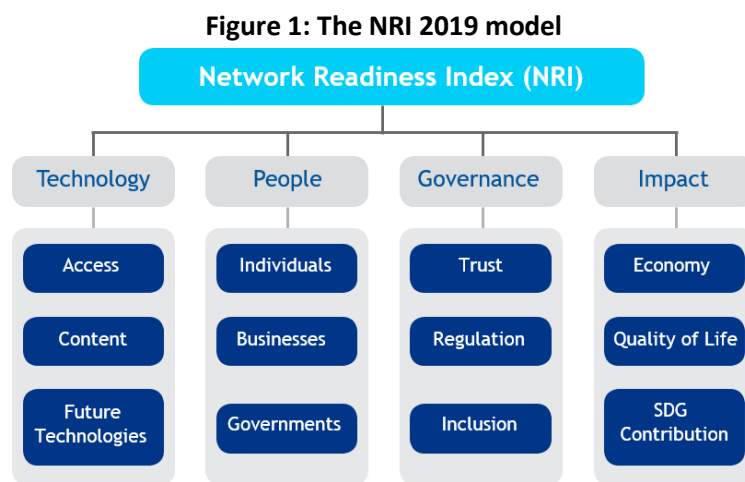


Network Readiness Index 2019

Eswatini

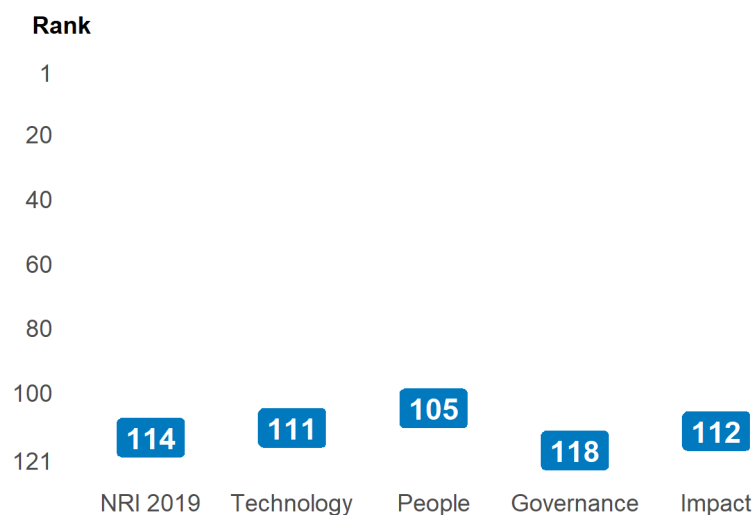
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2019 the NRI Report maps the network-based readiness landscape of 121 economies based on their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

Figure 2: Eswatini global ranking, overall and by pillar



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.

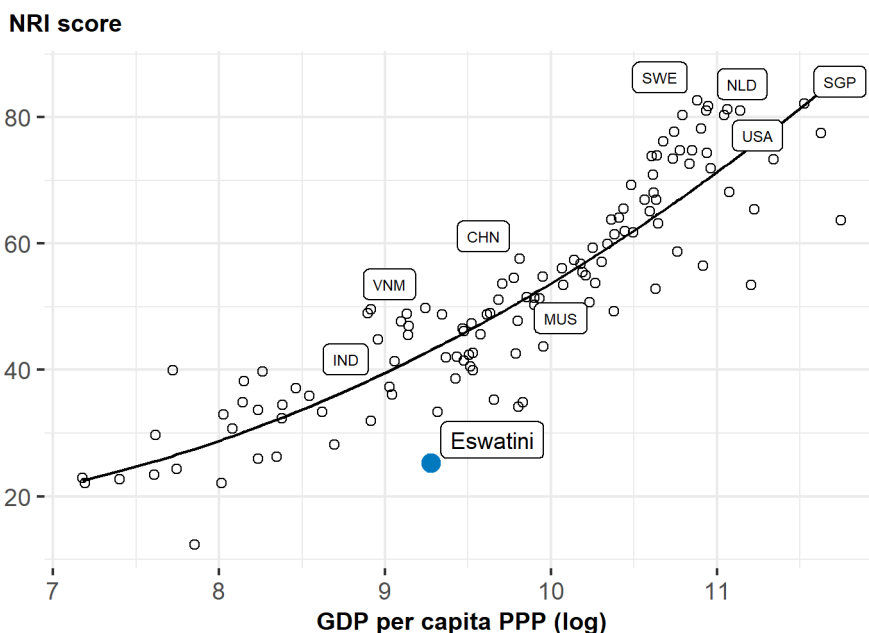
Table 1: Eswatini rankings by sub-pillar

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

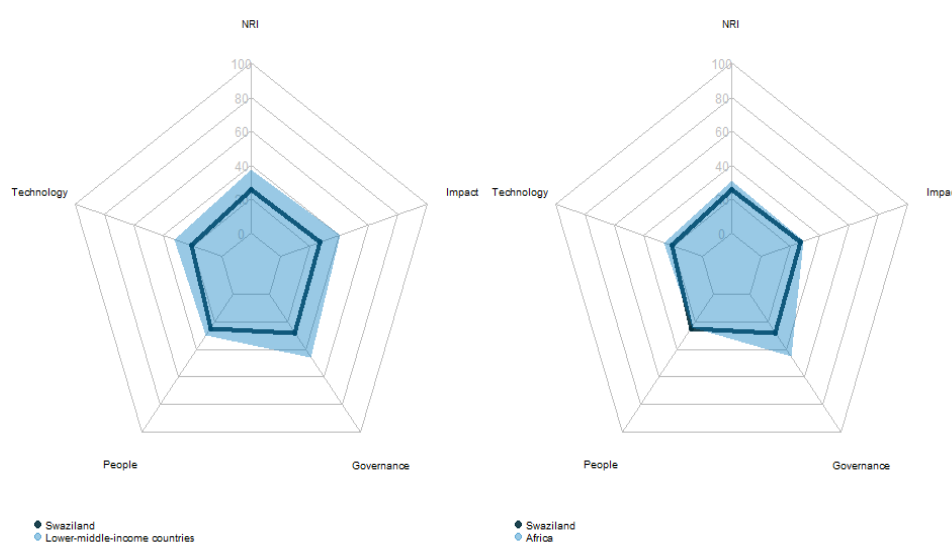


Table 2: Eswatini scores vs. averages of its income group and region, overall and by pillar

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

Sources

- Berry, B. (2019). *berryFunctions: Function Collection Related to Plotting and Hydrology*. R package version 1.18.2. URL: <https://CRAN.R-project.org/package=berryFunctions>
- Dutta, S., & Lanvin, B. (eds.) (2019). *The Network Index 2019: Towards a Future-Ready Society*. Washington DC: Portulans Institute.
- Gohel, D. (2019). *officer: Manipulation of Microsoft Word and PowerPoint Documents*. R package version 0.3.6. URL: <https://CRAN.R-project.org/package=officer>
- Gohel, D. (2019). *flextable: Functions for Tabular Reporting*. R package version 0.5.6. URL: <https://CRAN.R-project.org/package=flextable>
- Milton Bache, S. & Wickham, H. (2014). *magrittr: A Forward-Pipe Operator for R*. R package version 1.5. URL: <https://CRAN.R-project.org/package=magrittr>
- Nakazawa, M. (2019). *fmsb: Functions for Medical Statistics Book with some Demographic Data*. R package version 0.7.0. URL: <https://CRAN.R-project.org/package=fmsb>
- R Core Team (2018). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. URL: <https://www.R-project.org/>.
- Slowikowski, K. (2019). *ggrepel: Automatically Position Non-Overlapping Text Labels with 'ggplot2'*. R package version 0.8.1. URL: <https://CRAN.R-project.org/package=ggrepel>
- Wickham, H. (2007). Reshaping Data with the reshape Package. *Journal of Statistical Software*, 21(12), 1-20. URL: <http://www.jstatsoft.org/v21/i12/>.
- Wickham, H. (2016). *ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag. New York.
- Wickham et al., (2019). Welcome to the tidyverse. *Journal of Open Source Software*, 4(43), 1686, URL: <https://doi.org/10.21105/joss.01686>