



## 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 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.

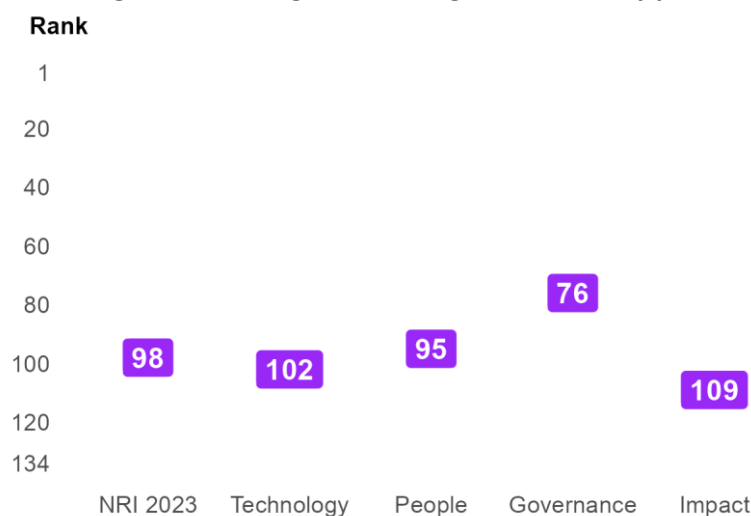
Figure 1: The NRI 2023 model



### Global NRI position of Ghana

Ghana ranks 98th 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: Ghana global ranking, overall and by pillar



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## Performance at sub-pillar level

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

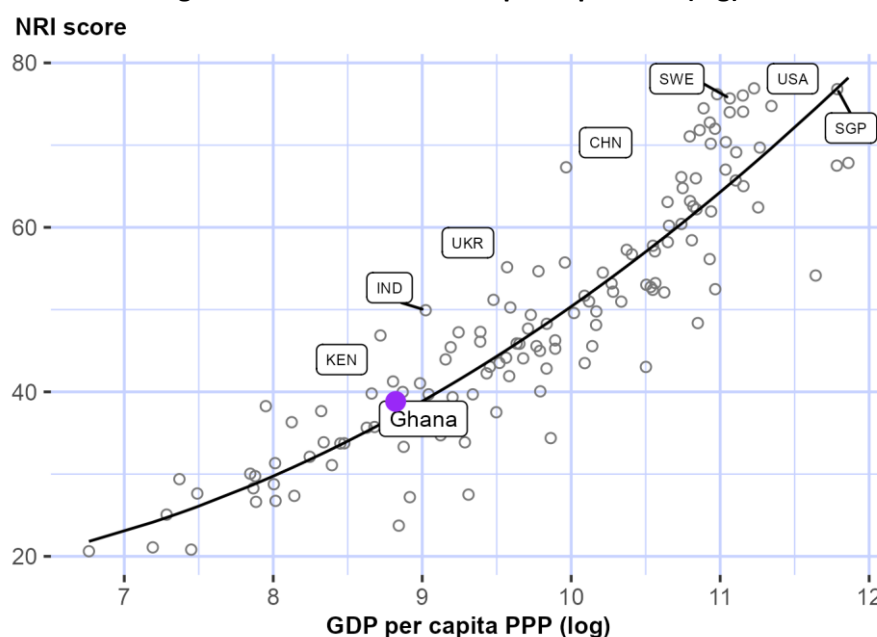
**Table 1: Ghana rankings by sub-pillar**

Sub-pillar	Rank	Sub-pillar	Rank
Regulation	55	SDG Contribution	101
Trust	75	Economy	103
Businesses	84	Access	105
Governments	84	Individuals	107
Future Technologies	90	Content	111
Inclusion	101	Quality of Life	111

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

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## Performance against its income group and region

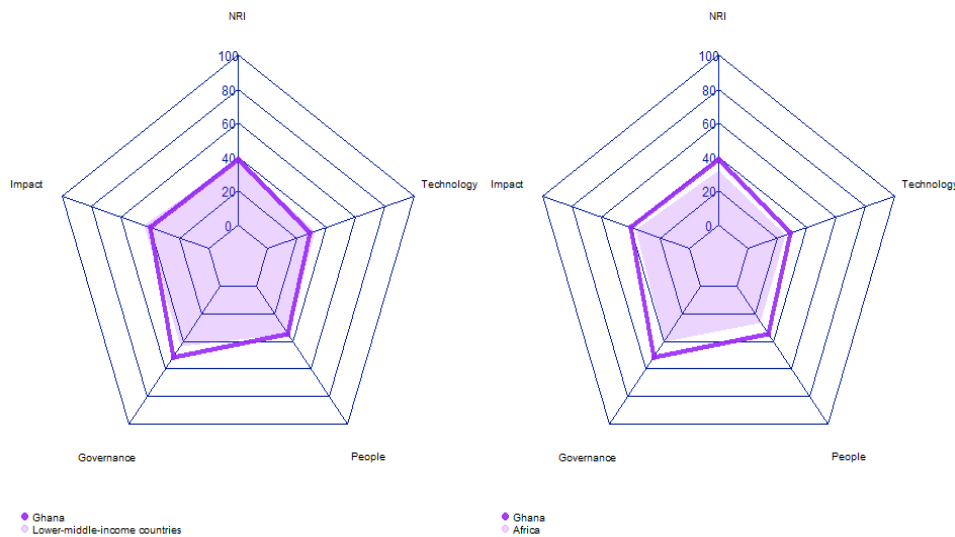
### Lower-middle-income countries

Ghana 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 two of the four pillars: NRI, People and Governance. At the sub-pillar level, it outperforms lower-middle-income countries in four of the twelve sub-pillars: Businesses, Governments, Trust and Regulation.

### 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 has a higher score than the regional average in each of the twelve sub-pillars.

**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	38.83	38.41	32.14
Technology	29.02	32.12	25.14
People	34.58	34.38	26.19
Governance	51.68	43.27	40.44
Impact	40.03	43.89	36.77

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## Strongest and weakest indicators

The indicators where Ghana performs particularly well include 3.2.4 E-commerce legislation, 3.2.5 Privacy protection by law content, and 4.3.4 SDG 7: Affordable and Clean Energy (Table 3). By contrast, the economy's weakest indicators include 1.3.4 Computer software spending, 4.3.1 SDG 3: Good Health and Well-Being, and 1.2.3 Mobile apps development.

**Table 3: Highlight of Strengths and Opportunities for Ghana**

Strongest indicators	Rank	Weakest indicators	Rank
3.2.4 E-commerce legislation	1	4.1.3 PCT patent applications	99
3.2.5 Privacy protection by law content	14	4.2.1 Happiness	113
4.3.4 SDG 7: Affordable and Clean Energy	23	1.2.3 Mobile apps development	115
1.3.2 Investment in emerging technologies	44	4.3.1 SDG 3: Good Health and Well-Being	119
2.1.1 Mobile broadband internet traffic within the country	47	1.3.4 Computer software spending	125
1.2.4 AI scientific publications	51		
3.1.2 Cybersecurity	51		
1.1.5 International Internet bandwidth	58		
3.1.3 Online access to financial account	58		
4.1.4 Domestic market size	66		
2.2.4 Annual investment in telecommunication services	71		

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

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## NRI 2023 At-A-Glance: Ghana

Network Readiness Index

Rank: 98 (out of 134)

Score: 38.83

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	102	29.02	C. Governance pillar	76	51.68
1st sub-pillar: Access	105	47.41	1st sub-pillar: Trust	75	40.08
2nd sub-pillar: Content	111	12.29	2nd sub-pillar: Regulation	55	68.36
3rd sub-pillar: Future Technologies	90	27.37	3rd sub-pillar: Inclusion	101	46.61
B. People pillar	95	34.58	D. Impact pillar	109	40.03
1st sub-pillar: Individuals	107	31.68	1st sub-pillar: Economy	103	17.89
2nd sub-pillar: Businesses	84	38.58	2nd sub-pillar: Quality of Life	111	49.44
3rd sub-pillar: Governments	84	33.50	3rd sub-pillar: SDG Contribution	101	52.77

### The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
<b>A. Technology pillar</b>	102	29.02	<b>C. Governance pillar</b>	76	51.68
1st sub-pillar: Access	105	47.41	1st sub-pillar: Trust	75	40.08
1.1.1 Mobile tariffs	78	54.35	3.1.1 Secure Internet servers	111	32.28
1.1.2 Handset prices	112	27.46	3.1.2 Cybersecurity	51	86.46
1.1.3 FTTH/building Internet subscriptions	84	22.75	3.1.3 Online access to financial account	58	32.31
1.1.4 Population covered by at least a 3G mobile network	89	98.60	3.1.4 Internet shopping	94	9.28
1.1.5 International Internet bandwidth	58	72.91	2nd sub-pillar: Regulation	55	68.36
1.1.6 Internet access in schools	74	8.41	3.2.1 Regulatory quality	80	45.08
2nd sub-pillar: Content	111	12.29	3.2.2 ICT regulatory environment	79	76.47
1.2.1 GitHub commits	90	2.98	3.2.3 Regulation of emerging technologies	83	32.73
1.2.2 Internet domain registrations	116	0.30	3.2.4 E-commerce legislation	1	100.00
1.2.3 Mobile apps development	115	37.61	3.2.5 Privacy protection by law content	14	87.53
1.2.4 AI scientific publications	51	8.26	3rd sub-pillar: Inclusion	101	46.61
3rd sub-pillar: Future Technologies	90	27.37	3.3.1 E-Participation	82	44.18
1.3.1 Adoption of emerging technologies	99	32.17	3.3.2 Socioeconomic gap in use of digital payments	82	64.96
1.3.2 Investment in emerging technologies	44	49.25	3.3.3 Availability of local online content	103	37.50

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Indicator	Rank	Score	Indicator	Rank	Score
1.3.3 Robot density	NA	NA	3.3.4 Gender gap in Internet use	NA	NA
1.3.4 Computer software spending	125	0.68 ○	3.3.5 Rural gap in use of digital payments	103	39.78
<b>B. People pillar</b>			<b>D. Impact pillar</b>		
<i>1st sub-pillar: Individuals</i>	95	34.58	<i>1st sub-pillar: Economy</i>	109	40.03
2.1.1 Mobile broadband internet traffic within the country	107	31.68	4.1.1 High-tech and medium-high-tech manufacturing	103	17.89
2.1.2 ICT skills in the education system	47	15.89 ●	4.1.2 High-tech exports	84	11.89
2.1.3 Use of virtual social networks	76	41.51	4.1.3 PCT patent applications	109	1.82
2.1.4 Tertiary enrollment	108	16.42	4.1.4 Domestic market size	99	0.00 ○
2.1.5 Adult literacy rate	99	11.35	4.1.5 Prevalence of gig economy	66	52.03 ●
2.1.6 AI talent concentration	81	73.21	4.1.6 ICT services exports	75	36.63
<i>2nd sub-pillar: Businesses</i>			<i>2nd sub-pillar: Quality of Life</i>		
2.2.1 Firms with website	84	38.58	4.2.1 Happiness	95	4.99
2.2.2 GERD financed by business enterprise	84	38.58	4.2.2 Freedom to make life choices	111	49.44
2.2.3 Knowledge intensive employment	92	27.38	4.2.3 Income inequality	113	34.19 ○
2.2.4 Annual investment in telecommunication services	NA	NA	4.2.4 Healthy life expectancy at birth	79	68.55
2.2.5 GERD performed by business enterprise	107	11.12	<i>3rd sub-pillar: SDG Contribution</i>		
<i>3rd sub-pillar: Governments</i>			4.3.1 SDG 3: Good Health and Well-Being	109	46.02
2.3.1 Government online services	71	77.23 ●	4.3.2 SDG 4: Quality Education	101	52.77
2.3.2 Publication and use of open data	84	33.50	4.3.3 SDG 5: Women's economic opportunity	119	27.64 ○
2.3.3 Government promotion of investment in emerging tech	92	48.73	4.3.4 SDG 7: Affordable and Clean Energy	NA	NA
2.3.4 R&D expenditure by governments and higher education	65	25.00	4.3.5 SDG 11: Sustainable Cities and Communities	101	64.60
	98	26.77		23	80.71 ●
	NA	NA		114	38.13

NOTE: ● a strength and ○ a weakness.

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