SOUTH AFRICA: INEQUALITY, POVERTY AND UNEMPLOYMENT IN NUMBERS

A Short Statistical Review Benchmarking South Africa's Triple Threats against Similar Developing Economies and SADC[i]

How can information and knowledge delivering technologies, known by so many different names, from meaningful (ICT, Telecommunications, Internet) to meaningless marketing hype (Computers in Clouds, Digital Worlds, Twitter, TikTok, ChatGPT, etc.), be used to reduce these threats as their more logically named predecessors have done throughout human history?

INTRODUCTION

Is South Africa "falling apart," as suggested by MyBroadband on 8th March 2023? Has the country reached the classification of "failed state[1]," or is it just closing in on this condition? Whatever the responses to these provocative questions, statistics, used accurately, appropriately, and ethically, should tell the true story. Numbers do not lie, unless their users intend them to do so, directly, or indirectly through the most powerful technologies available today, the benign or maliciously intended botnet-driven artificial intelligence machines. Ultimately, whatever the intentions or consequences of using performance related statistics, humans remain responsible for their good, their bad, and their ugly utilization. The statistics presented herein are intended to assist South Africa's economic, political, and social leaders and their multitudes of followers to use the numbers wisely for the good of the country and all its people.

There is growing media coverage and opinion on the above emotive concepts, of whether the country is on a self-destruct trajectory leading to state failure. Most opinions are based on actual or perceived economic, political, and societal failures, which accurate verifiable statistics should help to authenticate or rebut. Recent media coverage of this nature includes:

- **South Africa The Good News**, December 2015: "*Are we on a slippery slope to a failed state, asks Max du Preez"*
- **Al Jazeera**, 10 September 2020: https://www.aljazeera.com/economy/2020/9/10/south-africa-heading-towards-becoming-a-failed-state-report. Al Jazeera broadcasts to the world a troubling paywall protected article by Bloomberg which suggests that "*South Africa faces a precipitous economic and political collapse by 2030 unless it changes its economic model and implements growth-friendly policies*"
- **The Conversation**: 14 December 2021: https://theconversation.com/south-africas-political-risk-profile-has-gone-up-a-few-notches-but-its-not-yet-a-failed-state-170653. *"South Africa's political risk profile has gone up a few notches: but it's not yet a failed state"*
- **Daily Maverick**, 5 September 2022: https://www.dailymaverick.co.za/opinionista/2022-09-05-lets-not-beat-about-the-bush-south-africa-is-a-failed-state-now-lets-all-stand-up-and-fix-it/ "*To say South Africa is on the precipice is an understatement; the state has collapsed. Ours has all the hallmarks of a 'failed state.' However, the patient is not yet at the graveyard. She is in the*

[1] Failed State: Cambridge Dictionary Definition: "*a country whose government is considered to have failed at some of its basic responsibilities, for example keeping the legal system working correctly, and providing public services (= electricity, water, education, hospitals, etc.)" | Faild or Fragile State Index included for clarity in the SADC benchmark table.*

intensive care unit and can still be rescued. Thus, public discourse must henceforth be about how to fix South Africa."

- **University of Pretoria**, 11 November 2022: https://www.up.ac.za/news/post_3114215-is-south-africa-a-failing-state: Thought Leadership Panel Discussions: "*This was a lesson for us on just how fractured our society is, and that, without ratcheted development and a different type of political culture taking root, we could tip into a sphere of conflict where the state will not be able to successfully intervene. We do however have the foresight to step away and find an alternative path so that catastrophic consequences are avoided*"
- **Daily Maverick**, 01 Feb 2023: https://www.dailymaverick.co.za/opinionista/2023-02-01-this-is-not-the-south-africa-so-many-fought-to-build-we-can-longer-be-spectators-in-the-fiasco/. "*This is not the South Africa so many fought to build – we can longer be spectators in the fiasco*" Then again in the Daily Maverick of 9 March 2023, *Joel Netshitenzhe* discusses Social Upheaval, Dictatorship or Renaissance as responses to societal challenges or disasters in South Africa.

This article is not about failed states, in South Africa or anywhere else. Neither is it about the specifics of South Africa's triple threats of inequality, poverty, and unemployment, although these are the central themes of the document. The purpose of the document is to present the numbers that define the extent and depth of the triple threats that plague South Africa's sustainable development, threatening the state's sustainable growth with social stability. The statistics are intended to enable: (a) a closer understanding of the causes, effects, and consequences of the triple threats and related societal challenges; (b) how similar peer developing nations are dealing with them, have dealt with them, or how they intend to deal with them; (c) the lessons South Africans can draw from their failures and successes; (d) an improved understanding of how South Africa's peers have used the principle tools of education, and education's directly related development and dissemination tool, the ICTs, through comparisons of progress made in the relevant benchmarks.

The statistics presented are not intended to, and must not be used to, criticise South Africa or any of its listed peers in any way whatsoever. The numbers are presented as vital tools for the amelioration and ultimate reversal of all triple threats and the full compendium of related and interdependent sustainable development challenges. Statistics are powerful tools for decision-making, but they demand fundamental mathematical and related STEM literacy and knowledge for improved understanding and use, skill sets which are generally lacking in South Africa, and which must therefore be critical developmental target outcomes of these proposed analyses.

Benchmark Country Selection Criteria

The seven developing countries used in this benchmark, including South Africa, were selected for their similarities in the demographic and economic indicators listed in the tables that follow:

Demographics (2020)	Algeria	Argentina	Colombia	Peru	Thailand	Vietnam	S. Africa
Population (Millions)	43	45	51	33	71	97	59
% Of South Africa	73%	76%	86%	56%	120%	164%	100%
Density (per Km^2)	18	17	46	26	140	308	48
Urbanization (%)	73	92	81	78	51	37	67

Main criteria: (a) Population between 30 million and 100 million, representing mid-sized developing countries; (b) Countries within World Bank classification of upper middle-income economies, except for Vietnam.
Source: Various World Bank published data

Economy (GNI/cap $PPP)	Algeria	Argentina	Colombia	Peru	Thailand	Vietnam	S. Africa
Year 2000	8090	11240	6610	4890	7140	2520	7980
Year 2020	11210	20220	14720	11480	17360	10550	13290
% Of South Africa 2020	84%	152%	111%	86%	131%	79%	100%
20-year CAGR	2%	3%	4%	4%	5%	7%	3%

1. Selection based on demographics from the 55 countries classified by the World Bank as Upper-middle-income, except for Vietnam which is classified as a Lower-middle-income country:
2. Key data source: https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD

Key Comparative Triple Threat Indicators:

INEQUALITY

Inequality (GINI Index)	Algeria	Argentina	Colombia	Peru	Thailand	Vietnam	S. Africa
Year 2000	35	51	59	49	43	37	58
Year 2019	28	43	51	42	35	36	63
% Of South Africa 2019	44%	68%	81%	67%	56%	57%	100%
2019: % above/below international alert line of 44	-36%	-2%	+16%	-5%	-20%	-18%	+43%
Rank out of 165 countries	13/165	127/165	154/165	114/165	62/165	72/165	165/165

Data Source: https://data.worldbank.org/indicator/SI.POV.GINI:
The following summarises the data in the inequality table:

1. South Africa: Highest GINI Coefficient (63) out of 165 countries with valid data
2. The next four most unequal nations in today's world were Namibia, GINI of 59.1: Zambia, 57.1; Sao Tome and Principe, 56.3; Central African Republic, 56.2.
3. The median GINI Coefficient for the 165 countries was Somalia's GINI Coefficient of 36.8.
4. The five most equal nations out of 165 were: (1) Slovenia, 24.6; (2) Slovak Republic, 25; Czech Republic, 25; Belarus, 25.3; Moldova, 25.7
5. Of the seven benchmark countries, South Africa was the only country with a significant increase in inequality in the decade to 2020, all other six reduced their levels of inequality between the years 2000 to 2019.

POVERTY

Poverty Headcount Ratios at International Poverty Lines US$ PPP per day (2019/2020)	Algeria	Argentina	Colombia	Peru	Thailand	Vietnam	S. Africa
Upper Mid Income US$ 6.85 PPP[1]	36.6%	9.7%	33.9%	30.2%	15.6%	22.2%	61.6%
Lower Mid Income US$ 3.65 PPP[2]	4%	2.6%	12.2%	10.6%	0.9%	5.3%	40%
Extreme Poverty US$ 2.15 PPP[3]	0.5%	0.8%	4.5%	3.6%	0%	1.2%	20.5%

1. Poverty headcount ratio at $6.85 a day (2017 PPP) (% of population, Upper-Middle-Income countries) - https://data.worldbank.org/indicator/SI.POV.UMIC
2. Poverty headcount ratio at $3.65 a day (2017 PPP) (% of population, Lower-Middle-Income countries) - https://data.worldbank.org/indicator/SI.POV.LMIC
3. Poverty headcount ratio at $2.15 a day (2017 PPP) (% of population – Low Income countries/Extreme Poverty Line) - https://data.worldbank.org/indicator/SI.POV.DDAY
4. South African Poverty Lines: https://www.statssa.gov.za/publications/P03101/P031012021.pdf - all three South African Poverty Lines (UBPL, LBPL, FPL) align very closely with the relevant World Bank Poverty Lines

UNEMPLOYMENT:

Unemployment % of total labour force	Algeria	Argentina	Colombia	Peru	Thailand	Vietnam	S. Africa
Total Unemployment 2020	13%	11%	15%	7.2%	1.1%	2.4%	29%
Total Unemployment 2021	12.7%	10.9%	14.3%	4.8%	1.4%	2.2%	33.6%
Global Rank 2021 (234 countries)	194	183	203	64	6	12	234
Youth: ages 15-24 years, NEET	31%	30%	26%	13%	5%	7%	60%
% S. A. Youth Unemployment	52%	50%	43%	22%	8%	12%	100%

1. Total Unemployment: https://api.worldbank.org/v2/en/indicator/SL.UEM.TOTL.ZS?downloadformat=excel
2. Youth Unemployment: https://api.worldbank.org/v2/en/indicator/SL.UEM.1524.ZS?downloadformat=excel

Notes: Between 2020 and 2021, driven by Covid-19, Thailand's unemployment ratio increased 27%, from a low of 1.1% to a still impressive low of 1.4%, ranking the country 6th lowest in the world. South Africa's unemployment over the same period increased 32.6% from 29% to 33.6%, ranking 234 out of 234 countries in both years.
UPDATE: STATS SA reported an improvement of 0.2 percentage points in Q4 2022, from the world record high of 32.9% unemployment at the official definition in Q3 2022, to retain the country's world record unemployment level at 32.7% in Q4 2022. https://www.statssa.gov.za/?p=16113

Two Critical Tools in the fight against the Triple Threats

Education:

Educational Achievement: % Above (+) or Below (-) International Average	Algeria	Argentina	Colombia	Peru	Thailand	Vietnam	S. Africa
Reading 2015/2016[1]	-29%	-3%	-14%	-19%	-17%	-1%	-36%
Math 2015/2016[1]	-26%	-7%	-21%	-21%	-15%	+1%	-29%
Science 2015/2016[1]	-23%	-4%	-16%	-20%	-15%	+6%	-28%
South Africa Only Grade 4 TIMSS Math and Science 2019							
TIMSS 2019 G4 Math[3]							-25%
TIMSS 2019 G4 Science[3]							-35%
Graduation Rates[4]: https://genderdata.worldbank.org/ea4f323e-92a6-4be9-8120-03730c15252c							
Gross Graduation Rate (%)	39.3%	19.3%	26.6%	39.1%	25.3%	19.8%	11.4%

Source and Notes

1. PIRLS and TIMSS 2016: https://timssandpirls.bc.edu/pirls2016/international-results/wp-content/uploads/structure/PIRLS/1.-student-achievement/1_1_pirls-achievement-results.xlsx
2. PIRLS 2021 results expected May 2023
3. TIMSS 2019 International Results in Mathematics and Science: https://timss2019.org/reports/download-center/
4. Graduation Rates: https://genderdata.worldbank.org/indicators/se-ter-cmpl-zs?gender=total AND in the absence of data (e.g., Peru), results for the STEM subjects have been used: http://api.worldbank.org/v2/en/indicator/UIS.FOSGP.5T8.F500600700?downloadformat=excel&source=12

ICT Access and Use

Converged Broadband	Algeria	Argentina	Colombia	Peru	Thailand	Vietnam	S. Africa
Fixed Broadband per 100[1]	A proxy for the vital 24/7 Broadband Connected Households						
Year 2010	2.5	9.9	5.8	3.2	4.8	4.2	1.5
Year 2020	8.6	21.2	15.3	9.2	16.4	17.2	2.2[3]
20-year CAGR (% per annum)	13%	8%	10%	11%	13%	15%	4%
Estimated Internet Households	31%	76%	55%	33%	59%	62%	8%[2]

Source and Notes

1. https://data.worldbank.org/indicator/IT.NET.BBND.P2 Derived from ITU Database
2. S. African connected household data from: https://www.nab.org.za/uploads/files/State-of-ICT-Sector-Report-March-2022.pdf
3. Upper-middle-income group average fixed broadband penetration in 2020 was 26.6 per 100 population: South Africa's was 12-times lower at 2.2 per 100.

South Africa: Education and ICT: ICT Access and Use in Schools

S.A. Connect targets set in 2013:

- 50% schools connected at 10Mbps by 2016; 100% at 10Mbps and 80% at 100Mbps by 2020; 100% at 1Gbps by 2030

S. A. Connect achievement by 2021: (Source: DBE-NEIMS-REPORT-2020.docx.pdf - Equal Education)

- Total Schools surveyed: 23,267:
- 4,723 (20%) schools were equipped with internet services for teaching and learning, unspecified speed, capacity, or quality;
- 6,852 (30%) schools were equipped with internet services for school administration only – no teaching or learning;
- 11,575 (50%) schools had no internet connections of any kind.

Triple Threat Comparisons in SADC member states, Including Failed or Fragile State Index

Country Name	Wealth (GNI per capita US$ PPP): Global Rank/195			Inequality GINI Index, (Global Rank out of 165 countries)			Poverty Ratio (% below national poverty lines: Global Rank/168)			Unemployment: %: Global Rank/188 countries			FSI [6]
	GNI	Global Rank	SADC Rank	GINI	Global Rank	SADC Rank	Rate	Global Rank	SADC Rank	Rate	Global Rank	SADC Rank	Rank
Seychelles	24150	60	1	32	36	1	25	96	4	4	24	3	124
Mauritius	22380	63	2	37	84	2	10	19	1	7	107	8	151
Botswana	15490	83	3	53	156	11	19	62	3	25	184	14	121
S. Africa	13140	96	4	63	165	16	56	152	13	29	188	16	78
Namibia	9190	119	5	59	164	15	17	53	2	21	180	12	108
Eswatini	7980	125	6	55	160	13	59	155	14	26	186	15	52
Angola	5900	139	7	51	155	10	32	112	6	8	122	9	34
Zimbabwe	3420	165	8	50	151	9	38	120	7	5	70	5	15
Zambia	3360	166	9	57	163	14	54	149	12	13	149	11	42
Comoros	3130	168	10	45	138	6	42	134	8	9	131	10	46
Tanzania	2760	171	11	41	107	3	26	100	5	3	18	2	60
Lesotho	2730	172	12	45	136	7	50	146	10	25	183	13	64
Malawi	1550	186	13	45	134	8	51	147	11	7	101	7	44
Madagascar	1500	187	14	43	70.7	5	71	161	16	2	17	1	51
Mozambique	1250	190	15	54	125	12	46	139	9	4	41	4	21
DRC	1110	193	16	42	122	4	64	158	15	5	80	6	6

Sources:

1. Economy: https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD
2. Inequality: https://api.worldbank.org/v2/en/indicator/SI.POV.GINI?downloadformat=excel
3. Poverty: https://data.worldbank.org/indicator/SI.POV.NAHC
4. Unemployment: https://api.worldbank.org/v2/en/indicator/SL.UEM.TOTL.ZS?downloadformat=excel
5. Youth Unemployment (not included in the table: https://api.worldbank.org/v2/en/indicator/SL.UEM.1524.ZS?downloadformat=excel
6. Failed (or Fragile) State Index: https://worldpopulationreview.com/country-rankings/failed-states | Rank 1 to 10: Very High or High Alert | Rank 11 to 28: Alert | Rank 29 to 53: High Warning | Rank 54 to 85: Elevated Warning | Rank 86 to 115: Warning | Rank 116 to 132: Stable | Rank 133 to 147: More Stable | Rank 148 to 176: Very Stable to Very Sustainable.

Where current data is lacking, the nearest report within the two decades 2000 to 2020 has been used. This applies mainly to the inequality indicator, the GINI Index, which changes very slowly over time, thus rendering the approximation an excellent starting point for assessment and ultimate generation of high-quality representative data.

Postscript March 2023 – ICT Affordability in numbers

The internationally recommended affordability level for internet access and use is "2 for 1": 2% of income for 1 GB of mobile data per month. There are four ways of interpreting this recommendation:

- Average South African income, represented by GNI per Capita in US$ PPP: US$ 13,270 per annum, ZAR 6,441 per month. Applicable affordability at this income level is ZAR 129 per month. (All poverty data based on the most recent 2015 relevant statistical survey published by STATS SA at https://www.statssa.gov.za/publications/Report-03-10-06/Report-03-10-062015.pdf. GNI data from World Bank at https://api.worldbank.org/v2/en/indicator/NY.GNP.PCAP.PP.CD?downloadformat=excel)
- Poverty levels in South Africa are based on three national poverty lines, adjusted each year for inflation. The three poverty lines for 2022 were:
  - Upper Bound Poverty Line (UBPL), households who meet basic food needs and minimum essential non-food items (https://www.statista.com/statistics/1127838/national-poverty-line-in-south-africa/): ZAR 1,417 per month. Affordability at this poverty line is **ZAR 28.34** per month, impacting 8.43 million South Africans in 2015, rising to an estimated 10.7 million influenced by covid and current global insecurity in 2022;
  - Lower Bound poverty Line (LBPL): Households who live on survival foods, sacrificing some food needs for essential non-food survival items: R945 per month in 2022: 8.12million persons in 2015, rising to about 10.2 million South Africans in 2022; Target cost to communicate is **R18.9 per month** for 1GB of data;
  - Food Poverty Line (FPL), the amount of money required for minimum food intake for survival: R663 per month in 2022, 13.8 million South Africans in 2015, rising to about 17.3 million in 2022: Target cost to communicate at 2% of average income for 1GB of mobile data per month - ***R13.26 per month***

The price of 1GB mobile data per month in 2022 averaged ZAR 78.50, nearly three times the affordability for 10.7 million South Africans living below the UBPL, 4.2 times the affordability level of the 10.2 million South Africans living below the LBPL, and 6 times the affordability levels of 17 million South Africans living in extreme poverty.

Can any national ICT service provider meet the above pro-poor cost to communicate targets? The answer is an emphatic **NO!** An urgent need to find creative innovative solutions to meet the affordability needs of up to 38 million South Africans, about 63% of the population in 2022, possibly rising to 76% of the population according to The National Income Dynamics Study of 2019.

The 80+ members, sponsors, and supporters of the Alliance for Affordable Internet (https://a4ai.org/) have considered this conundrum deeply, and arrived at very specific recommendations for countries like South Africa, which feature deep income inequalities and therefore high levels of poverty within a comparatively wealthy industrialized economy.

The A4AI recommendation, that mass public access to the full range of broadband services is the best way to overcome deep affordability challenges, is extremely complex, demanding massive multidisciplinary interventions that cut across all branches of science, from the strictly technical challenges demanding high levels of competency in the STEM subjects, to the equally critical human sciences which define human behaviour in the absence or abundance of useful information and

knowledge, and the critical technological appropriation demanded for survival and growth in this technologically driven age.

The complexity is captured in all Sustainable Development Challenges defined by the seventeen SDGs, especially in SDG17 which suggests a holistic approach supported by fully inclusive stakeholder partnerships.

South Africa's 160-year long history of impressive appropriation of all evolutionary phases of ICTs, from the first telegraph system built in 1860, to the latest innovations of 5G, and visions for 6G and beyond in 2023, has failed to provide the empowering and transformative ICTs that can/must support the defeat of the triple threats which impose massive barriers to the development of the people of South Africa, and their country. (See ICT history in Table 3.0.1. page 107 of 171 in https://www.sakan.org.za/Docs/ICT4SDG8.pdf)

Perhaps a "people-centred" approach instead of a largely technological approach could be more effective, albeit extremely more difficult as observed by the referenced Daily Maverick article.

South Africa has tried nearly every variation of ICTs and their technological components and networks for the alleviation of inequality, poverty, and unemployment, with very little measurable or visible success. This statistical presentation offers yet another avenue to review the historical processes used by South Africa with so little success, in comparison with South Africa's demographic, economic, and geographic partners and peers. The unending search for solutions that will steer South Africa towards the right choices must continue - away from the social upheaval, dictatorship, and ultimately failed statehood discussed by the Daily Maverick and so many other respected thinkers, towards renaissance as suggested by many.

Renaissance – a renewal or reawakening of ancient human values and practices, most of which arose in South Africa's Cradle of Humankind some three million years ago, which continued to shape the human trajectory even through the extensive global trade links of the eleventh century Mapungubwe Kingdom, an appropriate historical name for the planned research by the *Mapungubwe Institute* aimed at restoring our humanity, in this era of immense technological change and dangerous global and local societal reversals.

A massive participative approach is needed, consistent with the stated or implied objectives of Sustainable Development Goal Seventeen (SDG17): "*Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.*"

[i] Prepared by Walter Brown, Johannesburg 10 March 2023. Please send comments to walterb@sakan.org.za