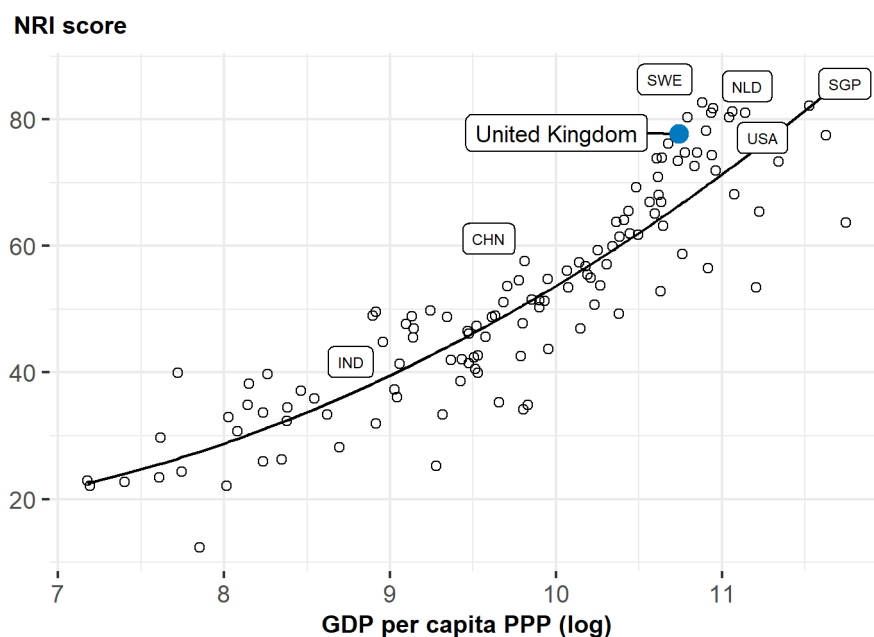
Table 1: United Kingdom rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Access	3	Regulation	10
SDG Contribution	3	Future Technologies	15
Trust	5	Businesses	15
Inclusion	5	Economy	18
Content	6	Quality of Life	18
Governments	9	Individuals	29

NRI score and income

Figure 3 shows the position of United Kingdom 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, United Kingdom 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. United Kingdom belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

Performance against its income group and region

High-income countries

United Kingdom is ranked 10th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

United Kingdom is ranked 8th within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

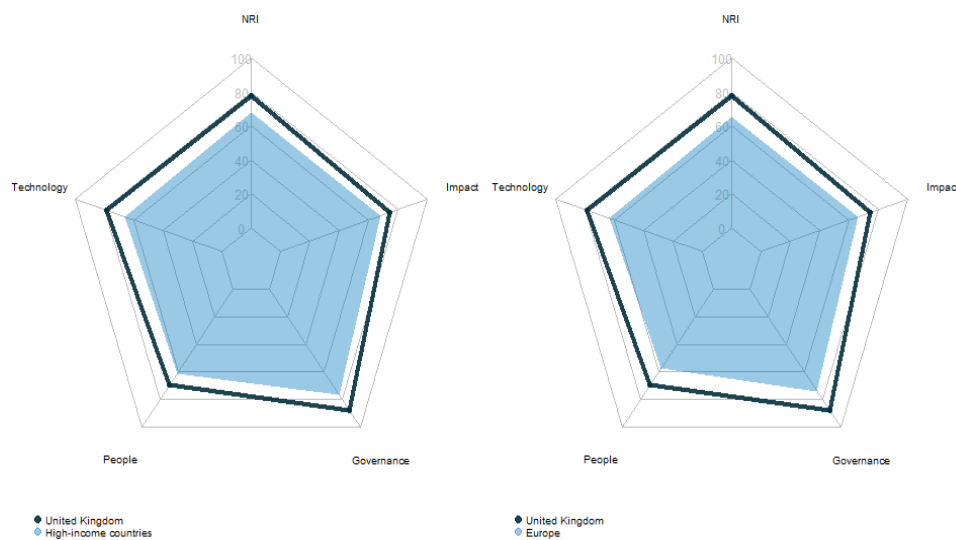


Table 2: United Kingdom scores vs. averages of its income group and region, overall and by pillar

Dimension	United Kingdom	High-income countries	Europe
NRI	77.73	68.12	65.20
Technology	78.16	66.07	63.08
People	69.81	61.07	57.50
Governance	88.32	77.07	73.99
Impact	74.62	68.29	66.24

Strongest and weakest indicators

The indicators where United Kingdom performs particularly well include Digital participation and content creation, Publication and use of open data, and Cybersecurity (Table 3). By contrast, the economy's weakest indicators include Freedom to make life choices, Tertiary enrolment, and Income inequality.

Table 3: Top-ranked and bottom-ranked indicators of United Kingdom

Strongest indicators	Rank	Weakest indicators	Rank
Digital participation and content creation	1	Healthy life expectancy at birth	23
Publication and use of open data	1	Labour productivity per employee	26
Cybersecurity	1	Online trust and safety	28
E-commerce legislation	1	Use of virtual social networks	32
Availability of local online content	1	Active mobile-broadband subscriptions	33
Use of clean fuels and technology	1	R&D expenditure by governments and higher education	34
Computer software spending	4	Technicians and associate professionals	35
Internet shopping	4	Income inequality	38
Government online services	4	Tertiary enrolment	46
International Internet bandwidth	5	Freedom to make life choices	56

NRI 2019 At-A-Glance: United Kingdom

Network Readiness Index

Rank: 10 (out of 121)

Score: 77.73

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	7	78.16	C. Governance pillar	5	88.32
1st sub-pillar: Access	3	90.31	1st sub-pillar: Trust	5	88.68
2nd sub-pillar: Content	6	81.13	2nd sub-pillar: Regulation	10	88.96
3rd sub-pillar: Future Technologies	15	63.05	3rd sub-pillar: Inclusion	5	87.31
B. People pillar	14	69.81	D. Impact pillar	13	74.62
1st sub-pillar: Individuals	29	64.10	1st sub-pillar: Economy	18	45.37
2nd sub-pillar: Businesses	15	65.84	2nd sub-pillar: Quality of Life	18	80.30
3rd sub-pillar: Governments	9	79.48	3rd sub-pillar: SDG Contribution	3	98.19

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	12	89.21	3.1.1 Rule of law	15	90.70
1.1.2 Handset prices	8	80.12	3.1.2 Software piracy rate	10	91.89
1.1.3 Internet access	13	93.59	3.1.3 Secure Internet servers	17	87.14
1.1.4 4G mobile network coverage	17	99.70	3.1.4 Cybersecurity	1	100.00
1.1.5 Fixed-broadband subscriptions	8	98.04	3.1.5 Online trust and safety	28	73.67
1.1.6 International Internet bandwidth	5	81.21	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	9	90.22
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	8	94.31
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	15	77.76
1.2.2 Mobile apps development	14	87.22	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	8	18.43	3.2.5 Social safety net protection	22	74.19
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	5	97.30
1.3.1 Availability of latest technologies	9	91.85	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	8	80.94	3.3.1 E-Participation	5	98.08
1.3.3 Government procurement of advanced technology products	23	57.31	3.3.2 Socioeconomic gap in use of digital payments	20	94.21
1.3.4 ICT PCT patent applications	17	57.63	3.3.3 Availability of local online content	1	100.00
1.3.5 Computer software spending	4	63.64	3.3.4 Gender gap in internet use	11	68.19
1.3.6 Robot density	22	26.94	3.3.5 Rural gap in use of digital payments	22	76.06
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	10	94.71	4.1.1 Medium and high-tech industry	18	58.01
2.1.2 Active mobile-broadband subscriptions	33	37.24	4.1.2 High-tech exports	14	42.81
2.1.3 Use of virtual social networks	32	66.74	4.1.3 PCT patent applications	19	26.92
2.1.4 Tertiary enrolment	46	43.58	4.1.4 Labour productivity per employee	26	53.73
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	14	78.23	4.2.1 Happiness	11	86.99
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	56	71.53
2.2.1 Firms with website	14	82.28	4.2.3 Income inequality	38	78.42
2.2.2 Internet shopping	4	95.86	4.2.4 Healthy life expectancy at birth	23	84.25
2.2.3 Professionals	9	65.98	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	35	54.81	4.3.1 Access to basic services	22	99.41
2.2.5 Extent of staff training	23	67.38	4.3.2 Pollution	17	94.59
2.2.6 R&D expenditure by businesses	18	28.70	4.3.3 Road safety	5	98.75
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	4	97.70	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	1	100.00	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	18	74.65			
2.3.4 R&D expenditure by governments and higher education	34	45.59			

* Confidential data

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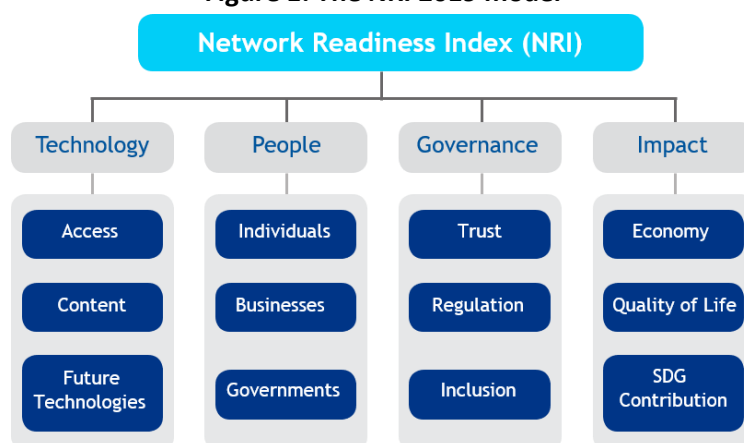
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Network Readiness Index 2019

United States

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

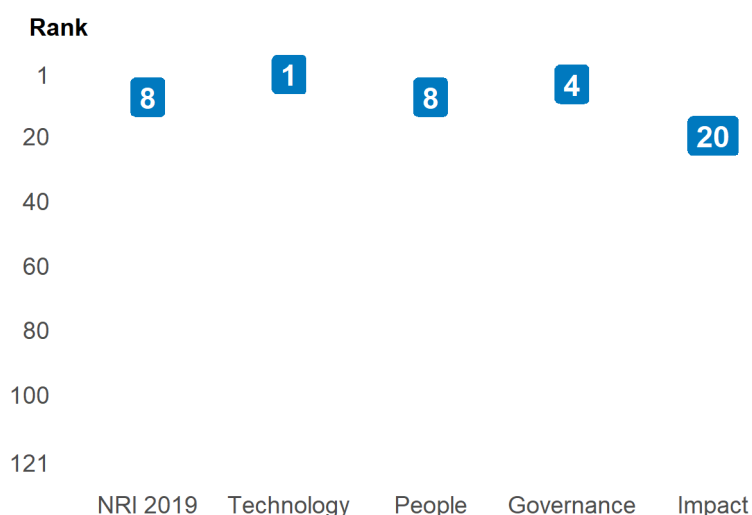
Figure 1: The NRI 2019 model



Global NRI position of United States

United States ranks 8th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: United States global ranking, overall and by pillar



Performance at sub-pillar level

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

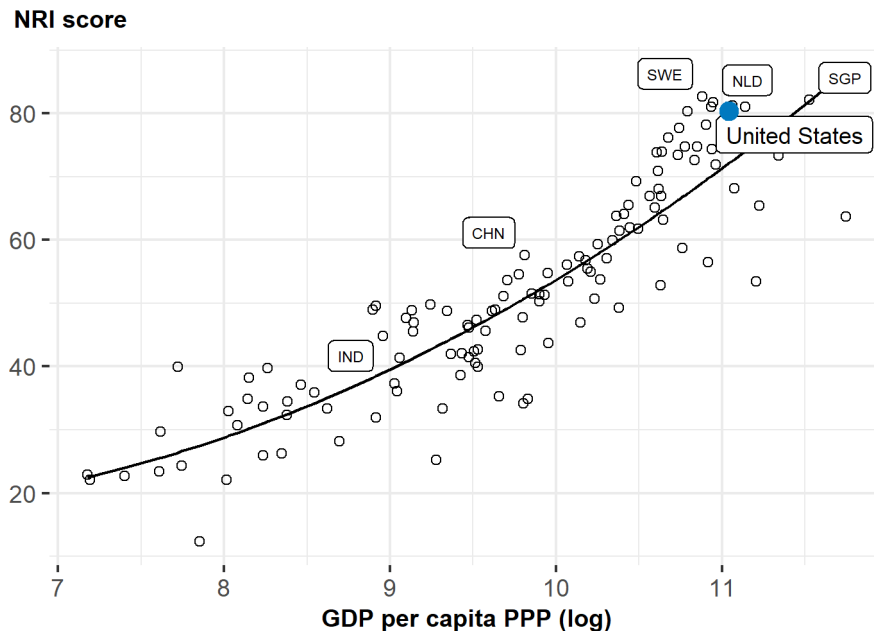
Table 1: United States rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	1	Economy	10
Regulation	1	Trust	11
Content	2	Individuals	16
Inclusion	4	Access	29
Governments	8	SDG Contribution	35
Businesses	9	Quality of Life	40

NRI score and income

Figure 3 shows the position of United States 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, United States 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). United States belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—The Americas—is United States.

Performance against its income group and region

High-income countries

United States is ranked 8th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in ten of the twelve sub-pillars: Content, Future Technology, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

The Americas

United States is ranked 1st within The Americas (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

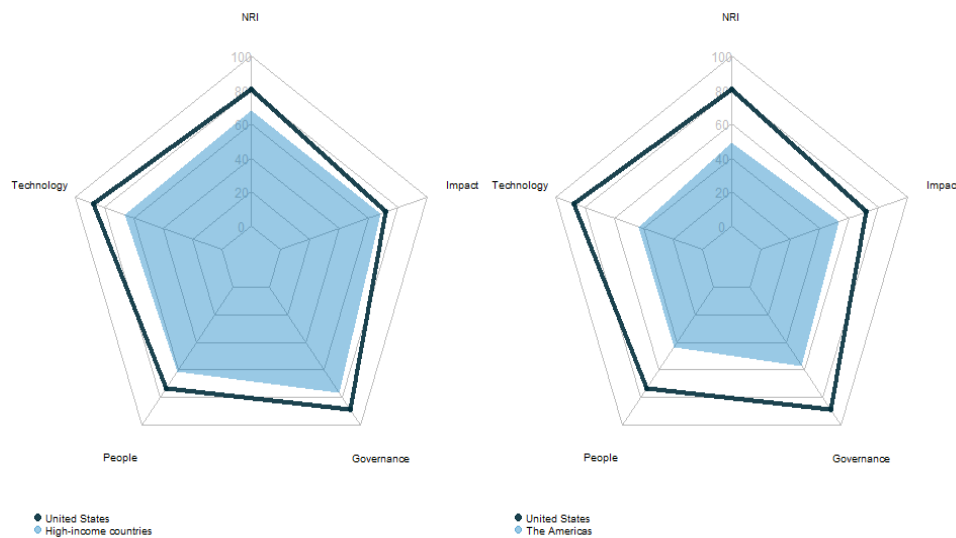


Table 2: United States scores vs. averages of its income group and region, overall and by pillar

Dimension	United States	High-income countries	The Americas
NRI	80.32	68.12	49.08
Technology	87.32	66.07	43.12
People	73.59	61.07	43.32
Governance	88.74	77.07	57.13
Impact	71.65	68.29	52.73

Strongest and weakest indicators

The indicators where United States performs particularly well include Company investment in emerging technology, Computer software spending, and Software piracy rate (Table 3). By contrast, the economy's weakest indicators include Income inequality, Mobile tariffs, and Online trust and safety.

Table 3: Top-ranked and bottom-ranked indicators of United States

Strongest indicators	Rank	Weakest indicators	Rank
Company investment in emerging technology	1	Internet access	36
Computer software spending	1	Fixed-broadband subscriptions	37
Software piracy rate	1	Healthy life expectancy at birth	37
Legal framework's adaptability to digital business models	1	Socioeconomic gap in use of digital payments	40
E-commerce legislation	1	Rural gap in use of digital payments	40
Use of clean fuels and technology	1	Road safety	51
Intellectual property receipts	2	Freedom to make life choices	61
Government procurement of advanced technology products	2	Online trust and safety	68
Extent of staff training	2	Mobile tariffs	70
Government online services	2	Income inequality	79

NRI 2019 At-A-Glance: United States

Network Readiness Index

Rank: 8 (out of 121)

Score: 80.32

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	1	87.32	C. Governance pillar	4	88.74
1st sub-pillar: Access	29	81.41	1st sub-pillar: Trust	11	85.64
2nd sub-pillar: Content	2	93.27	2nd sub-pillar: Regulation	1	93.18
3rd sub-pillar: Future Technologies	1	87.27	3rd sub-pillar: Inclusion	4	87.39
B. People pillar	8	73.59	D. Impact pillar	20	71.65
1st sub-pillar: Individuals	16	69.08	1st sub-pillar: Economy	10	55.12
2nd sub-pillar: Businesses	9	71.64	2nd sub-pillar: Quality of Life	40	69.15
3rd sub-pillar: Governments	8	80.04	3rd sub-pillar: SDG Contribution	35	90.68

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	70	60.72	3.1.1 Rule of law	19	86.48
1.1.2 Handset prices	4	85.02	3.1.2 Software piracy rate	1	100.00
1.1.3 Internet access	36	82.76	3.1.3 Secure Internet servers	6	94.65
1.1.4 4G mobile network coverage	12	99.80	3.1.4 Cybersecurity	2	99.45
1.1.5 Fixed-broadband subscriptions	37	87.49	3.1.5 Online trust and safety	68	47.64
1.1.6 International Internet bandwidth	34	72.67	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	16	86.17
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	6	95.10
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	1	100.00
1.2.2 Mobile apps development	6	93.95	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	2	77.13	3.2.5 Social safety net protection	11	88.02
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	34	89.77
1.3.1 Availability of latest technologies	6	96.12	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	1	100.00	3.3.1 E-Participation	5	98.08
1.3.3 Government procurement of advanced technology products	2	89.56	3.3.2 Socioeconomic gap in use of digital payments	40	79.64
1.3.4 ICT PCT patent applications	7	73.85	3.3.3 Availability of local online content	3	97.91
1.3.5 Computer software spending	1	100.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	8	64.06	3.3.5 Rural gap in use of digital payments	40	73.90
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	24	86.21	4.1.1 Medium and high-tech industry	16	61.01
2.1.2 Active mobile-broadband subscriptions	7	55.93	4.1.2 High-tech exports	22	35.80
2.1.3 Use of virtual social networks	27	69.85	4.1.3 PCT patent applications	11	46.73
2.1.4 Tertiary enrolment	8	64.33	4.1.4 Labour productivity per employee	7	76.94
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	21	79.68
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	61	68.55
2.2.1 Firms with website	30	70.42	4.2.3 Income inequality	79	56.58
2.2.2 Internet shopping	7	90.33	4.2.4 Healthy life expectancy at birth	37	71.79
2.2.3 Professionals	15	58.16	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	24	61.88	4.3.1 Access to basic services	20	99.50
2.2.5 Extent of staff training	2	97.05	4.3.2 Pollution	9	98.12
2.2.6 R&D expenditure by businesses	8	51.98	4.3.3 Road safety	51	69.69
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	16	96.84
2.3.1 Government online services	2	98.46	4.3.5 Maths proficiency in schools	15	79.94
2.3.2 Publication and use of open data	4	81.62	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	9	82.23			
2.3.4 R&D expenditure by governments and higher education	19	57.85			

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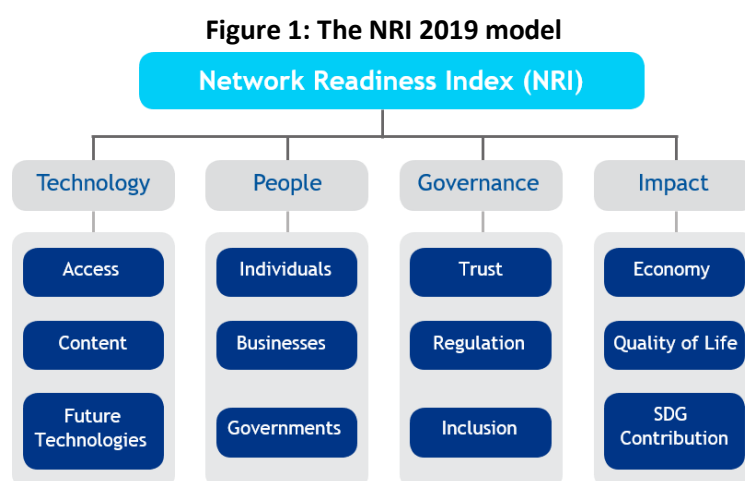
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Network Readiness Index 2019

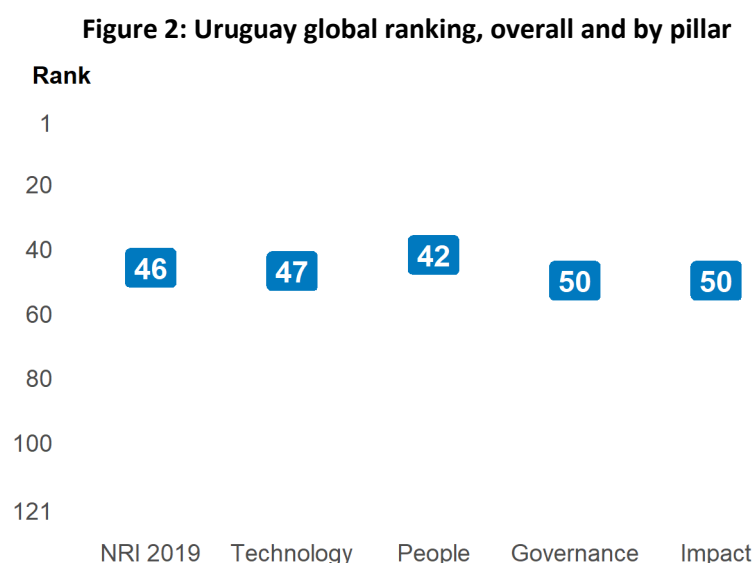
Uruguay

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Uruguay

Uruguay ranks 46th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance and Impact.



Performance at sub-pillar level

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

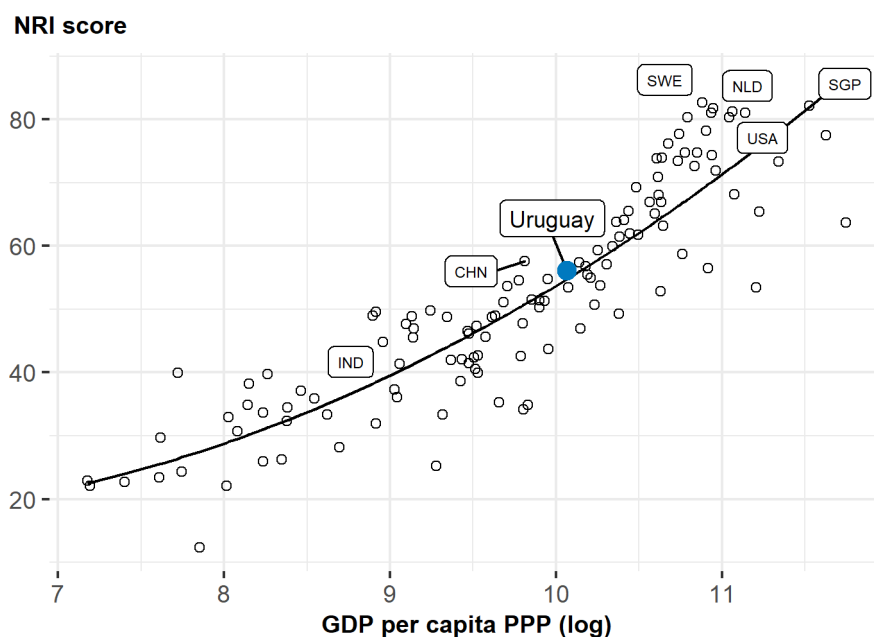
Table 1: Uruguay rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	30	Regulation	51
Governments	31	Trust	52
Quality of Life	34	Businesses	54
Content	42	Inclusion	59
Access	46	Economy	76
SDG Contribution	50	Future Technologies	83

NRI score and income

Figure 3 shows the position of Uruguay 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, Uruguay 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Uruguay belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

High-income countries

Uruguay 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.

The Americas

Uruguay is ranked 4th within The Americas (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in The Americas in ten of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

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

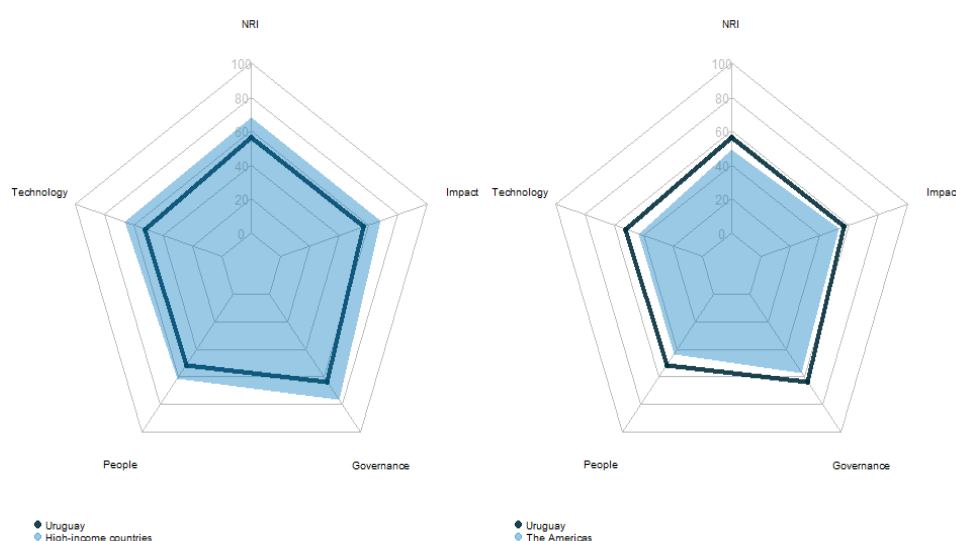


Table 2: Uruguay scores vs. averages of its income group and region, overall and by pillar

Dimension	Uruguay	High-income countries	The Americas
NRI	56.04	68.12	49.08
Technology	51.96	66.07	43.12
People	51.40	61.07	43.32
Governance	64.06	77.07	57.13
Impact	56.72	68.29	52.73

Strongest and weakest indicators

The indicators where Uruguay performs particularly well include Internet access in schools, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include ICT regulatory environment, Company investment in emerging technology, and Government procurement of advanced technology products.

Table 3: Top-ranked and bottom-ranked indicators of Uruguay

Strongest indicators	Rank	Weakest indicators	Rank
Internet access in schools	1	4G mobile network coverage	72
E-commerce legislation	1	R&D expenditure by businesses	79
Use of clean fuels and technology	1	Socioeconomic gap in use of digital payments	80
Use of virtual social networks	10	Extent of staff training	84
Pollution	12	Rural gap in use of digital payments	84
Active mobile-broadband subscriptions	16	Medium and high-tech industry	87
Publication and use of open data	17	Ease of doing business	88
Social safety net protection	20	Government procurement of advanced technology products	93
Adult literacy rate	21	Company investment in emerging technology	98
E-Participation	26	ICT regulatory environment	101

NRI 2019 At-A-Glance: Uruguay

Network Readiness Index

Rank: 46 (out of 121)

Score: 56.04

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	47	51.96	C. Governance pillar	50	64.06
1st sub-pillar: Access	46	75.43	1st sub-pillar: Trust	52	60.67
2nd sub-pillar: Content	42	54.44	2nd sub-pillar: Regulation	51	67.55
3rd sub-pillar: Future Technologies	83	26.02	3rd sub-pillar: Inclusion	59	63.97
B. People pillar	42	51.40	D. Impact pillar	50	56.72
1st sub-pillar: Individuals	30	63.83	1st sub-pillar: Economy	76	15.53
2nd sub-pillar: Businesses	54	31.79	2nd sub-pillar: Quality of Life	34	71.07
3rd sub-pillar: Governments	31	58.59	3rd sub-pillar: SDG Contribution	50	83.56

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	39	72.91	3.1.1 Rule of law	38	67.00
1.1.2 Handset prices	33	62.73	3.1.2 Software piracy rate	68	29.73
1.1.3 Internet access	70	61.61	3.1.3 Secure Internet servers	58	62.81
1.1.4 4G mobile network coverage	72	86.20	3.1.4 Cybersecurity	53	72.59
1.1.5 Fixed-broadband subscriptions	57	71.71	3.1.5 Online trust and safety	32	71.23
1.1.6 International Internet bandwidth	32	72.81	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	1	100.00	3.2.1 Regulatory quality	46	62.41
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	88	55.38
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	46	47.43
1.2.2 Mobile apps development	45	68.60	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	32	1.60	3.2.5 Social safety net protection	20	75.21
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	101	64.87
1.3.1 Availability of latest technologies	61	54.83	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	98	20.79	3.3.1 E-Participation	26	90.44
1.3.3 Government procurement of advanced technology products	93	28.24	3.3.2 Socioeconomic gap in use of digital payments	80	54.89
1.3.4 ICT PCT patent applications	51	8.06	3.3.3 Availability of local online content	57	55.32
1.3.5 Computer software spending	59	18.18	3.3.4 Gender gap in internet use	30	64.84
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	84	54.37
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	66	65.08	4.1.1 Medium and high-tech industry	87	19.30
2.1.2 Active mobile-broadband subscriptions	16	48.29	4.1.2 High-tech exports	61	13.63
2.1.3 Use of virtual social networks	10	78.17	4.1.3 PCT patent applications	57	0.81
2.1.4 Tertiary enrolment	42	45.88	4.1.4 Labour productivity per employee	55	28.39
2.1.5 Adult literacy rate	21	98.03	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	41	47.54	4.2.1 Happiness	32	69.04
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	39	80.50
2.2.1 Firms with website	39	65.55	4.2.3 Income inequality	70	61.84
2.2.2 Internet shopping	45	31.10	4.2.4 Healthy life expectancy at birth	34	72.89
2.2.3 Professionals	55	30.45	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	70	31.85	4.3.1 Access to basic services	47	97.36
2.2.5 Extent of staff training	84	31.30	4.3.2 Pollution	12	96.73
2.2.6 R&D expenditure by businesses	79	0.48	4.3.3 Road safety	54	66.56
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	34	71.79
2.3.1 Government online services	27	87.69	4.3.5 Maths proficiency in schools	26	68.89
2.3.2 Publication and use of open data	17	60.85	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	45	51.50			
2.3.4 R&D expenditure by governments and higher education	47	34.30			

* Confidential data

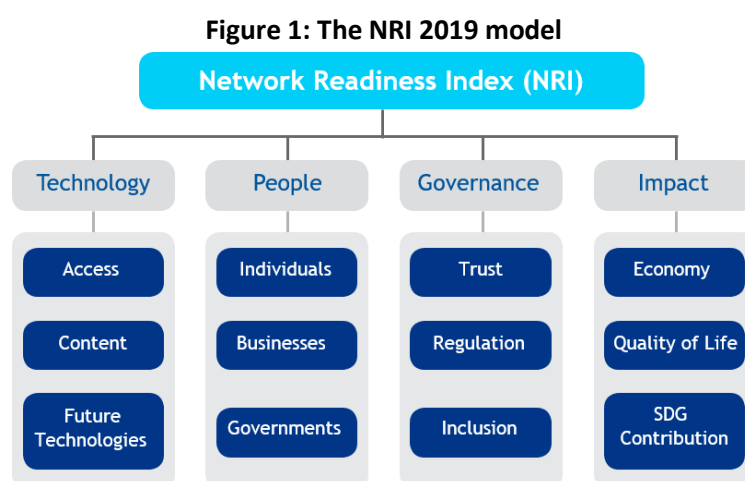
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Network Readiness Index 2019

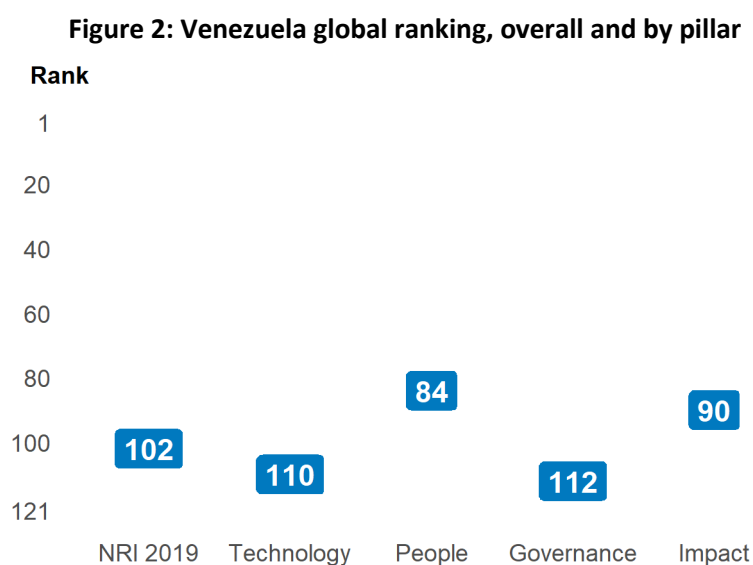
Venezuela

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Venezuela

Venezuela ranks 102nd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Governance.



Performance at sub-pillar level

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

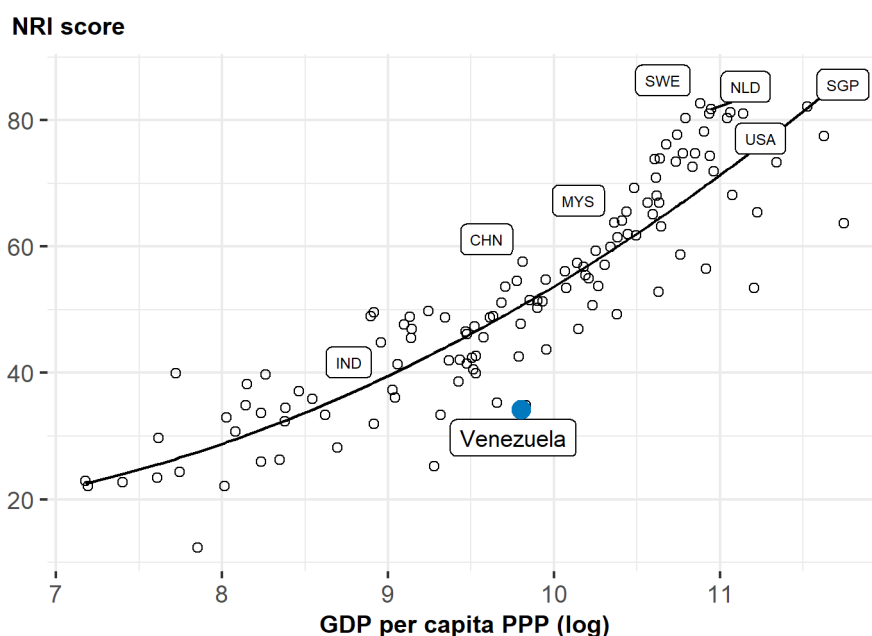
Table 1: Venezuela rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Businesses	58	Quality of Life	106
Individuals	60	Access	110
Economy	68	Trust	113
SDG Contribution	74	Governments	114
Content	77	Regulation	119
Inclusion	94	Future Technologies	120

NRI score and income

Figure 3 shows the position of Venezuela 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, Venezuela 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Venezuela belongs to the group of upper-middle-income countries, where the best performer is Malaysia (MYS). The top performer of its region—The Americas—is United States (USA).

Performance against its income group and region

Upper-middle-income countries

Venezuela is ranked 36th in the group of upper-middle-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 outperforms upper-middle-income countries in three of the twelve sub-pillars: Individuals, Businesses and Economy.

The Americas

Venezuela is ranked 20th 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 one of the twelve sub-pillars: Individuals.

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



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

Dimension	Venezuela	Upper-middle-income countries	The Americas
NRI	34.14	47.40	49.08
Technology	22.87	42.66	43.12
People	35.34	41.07	43.32
Governance	34.88	56.24	57.13
Impact	43.49	49.62	52.73

Strongest and weakest indicators

The indicators where Venezuela performs particularly well include Use of clean fuels and technology, Tertiary enrolment, and Adult literacy rate (Table 3). By contrast, the economy's weakest indicators include Mobile tariffs, Rule of law, and Regulatory quality.

Table 3: Top-ranked and bottom-ranked indicators of Venezuela

Strongest indicators	Rank	Weakest indicators	Rank
Use of clean fuels and technology	1	Company investment in emerging technology	117
Tertiary enrolment	20	Social safety net protection	117
Adult literacy rate	36	Availability of latest technologies	118
Medium and high-tech industry	41	Road safety	118
Professionals	43	Government procurement of advanced technology products	119
Pollution	46	Handset prices	120
Rural gap in use of digital payments	50	Ease of doing business	120
Internet users	59	Mobile tariffs	121
Online trust and safety	60	Rule of law	121
Access to basic services	63	Regulatory quality	121

NRI 2019 At-A-Glance: Venezuela

Network Readiness Index

Rank: 102 (out of 121)

Score: 34.14

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	110	22.87	C. Governance pillar	112	34.88
1st sub-pillar: Access	110	29.74	1st sub-pillar: Trust	113	28.01
2nd sub-pillar: Content	77	36.28	2nd sub-pillar: Regulation	119	27.39
3rd sub-pillar: Future Technologies	120	2.58	3rd sub-pillar: Inclusion	94	49.24
B. People pillar	84	35.34	D. Impact pillar	90	43.49
1st sub-pillar: Individuals	60	56.23	1st sub-pillar: Economy	68	18.36
2nd sub-pillar: Businesses	58	30.50	2nd sub-pillar: Quality of Life	106	40.88
3rd sub-pillar: Governments	114	19.28	3rd sub-pillar: SDG Contribution	74	71.23

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	121	0.00	3.1.1 Rule of law	121	0.00
1.1.2 Handset prices	120	0.00	3.1.2 Software piracy rate	100	0.00
1.1.3 Internet access	90	29.06	3.1.3 Secure Internet servers	78	47.93
1.1.4 4G mobile network coverage	76	82.00	3.1.4 Cybersecurity	97	36.73
1.1.5 Fixed-broadband subscriptions	99	5.96	3.1.5 Online trust and safety	60	55.40
1.1.6 International Internet bandwidth	97	61.42	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	121	0.00
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	120	0.00
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	114	0.00
1.2.2 Mobile apps development	101	37.79	3.2.4 E-commerce legislation	66	75.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	117	6.51
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	68	82.82
1.3.1 Availability of latest technologies	118	9.62	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	117	3.23	3.3.1 E-Participation	105	32.48
1.3.3 Government procurement of advanced technology products	119	0.00	3.3.2 Socioeconomic gap in use of digital payments	73	60.92
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	95	33.04
1.3.5 Computer software spending	NA	NA	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	69	0.03	3.3.5 Rural gap in use of digital payments	50	70.54
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	59	69.22	4.1.1 Medium and high-tech industry	41	43.69
2.1.2 Active mobile-broadband subscriptions	91	19.89	4.1.2 High-tech exports	NA	NA
2.1.3 Use of virtual social networks	87	38.67	4.1.3 PCT patent applications	82	0.03
2.1.4 Tertiary enrolment	20	57.80	4.1.4 Labour productivity per employee	83	11.36
2.1.5 Adult literacy rate	36	95.59	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	91	40.58
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	112	19.04
2.2.1 Firms with website	67	42.71	4.2.3 Income inequality	NA	NA
2.2.2 Internet shopping	65	16.52	4.2.4 Healthy life expectancy at birth	66	63.00
2.2.3 Professionals	43	38.25	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	NA	NA	4.3.1 Access to basic services	63	93.18
2.2.5 Extent of staff training	105	24.51	4.3.2 Pollution	46	88.61
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	118	3.12
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	108	34.61	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	84	11.62	4.3.6 Use of clean fuels and technology	1	100.00
2.3.3 ICT use and government efficiency	107	11.59			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

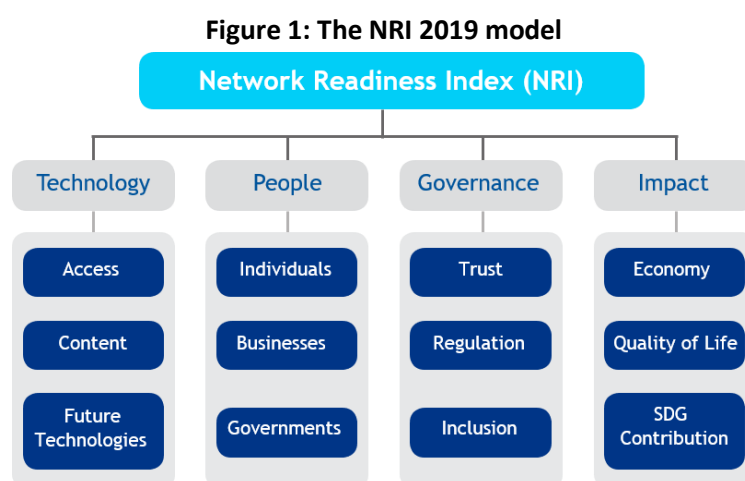
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Network Readiness Index 2019

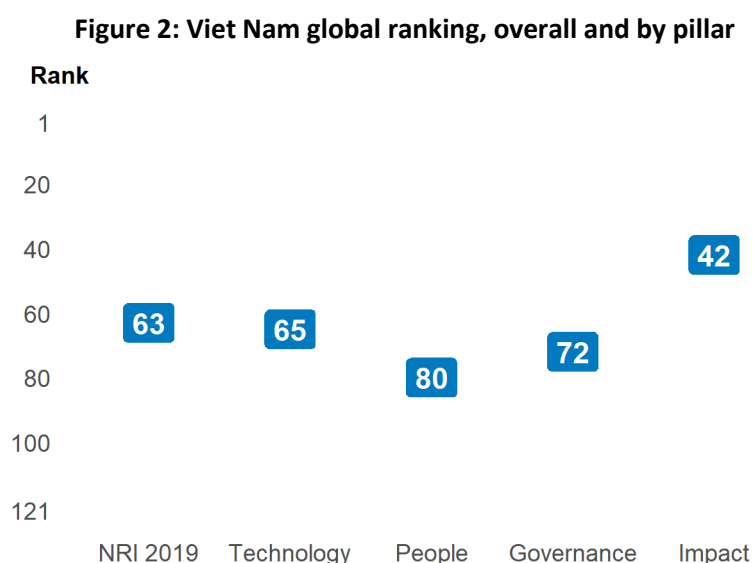
Viet Nam

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Viet Nam

Viet Nam ranks 63rd out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Viet Nam relate to Economy, Quality of Life and Trust, among others (Table 1). More could be done, though, to improve the economy's performances in the Businesses, Governments and Inclusion sub-pillars.

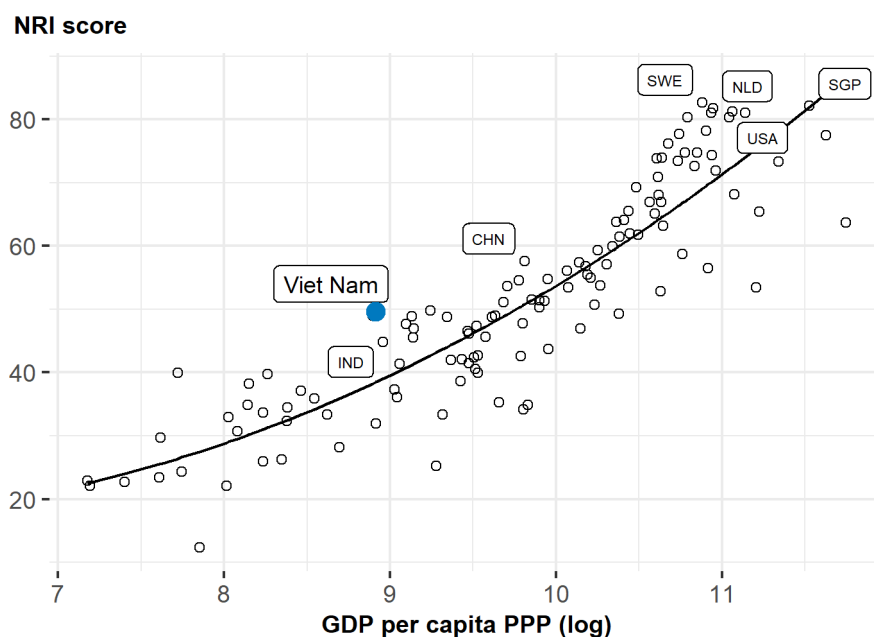
Table 1: Viet Nam rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	20	Regulation	73
Quality of Life	41	Content	76
Trust	48	SDG Contribution	83
Access	60	Businesses	86
Future Technologies	66	Governments	89
Individuals	67	Inclusion	97

NRI score and income

Figure 3 shows the position of Viet Nam 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, Viet Nam 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Viet Nam belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Asia & Pacific—is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries

Viet Nam is ranked 1st 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 each of the four pillars. At the sub-pillar level, it has a higher score than the average of lower-middle-income countries in all of them.

Asia & Pacific

Viet Nam is ranked 10th within Asia & Pacific (Figure 4, right panel). It has a score above the regional average in one of the four pillars: Impact. With regard to sub-pillars, it outperforms the average in Asia & Pacific in five of the twelve sub-pillars: Access, Individuals, Trust, Economy and Quality of Life.

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

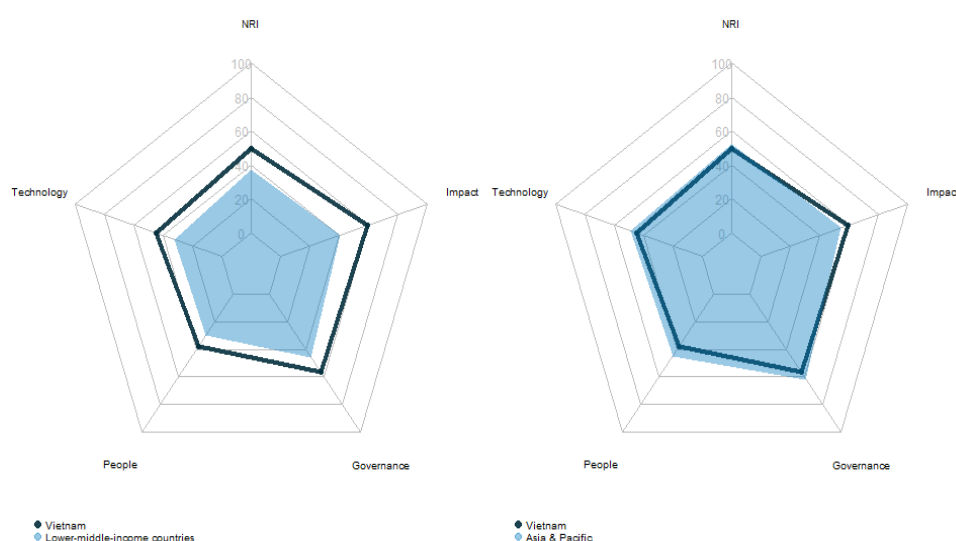


Table 2: Viet Nam scores vs. averages of its income group and region, overall and by pillar

Dimension	Viet Nam	Lower-middle-income countries	Asia & Pacific
NRI	49.57	37.18	52.44
Technology	44.79	32.15	48.56
People	37.69	30.04	44.85
Governance	56.60	46.17	61.84
Impact	59.20	40.35	54.50

Strongest and weakest indicators

The indicators where Viet Nam performs particularly well include Online trust and safety, E-commerce legislation, and High-tech exports (Table 3). By contrast, the economy's weakest indicators include Socioeconomic gap in use of digital payments, Availability of latest technologies, and Road safety.

Table 3: Top-ranked and bottom-ranked indicators of Viet Nam

Strongest indicators	Rank	Weakest indicators	Rank
Online trust and safety	1	R&D expenditure by governments and higher education	85
E-commerce legislation	1	Pollution	89
High-tech exports	4	Labour productivity per employee	92
Fixed-broadband subscriptions	13	Regulatory quality	94
Freedom to make life choices	23	Technicians and associate professionals	99
Computer software spending	30	ICT regulatory environment	103
Government procurement of advanced technology products	35	Rural gap in use of digital payments	103
Medium and high-tech industry	35	Availability of latest technologies	104
Use of virtual social networks	41	Road safety	104
Robot density	42	Socioeconomic gap in use of digital payments	109

NRI 2019 At-A-Glance: Viet Nam

Network Readiness Index

Rank: 63 (out of 121)

Score: 49.57

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	65	44.79	C. Governance pillar	72	56.60
1st sub-pillar: Access	60	68.57	1st sub-pillar: Trust	48	62.25
2nd sub-pillar: Content	76	36.41	2nd sub-pillar: Regulation	73	61.16
3rd sub-pillar: Future Technologies	66	29.39	3rd sub-pillar: Inclusion	97	46.38
B. People pillar	80	37.69	D. Impact pillar	42	59.20
1st sub-pillar: Individuals	67	54.14	1st sub-pillar: Economy	20	44.45
2nd sub-pillar: Businesses	86	23.03	2nd sub-pillar: Quality of Life	41	68.95
3rd sub-pillar: Governments	89	35.90	3rd sub-pillar: SDG Contribution	83	64.20

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	51	69.30	3.1.1 Rule of law	61	53.26
1.1.2 Handset prices	80	38.84	3.1.2 Software piracy rate	74	20.27
1.1.3 Internet access	81	43.52	3.1.3 Secure Internet servers	56	63.80
1.1.4 4G mobile network coverage	56	93.89	3.1.4 Cybersecurity	52	73.90
1.1.5 Fixed-broadband subscriptions	13	96.44	3.1.5 Online trust and safety	1	100.00
1.1.6 International Internet bandwidth	57	69.41	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	94	42.92
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	63	69.93
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	49	47.16
1.2.2 Mobile apps development	57	63.72	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	NA	NA	3.2.5 Social safety net protection	63	43.22
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	103	63.71
1.3.1 Availability of latest technologies	104	32.00	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	67	33.37	3.3.1 E-Participation	69	64.97
1.3.3 Government procurement of advanced technology products	35	49.94	3.3.2 Socioeconomic gap in use of digital payments	109	33.44
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	75	44.86
1.3.5 Computer software spending	30	27.27	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	42	4.36	3.3.5 Rural gap in use of digital payments	103	42.27
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	63	67.39	4.1.1 Medium and high-tech industry	35	48.17
2.1.2 Active mobile-broadband subscriptions	71	27.00	4.1.2 High-tech exports	4	78.47
2.1.3 Use of virtual social networks	41	63.62	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	82	20.42	4.1.4 Labour productivity per employee	92	6.72
2.1.5 Adult literacy rate	50	92.29	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	78	46.62
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	23	88.15
2.2.1 Firms with website	70	38.94	4.2.3 Income inequality	48	72.89
2.2.2 Internet shopping	53	24.00	4.2.4 Healthy life expectancy at birth	46	68.13
2.2.3 Professionals	85	16.91	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	99	14.02	4.3.1 Access to basic services	84	85.64
2.2.5 Extent of staff training	73	34.54	4.3.2 Pollution	89	73.00
2.2.6 R&D expenditure by businesses	42	9.76	4.3.3 Road safety	104	25.94
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	57	70.77	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	77	16.79	4.3.6 Use of clean fuels and technology	84	72.22
2.3.3 ICT use and government efficiency	60	44.41			
2.3.4 R&D expenditure by governments and higher education	85	11.64			

* Confidential data

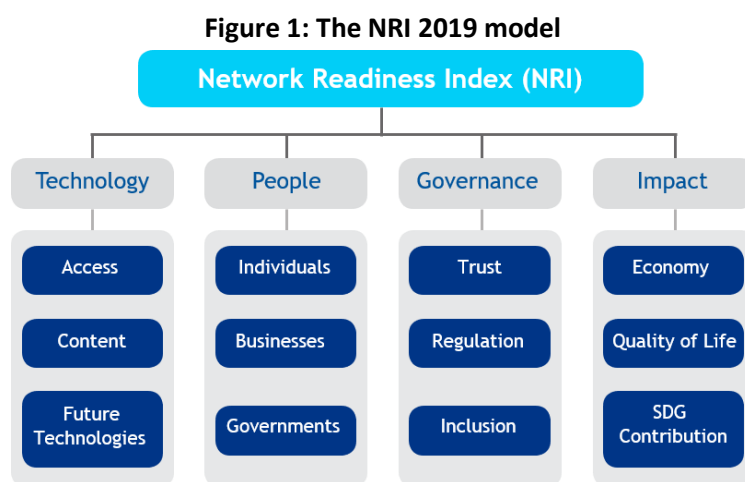
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Network Readiness Index 2019

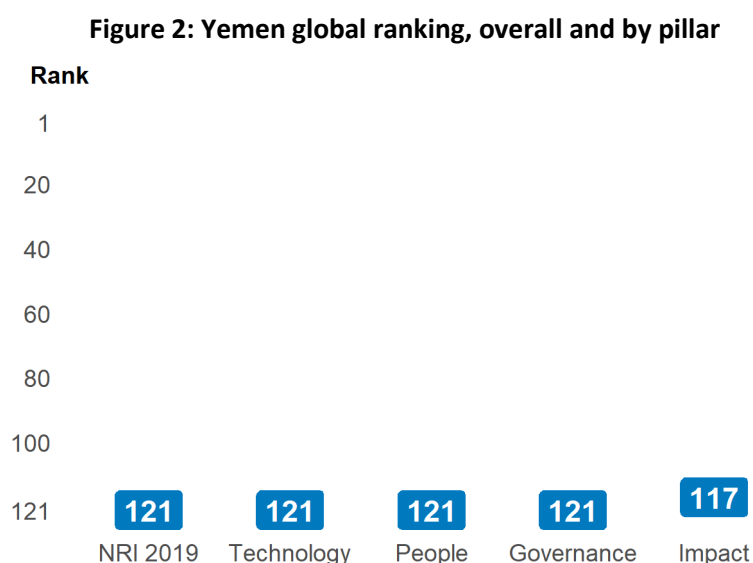
Yemen

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.



Global NRI position of Yemen

Yemen ranks 121st out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. It is the bottom-ranked country in the other three pillars: Technology, People and Governance.



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Yemen relate to SDG Contribution and Economy (Table 1). However, in most sub-pillars it is one of the worst performers. Indeed, Yemen is ranked at the bottom in half of the twelve sub-pillars.

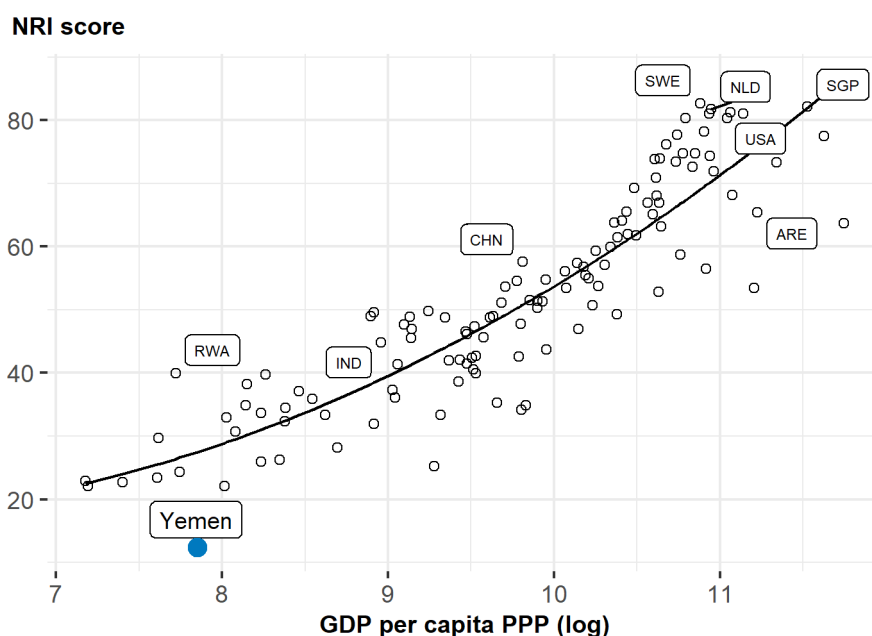
Table 1: Yemen rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	106	Access	121
Economy	107	Governments	121
Content	117	Trust	121
Future Technologies	119	Regulation	121
Individuals	120	Inclusion	121
Businesses	120	Quality of Life	121

NRI score and income

Figure 3 shows the position of Yemen 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, Yemen 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Yemen belongs to the group of low-income countries, where the best performer is Rwanda (RWA). The top performer of its region—Arab States—is United Arab Emirates (ARE).

Performance against its income group and region

Low-income countries

Yemen is ranked 11th in the group of low-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 outperforms low-income countries in one of the twelve sub-pillars: SDG Contribution.

Arab States

Yemen is ranked 13th within Arab States (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 Yemen against its income group and region, overall and by pillar



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

Dimension	Yemen	Low-income countries	Arab States
NRI	12.33	26.91	46.82
Technology	8.33	20.09	43.54
People	5.48	18.24	41.30
Governance	10.79	41.33	54.28
Impact	24.74	27.97	48.18

Strongest and weakest indicators

The indicators where Yemen performs particularly well include Intellectual property receipts, High-tech exports, and Income inequality (Table 3). By contrast, the economy's weakest indicators include Internet access, Active mobile-broadband subscriptions, ICT regulatory environment, and Happiness.

Table 3: Top-ranked and bottom-ranked indicators of Yemen

Strongest indicators	Rank	Weakest indicators	Rank
Intellectual property receipts	33	4G mobile network coverage	120
High-tech exports	57	Government online services	120
Income inequality	59	Rule of law	120
Maths proficiency in schools	74	Secure Internet servers	120
Professionals	84	Cybersecurity	120
Use of clean fuels and technology	88	E-Participation	120
Road safety	90	Internet access	121
Labour productivity per employee	95	Active mobile-broadband subscriptions	121
Computer software spending	97	ICT regulatory environment	121
Technicians and associate professionals	98	Happiness	121

NRI 2019 At-A-Glance: Yemen

Network Readiness Index

Rank: 121 (out of 121)

Score: 12.33

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	121	8.33	C. Governance pillar	121	10.79
1st sub-pillar: Access	121	12.00	1st sub-pillar: Trust	121	6.00
2nd sub-pillar: Content	117	7.59	2nd sub-pillar: Regulation	121	14.06
3rd sub-pillar: Future Technologies	119	5.41	3rd sub-pillar: Inclusion	121	12.30
B. People pillar	121	5.48	D. Impact pillar	117	24.74
1st sub-pillar: Individuals	120	7.75	1st sub-pillar: Economy	107	7.77
2nd sub-pillar: Businesses	120	8.69	2nd sub-pillar: Quality of Life	121	24.38
3rd sub-pillar: Governments	121	0.00	3rd sub-pillar: SDG Contribution	106	42.06

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	120	0.33	3.1.1 Rule of law	120	12.50
1.1.2 Handset prices	111	19.34	3.1.2 Software piracy rate	99	1.35
1.1.3 Internet access	121	0.00	3.1.3 Secure Internet servers	120	10.16
1.1.4 4G mobile network coverage	120	0.00	3.1.4 Cybersecurity	120	0.00
1.1.5 Fixed-broadband subscriptions	113	0.00	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	112	52.33	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	119	17.58
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	119	2.70
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	NA	NA
1.2.2 Mobile apps development	115	17.42	3.2.4 E-commerce legislation	100	50.00
1.2.3 Intellectual property receipts	33	1.30	3.2.5 Social safety net protection	119	0.00
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	121	0.00
1.3.1 Availability of latest technologies	119	0.00	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	118	0.00	3.3.1 E-Participation	120	0.00
1.3.3 Government procurement of advanced technology products	110	21.65	3.3.2 Socioeconomic gap in use of digital payments	117	0.00
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	110	10.80
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	NA	NA
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	107	38.40
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	105	18.83	4.1.1 Medium and high-tech industry	116	2.31
2.1.2 Active mobile-broadband subscriptions	121	0.00	4.1.2 High-tech exports	57	15.18
2.1.3 Use of virtual social networks	115	5.30	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	103	6.87	4.1.4 Labour productivity per employee	95	5.81
2.1.5 Adult literacy rate	NA	NA	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	121	0.00
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	119	5.58
2.2.1 Firms with website	107	3.12	4.2.3 Income inequality	59	69.21
2.2.2 Internet shopping	NA	NA	4.2.4 Healthy life expectancy at birth	112	22.71
2.2.3 Professionals	84	17.30	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	98	14.34	4.3.1 Access to basic services	107	48.90
2.2.5 Extent of staff training	119	0.00	4.3.2 Pollution	107	55.72
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	90	41.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	120	0.00	4.3.5 Maths proficiency in schools	74	0.00
2.3.2 Publication and use of open data	102	0.00	4.3.6 Use of clean fuels and technology	88	64.44
2.3.3 ICT use and government efficiency	109	0.00			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

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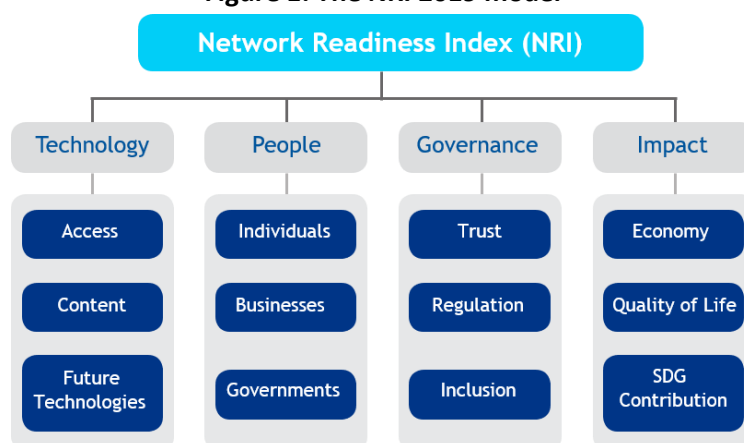
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Network Readiness Index 2019

Zambia

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

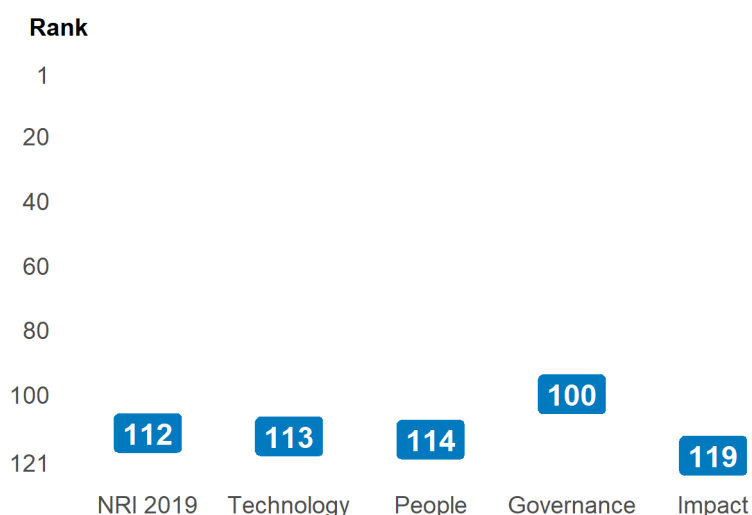
Figure 1: The NRI 2019 model



Global NRI position of Zambia

Zambia ranks 112th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Zambia global ranking, overall and by pillar



Performance at sub-pillar level

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

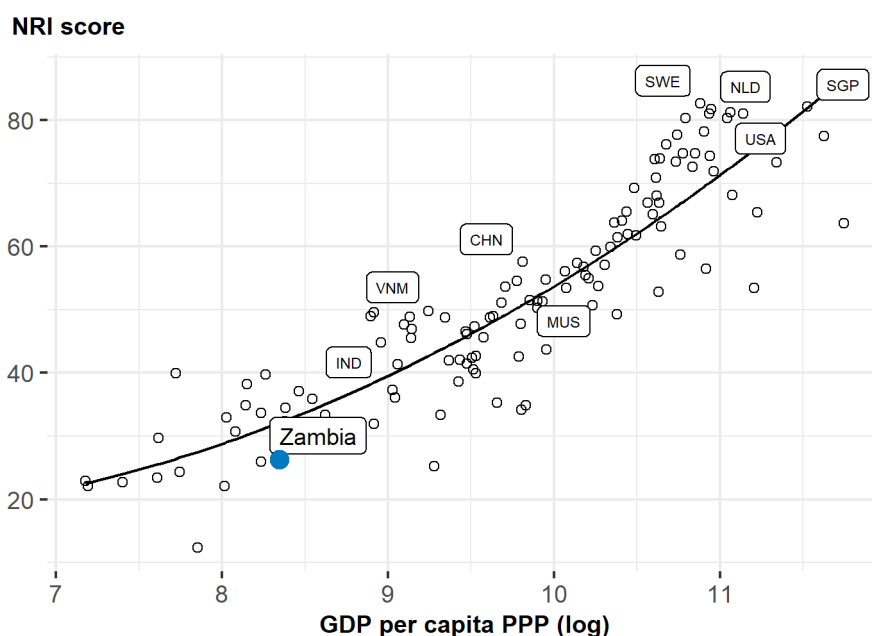
Table 1: Zambia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	83	Inclusion	111
Future Technologies	84	Access	112
Regulation	84	Businesses	112
Trust	95	Quality of Life	117
Individuals	105	SDG Contribution	119
Governments	110	Content	120

NRI score and income

Figure 3 shows the position of Zambia 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, Zambia 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Zambia belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries

Zambia is ranked 22nd in the group of lower-middle-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 outperforms lower-middle-income countries in one of the twelve sub-pillars: Regulation.

Africa

Zambia is ranked 12th within Africa (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 Africa in two of the twelve sub-pillars: Regulation and Economy.

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

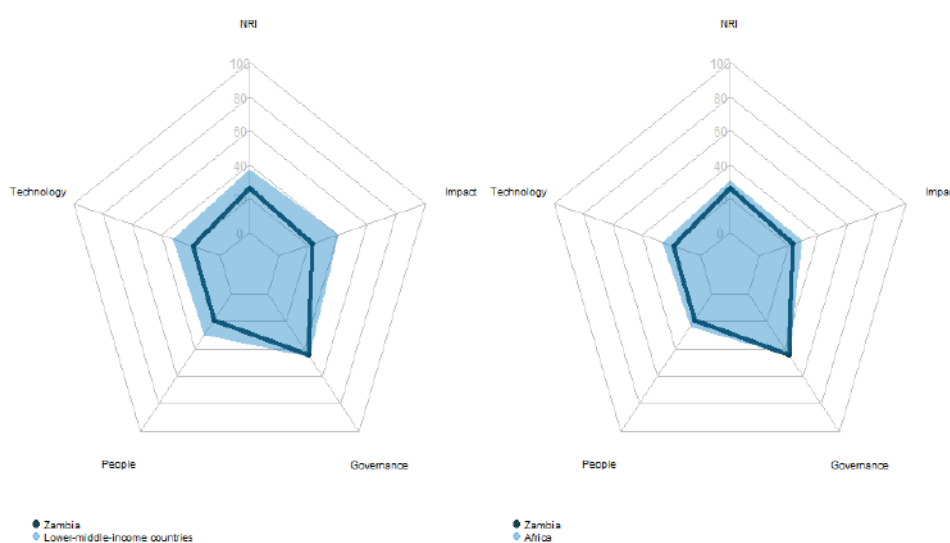


Table 2: Zambia scores vs. averages of its income group and region, overall and by pillar

Dimension	Zambia	Lower-middle-income countries	Africa
NRI	26.20	37.18	31.07
Technology	18.87	32.15	26.03
People	18.99	30.04	23.76
Governance	44.52	46.17	45.32
Impact	22.43	40.35	29.15

Strongest and weakest indicators

The indicators where Zambia performs particularly well include E-commerce legislation, Online trust and safety, and Government procurement of advanced technology products (Table 3). By contrast, the economy's weakest indicators include Digital participation and content creation, Mobile apps development, Internet users, and Access to basic services.

Table 3: Top-ranked and bottom-ranked indicators of Zambia

Strongest indicators	Rank	Weakest indicators	Rank
E-commerce legislation	1	Use of virtual social networks	109
Online trust and safety	47	Firms with website	109
Government procurement of advanced technology products	49	Availability of local online content	111
Internet access in schools	62	Tertiary enrolment	113
Adult literacy rate	70	Happiness	113
Maths proficiency in schools	72	Healthy life expectancy at birth	115
Medium and high-tech industry	74	Internet users	117
Freedom to make life choices	74	Access to basic services	117
Reading proficiency in schools	74	Mobile apps development	119
Professionals	75	Digital participation and content creation	120

NRI 2019 At-A-Glance: Zambia

Network Readiness Index

Rank: 112 (out of 121)

Score: 26.20

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	113	18.87	C. Governance pillar	100	44.52
1st sub-pillar: Access	112	27.43	1st sub-pillar: Trust	95	40.18
2nd sub-pillar: Content	120	3.25	2nd sub-pillar: Regulation	84	56.99
3rd sub-pillar: Future Technologies	84	25.92	3rd sub-pillar: Inclusion	111	36.40
B. People pillar	114	18.99	D. Impact pillar	119	22.43
1st sub-pillar: Individuals	105	23.45	1st sub-pillar: Economy	83	12.50
2nd sub-pillar: Businesses	112	11.69	2nd sub-pillar: Quality of Life	117	29.12
3rd sub-pillar: Governments	110	21.84	3rd sub-pillar: SDG Contribution	119	25.68

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	107	35.21	3.1.1 Rule of law	81	45.47
1.1.2 Handset prices	99	29.32	3.1.2 Software piracy rate	83	12.16
1.1.3 Internet access	109	12.19	3.1.3 Secure Internet servers	106	31.63
1.1.4 4G mobile network coverage	102	43.41	3.1.4 Cybersecurity	87	45.72
1.1.5 Fixed-broadband subscriptions	97	6.65	3.1.5 Online trust and safety	47	65.91
1.1.6 International Internet bandwidth	102	59.83	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	62	5.43	3.2.1 Regulatory quality	96	41.67
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	78	64.92
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	86	33.88
1.2.2 Mobile apps development	119	10.70	3.2.4 E-commerce legislation	1	100.00
1.2.3 Intellectual property receipts	98	0.00	3.2.5 Social safety net protection	85	31.21
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	92	70.28
1.3.1 Availability of latest technologies	102	32.42	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	86	25.58	3.3.1 E-Participation	106	31.85
1.3.3 Government procurement of advanced technology products	49	45.68	3.3.2 Socioeconomic gap in use of digital payments	88	49.51
1.3.4 ICT PCT patent applications	NA	NA	3.3.3 Availability of local online content	111	6.96
1.3.5 Computer software spending	97	0.00	3.3.4 Gender gap in internet use	77	40.88
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	90	52.80
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	117	5.01	4.1.1 Medium and high-tech industry	74	26.74
2.1.2 Active mobile-broadband subscriptions	87	20.75	4.1.2 High-tech exports	98	3.78
2.1.3 Use of virtual social networks	109	9.56	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrolment	113	2.42	4.1.4 Labour productivity per employee	91	6.97
2.1.5 Adult literacy rate	70	79.49	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	NA	NA	4.2.1 Happiness	113	20.50
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	74	60.68
2.2.1 Firms with website	109	2.21	4.2.3 Income inequality	105	15.53
2.2.2 Internet shopping	84	6.50	4.2.4 Healthy life expectancy at birth	115	19.78
2.2.3 Professionals	75	18.82	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	97	14.83	4.3.1 Access to basic services	117	25.03
2.2.5 Extent of staff training	97	27.68	4.3.2 Pollution	83	78.59
2.2.6 R&D expenditure by businesses	85	0.14	4.3.3 Road safety	101	31.25
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	74	0.00
2.3.1 Government online services	101	42.31	4.3.5 Maths proficiency in schools	72	6.99
2.3.2 Publication and use of open data	96	3.82	4.3.6 Use of clean fuels and technology	108	12.22
2.3.3 ICT use and government efficiency	78	37.58			
2.3.4 R&D expenditure by governments and higher education	102	3.63			

* Confidential data

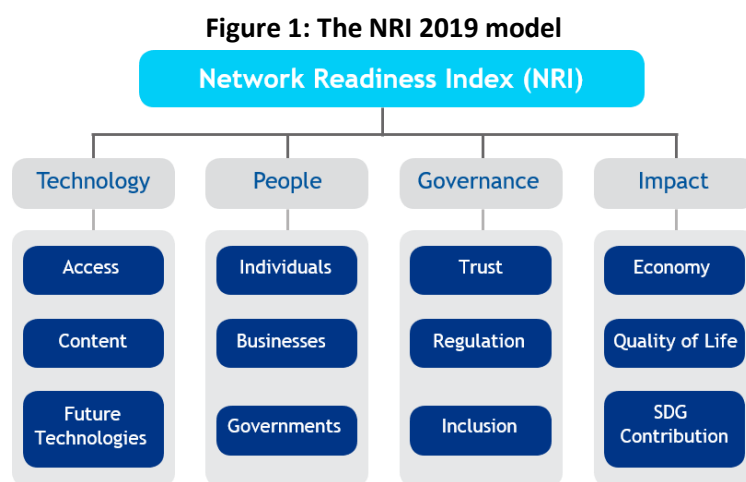
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Network Readiness Index 2019

Zimbabwe

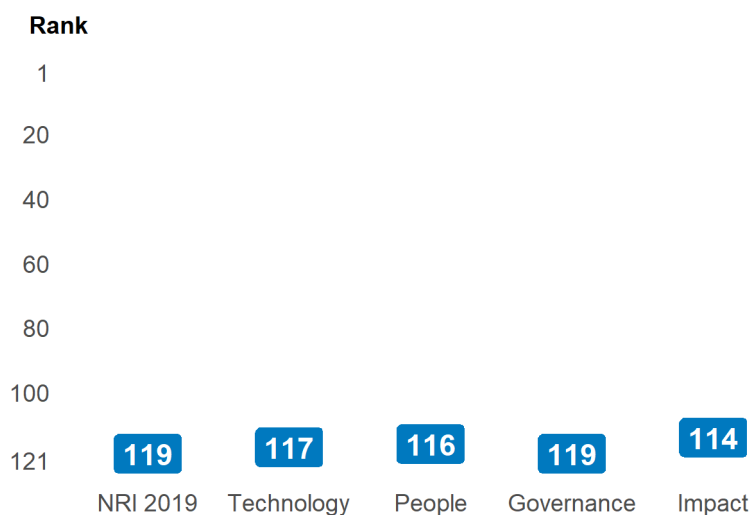
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their 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 62 variables.



Global NRI position of Zimbabwe

Zimbabwe ranks 119th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Zimbabwe global ranking, overall and by pillar



Performance at sub-pillar level

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

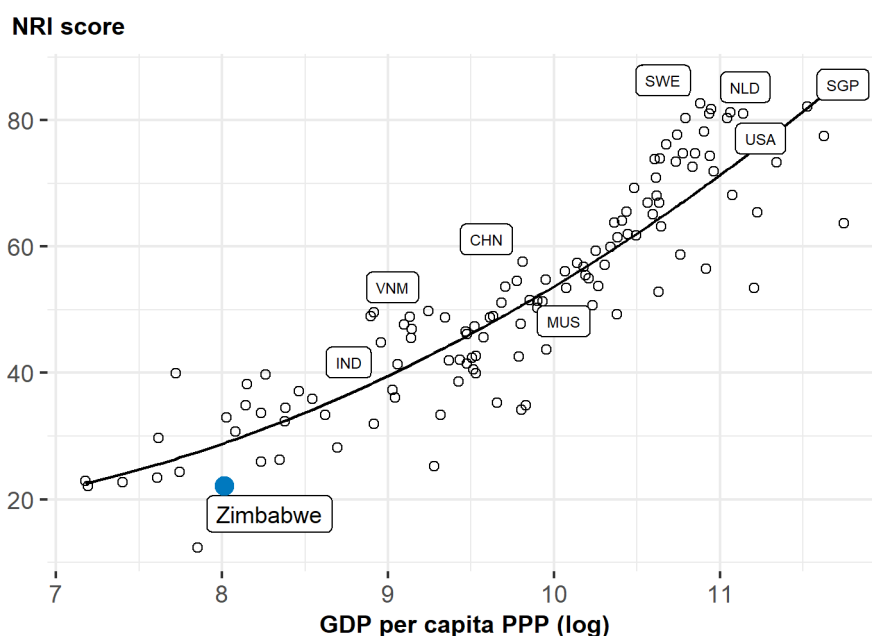
Table 1: Zimbabwe rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	103	Inclusion	114
Businesses	105	Quality of Life	114
Content	106	Access	115
Individuals	108	Regulation	117
SDG Contribution	110	Governments	120
Future Technologies	114	Trust	120

NRI score and income

Figure 3 shows the position of Zimbabwe 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, Zimbabwe 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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Zimbabwe belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region—Africa—is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries

Zimbabwe is ranked 25th in the group of lower-middle-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 lower-middle-income countries in all of them.

Africa

Zimbabwe is ranked 19th within Africa (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 Zimbabwe against its income group and region, overall and by pillar

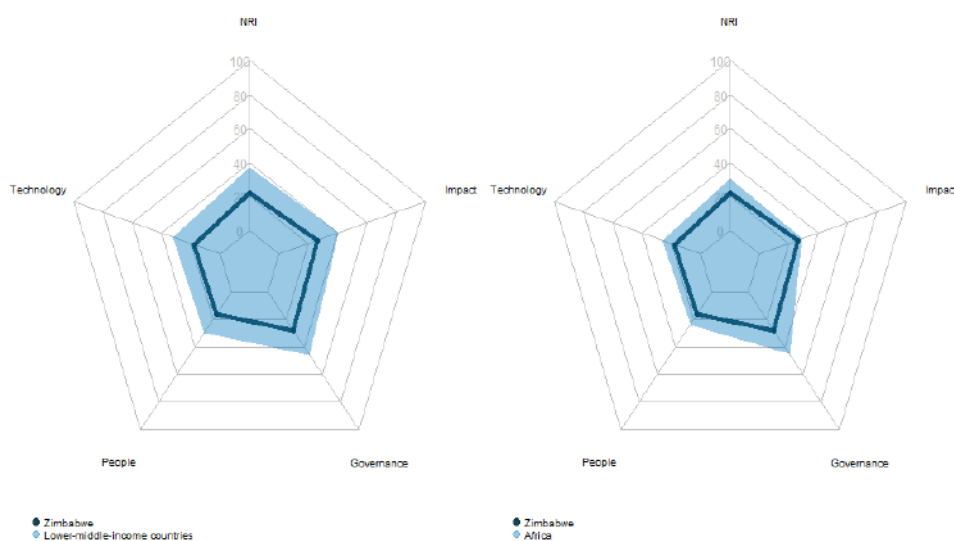


Table 2: Zimbabwe scores vs. averages of its income group and region, overall and by pillar

Dimension	Zimbabwe	Lower-middle-income countries	Africa
NRI	22.09	37.18	31.07
Technology	17.76	32.15	26.03
People	16.37	30.04	23.76
Governance	27.84	46.17	45.32
Impact	26.39	40.35	29.15

Strongest and weakest indicators

The indicators where Zimbabwe performs particularly well include Computer software spending, ICT skills, and Pollution (Table 3). By contrast, the economy's weakest indicators include Handset prices, Regulatory quality, and Road safety.

Table 3: Top-ranked and bottom-ranked indicators of Zimbabwe

Strongest indicators	Rank	Weakest indicators	Rank
Computer software spending	21	Mobile tariffs	115
ICT skills	62	Company investment in emerging technology	115
Pollution	62	Use of virtual social networks	116
Adult literacy rate	63	Social safety net protection	116
Socioeconomic gap in use of digital payments	66	Happiness	116
Medium and high-tech industry	71	Government procurement of advanced technology products	118
Intellectual property receipts	73	Rule of law	118
Extent of staff training	78	Handset prices	120
ICT PCT patent applications	80	Regulatory quality	120
Gender gap in internet use	80	Road safety	120

NRI 2019 At-A-Glance: Zimbabwe

Network Readiness Index

Rank: 119 (out of 121)

Score: 22.09

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	117	17.76	C. Governance pillar	119	27.84
1st sub-pillar: Access	115	23.02	1st sub-pillar: Trust	120	18.82
2nd sub-pillar: Content	106	15.16	2nd sub-pillar: Regulation	117	31.10
3rd sub-pillar: Future Technologies	114	15.11	3rd sub-pillar: Inclusion	114	33.60
B. People pillar	116	16.37	D. Impact pillar	114	26.39
1st sub-pillar: Individuals	108	21.97	1st sub-pillar: Economy	103	8.26
2nd sub-pillar: Businesses	105	15.38	2nd sub-pillar: Quality of Life	114	34.52
3rd sub-pillar: Governments	120	11.75	3rd sub-pillar: SDG Contribution	110	36.38

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar			C. Governance pillar		
<i>1st sub-pillar: Access</i>			<i>1st sub-pillar: Trust</i>		
1.1.1 Mobile tariffs	115	20.44	3.1.1 Rule of law	118	24.29
1.1.2 Handset prices	120	0.00	3.1.2 Software piracy rate	100	0.00
1.1.3 Internet access	101	18.90	3.1.3 Secure Internet servers	105	32.69
1.1.4 4G mobile network coverage	106	35.00	3.1.4 Cybersecurity	111	18.31
1.1.5 Fixed-broadband subscriptions	100	5.11	3.1.5 Online trust and safety	NA	NA
1.1.6 International Internet bandwidth	104	58.65	<i>2nd sub-pillar: Regulation</i>		
1.1.7 Internet access in schools	NA	NA	3.2.1 Regulatory quality	120	16.53
<i>2nd sub-pillar: Content</i>			3.2.2 Ease of doing business	108	42.87
1.2.1 Digital participation and content creation	*	*	3.2.3 Legal framework's adaptability to digital business models	110	20.47
1.2.2 Mobile apps development	104	33.06	3.2.4 E-commerce legislation	110	25.00
1.2.3 Intellectual property receipts	73	0.18	3.2.5 Social safety net protection	116	8.77
<i>3rd sub-pillar: Future Technologies</i>			3.2.6 ICT regulatory environment	88	72.98
1.3.1 Availability of latest technologies	106	29.57	<i>3rd sub-pillar: Inclusion</i>		
1.3.2 Company investment in emerging technology	115	4.79	3.3.1 E-Participation	113	17.83
1.3.3 Government procurement of advanced technology products	118	4.81	3.3.2 Socioeconomic gap in use of digital payments	66	65.03
1.3.4 ICT PCT patent applications	80	0.00	3.3.3 Availability of local online content	112	6.48
1.3.5 Computer software spending	21	36.36	3.3.4 Gender gap in internet use	80	31.51
1.3.6 Robot density	NA	NA	3.3.5 Rural gap in use of digital payments	98	47.15
B. People pillar			D. Impact pillar		
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Internet users	104	19.20	4.1.1 Medium and high-tech industry	71	27.69
2.1.2 Active mobile-broadband subscriptions	94	18.97	4.1.2 High-tech exports	97	3.88
2.1.3 Use of virtual social networks	116	4.37	4.1.3 PCT patent applications	84	0.03
2.1.4 Tertiary enrolment	104	6.76	4.1.4 Labour productivity per employee	104	1.43
2.1.5 Adult literacy rate	63	82.51	<i>2nd sub-pillar: Quality of Life</i>		
2.1.6 ICT skills	62	0.00	4.2.1 Happiness	116	11.64
<i>2nd sub-pillar: Businesses</i>			4.2.2 Freedom to make life choices	85	54.20
2.2.1 Firms with website	85	26.09	4.2.3 Income inequality	84	52.11
2.2.2 Internet shopping	94	4.83	4.2.4 Healthy life expectancy at birth	114	20.15
2.2.3 Professionals	105	7.12	<i>3rd sub-pillar: SDG Contribution</i>		
2.2.4 Technicians and associate professionals	108	6.06	4.3.1 Access to basic services	111	34.23
2.2.5 Extent of staff training	78	32.80	4.3.2 Pollution	62	84.62
2.2.6 R&D expenditure by businesses	NA	NA	4.3.3 Road safety	120	0.00
<i>3rd sub-pillar: Governments</i>			4.3.4 Reading proficiency in schools	NA	NA
2.3.1 Government online services	111	25.39	4.3.5 Maths proficiency in schools	NA	NA
2.3.2 Publication and use of open data	100	1.87	4.3.6 Use of clean fuels and technology	101	26.67
2.3.3 ICT use and government efficiency	108	8.00			
2.3.4 R&D expenditure by governments and higher education	NA	NA			

* Confidential data

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