PORTULANS INSTITUTE

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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 2023 the NRI Report maps the network-based readiness landscape of 134 economies based on their performances in four different pillars: Technology, People, Governance, and Impact. Each of these pillars is itself comprised of three sub-pillars (see Figure 1) that have been populated by a total of 58 variables.
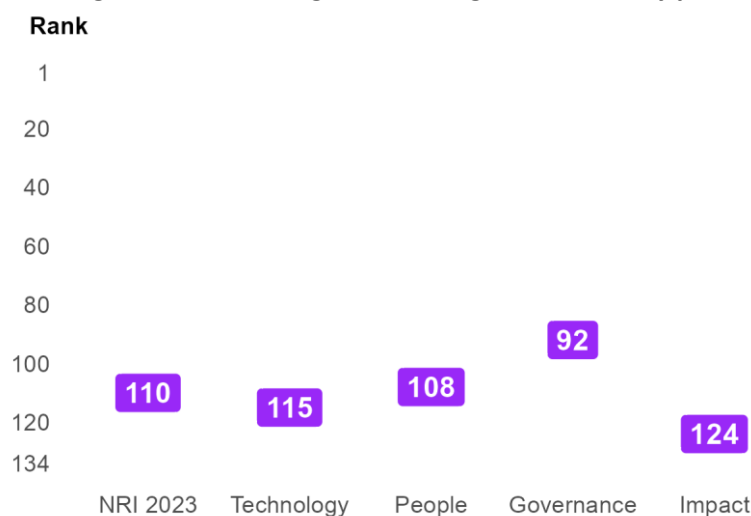
Figure 1: The NRI 2023 model
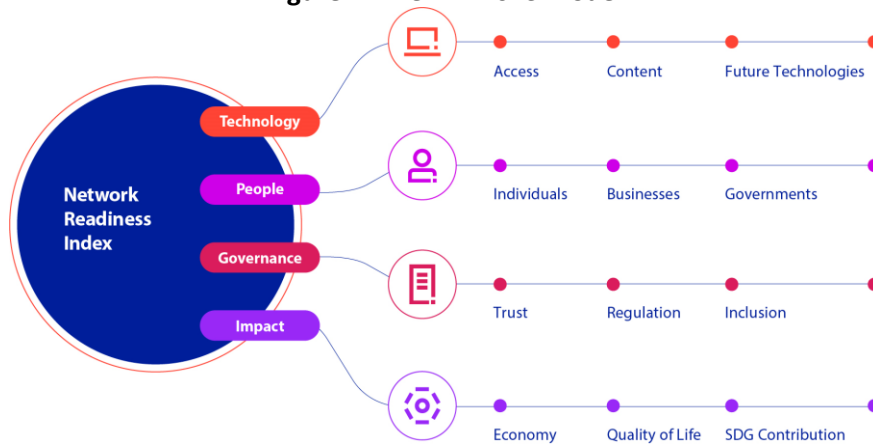
Global NRI position of Botswana
Botswana ranks 110th out of the 134 economies included in the NRI 2023 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Botswana global ranking, overall and by pillar

Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Botswana relate to Regulation, Trust and SDG Contribution, 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: Botswana rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Regulation	59	Future Technologies	102
Trust	81	Inclusion	114
SDG Contribution	90	Governments	119
Individuals	93	Content	121
Access	96	Economy	123
Businesses	99	Quality of Life	129

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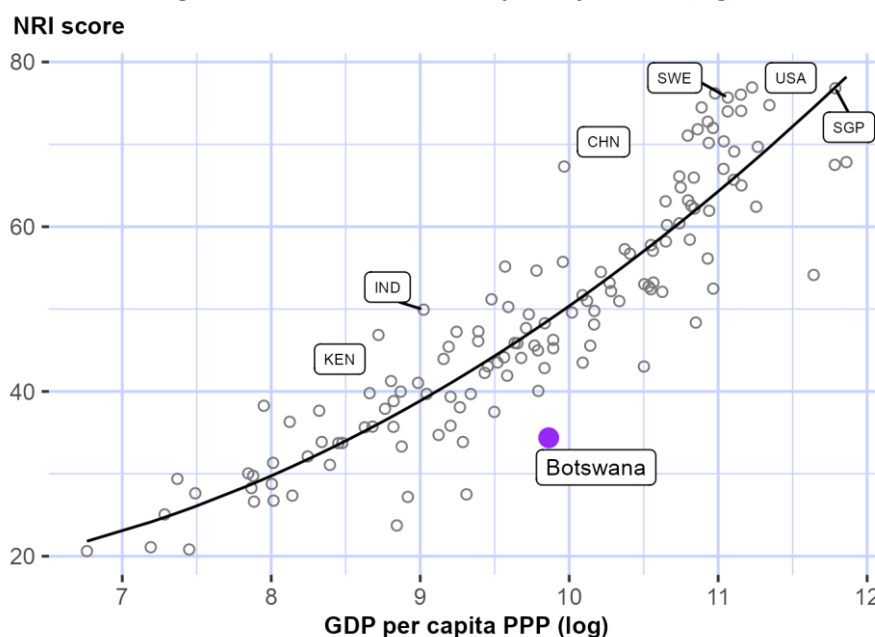
Note: USA = United States (rank: 1), SGP = Singapore (rank: 2), FIN = Finland (3), NLD = Netherlands (4), SWE = Sweden (5), CHN = China (20), IND = India (61). Botswana belongs to the group of upper-middle-income countries, where the best performer is China (CHN). The top performer of its region-Africa-is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

Performance against its income group and region

Upper-middle-income countries
Botswana 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: Regulation.

Africa
Botswana is ranked 11th within Africa (Figure 4, right panel). It has a score above the regional average in three of the four pillars: NRI, Technology, People and Governance. With regard to sub-pillars, it outperforms the average in Africa in seven of the twelve sub-pillars: Access, Individuals, Businesses, Trust, Regulation, Inclusion and SDG Contribution.

Figure 4: Performance of Botswana against its income group and region, overall and by pillar
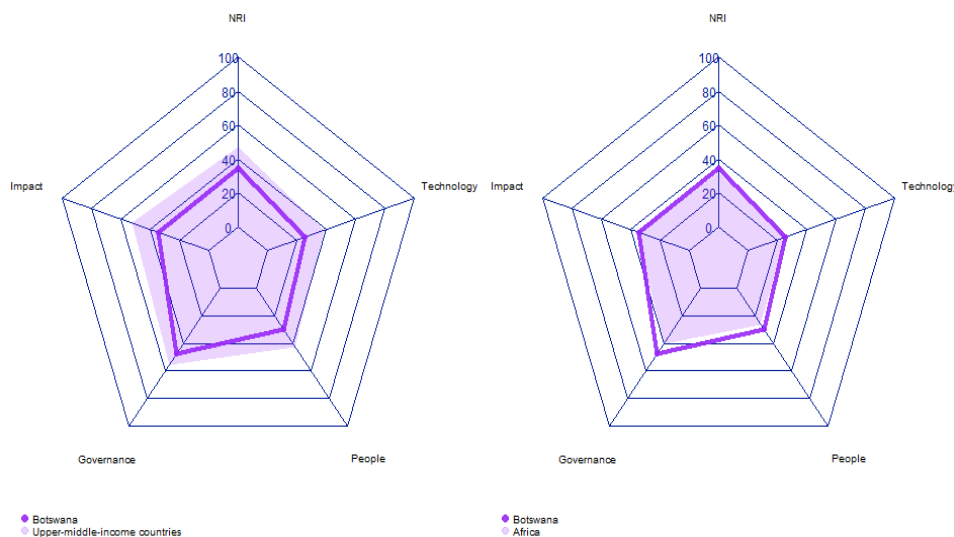
Table 2: Botswana scores vs. averages of its income group and region, overall and by pillar

Dimension	Botswana	Upper-middle-income countries	Africa
NRI	34.38	47.35	32.14
Technology	25.75	38.48	25.14
People	29.88	42.59	26.19
Governance	47.48	55.90	40.44
Impact	34.39	52.43	36.77

Strongest and weakest indicators

The indicators where Botswana performs particularly well include 3.2.4 E-commerce legislation, 2.1.2 ICT skills in the education system, and 4.3.4 SDG 7: Affordable and Clean Energy (Table 3). By contrast, the economy's weakest indicators include 2.3.1 Government online services, 3.3.1 E-Participation, and 1.1.3 FTTH/building Internet subscriptions.

Table 3: Highlight of Strengths and Opportunities for Botswana

Strongest indicators	Rank	Weakest indicators	Rank
3.2.4 E-commerce legislation	1	4.1.3 PCT patent applications	99
2.1.2 ICT skills in the education system	30	1.2.3 Mobile apps development	120
4.3.4 SDG 7: Affordable and Clean Energy	34	1.1.3 FTTH/building Internet subscriptions	122
3.2.5 Privacy protection by law content	38	2.3.1 Government online services	128
3.2.1 Regulatory quality	43	3.3.1 E-Participation	128
3.1.3 Online access to financial account	50		
4.1.1 High-tech and medium-high-tech manufacturing	57		
2.2.3 Knowledge intensive employment	58		
2.3.4 R&D expenditure by governments and higher education	58		
3.3.5 Rural gap in use of digital payments	69		
1.1.5 International Internet bandwidth	72		

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

Network Readiness Index 2023

NRI 2023 At-A-Glance: Botswana

Network Readiness Index   **Rank: 110 (out of 134)**   **Score: 34.38**

Pillar/sub-pillar	Rank	Score		Pillar/sub-pillar	Rank	Score
A. Technology pillar	115	25.75		C. Governance pillar	92	47.48
1st sub-pillar: Access	96	52.38		1st sub-pillar: Trust	81	35.45
2nd sub-pillar: Content	121	2.35		2nd sub-pillar: Regulation	59	67.08
3rd sub-pillar: Future Technologies	102	22.52		3rd sub-pillar: Inclusion	114	39.92
B. People pillar	108	29.88		D. Impact pillar	124	34.39
1st sub-pillar: Individuals	93	40.81		1st sub-pillar: Economy	123	12.79
2nd sub-pillar: Businesses	99	32.55		2nd sub-pillar: Quality of Life	129	34.39
3rd sub-pillar: Governments	119	16.29		3rd sub-pillar: SDG Contribution	90	56.00

The Network Readiness Index in detail

Indicator	Rank	Score		Indicator	Rank	Score	
A. Technology pillar	115	25.75		**C. Governance pillar**	92	47.48	
1st sub-pillar: Access	96	52.38		*1st sub-pillar: Trust*	81	35.45	
1.1.1 Mobile tariffs	94	45.84		3.1.1 Secure Internet servers	87	43.84	
1.1.2 Handset prices	76	42.82		3.1.2 Cybersecurity	93	52.23	
1.1.3 FTTH/building Internet subscriptions	122	3.43	○	3.1.3 Online access to financial account	50	36.21	●
1.1.4 Population covered by at least a 3G mobile network	76	99.34		3.1.4 Internet shopping	92	9.51	
1.1.5 International Internet bandwidth	72	70.49	●	*2nd sub-pillar: Regulation*	59	67.08	
1.1.6 Internet access in schools	NA	NA		3.2.1 Regulatory quality	43	63.48	●
2nd sub-pillar: Content	121	2.35		3.2.2 ICT regulatory environment	86	74.12	
1.2.1 GitHub commits	107	1.51		3.2.3 Regulation of emerging technologies	102	22.34	
1.2.2 Internet domain registrations	86	1.60		3.2.4 E-commerce legislation	1	100.00	●
1.2.3 Mobile apps development	120	5.60	○	3.2.5 Privacy protection by law content	38	75.47	●
1.2.4 AI scientific publications	109	0.69		*3rd sub-pillar: Inclusion*	114	39.92	
3rd sub-pillar: Future Technologies	102	22.52		3.3.1 E-Participation	128	15.12	○
1.3.1 Adoption of emerging technologies	109	26.73		3.3.2 Socioeconomic gap in use of digital payments	96	54.46	
1.3.2 Investment in emerging technologies	97	30.75		3.3.3 Availability of local online content	123	23.56	
1.3.3 Robot density	NA	NA		3.3.4 Gender gap in Internet use	96	44.00	

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Network Readiness Index 2023

Indicator	Rank	Score	
1.3.4 Computer software spending	90	10.09	
B. People pillar	108	29.88	
1st sub-pillar: Individuals	93	40.81	
2.1.1 Mobile broadband internet traffic within the country	111	1.08	
2.1.2 ICT skills in the education system	30	68.39	●
2.1.3 Use of virtual social networks	97	37.73	
2.1.4 Tertiary enrollment	93	14.85	
2.1.5 Adult literacy rate	72	82.01	
2.1.6 AI talent concentration	NA	NA	
2nd sub-pillar: Businesses	99	32.55	
2.2.1 Firms with website	NA	NA	
2.2.2 GERD financed by business enterprise	70	21.87	
2.2.3 Knowledge intensive employment	58	33.54	●
2.2.4 Annual investment in telecommunication services	102	72.36	
2.2.5 GERD performed by business enterprise	62	2.41	
3rd sub-pillar: Governments	119	16.29	
2.3.1 Government online services	128	19.76	○
2.3.2 Publication and use of open data	97	5.88	
2.3.3 Government promotion of investment in emerging tech	91	29.60	
2.3.4 R&D expenditure by governments and higher education	58	9.93	●

Indicator	Rank	Score	
3.3.5 Rural gap in use of digital payments	69	62.45	●
D. Impact pillar	124	34.39	
1st sub-pillar: Economy	123	12.79	
4.1.1 High-tech and medium-high-tech manufacturing	57	26.46	●
4.1.2 High-tech exports	125	0.35	
4.1.3 PCT patent applications	99	0.00	○
4.1.4 Domestic market size	113	36.53	
4.1.5 Prevalence of gig economy	118	11.92	
4.1.6 ICT services exports	120	1.48	
2nd sub-pillar: Quality of Life	129	34.39	
4.2.1 Happiness	123	20.14	
4.2.2 Freedom to make life choices	95	60.72	
4.2.3 Income inequality	111	24.37	
4.2.4 Healthy life expectancy at birth	127	32.31	
3rd sub-pillar: SDG Contribution	90	56.00	
4.3.1 SDG 3: Good Health and Well-Being	107	41.65	
4.3.2 SDG 4: Quality Education	NA	NA	
4.3.3 SDG 5: Women's economic opportunity	119	48.67	
4.3.4 SDG 7: Affordable and Clean Energy	34	78.40	●
4.3.5 SDG 11: Sustainable Cities and Communities	82	55.29	

NOTE: ● a strength and ○ a weakness.

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