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## Brand South Africa

### Research - Internal Analysis 2022 Global Innovation Index

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#### 1. Executive Summary

The 2022 Global Innovation Index (GII), themed “What is the future of innovation-driven growth?” is the 15<sup>th</sup> edition released by the World Intellectual Property Organization. The annual innovation reports capture the innovation ecosystem performance of 132 economies and track the most recent global innovation trends.

Findings in the 2022 GII report indicate that the innovation sectors of the world economy are at a crossroads. Reflecting on the 2021 findings, science and innovation investments continued to surge, performing strongly even at the height of a once in a century pandemic. Moreover, international patent filings, Research & Development (R&D) expenditure, scientific publications and other key innovation metrics also showed continued growth.

Analysing the trend in Venture Capital (VC) deals. Statistics normally indicate that the pool of capital available for finance innovation shrinks at instances whereby economies encounter turbulences, with VC investments declining in line with the overall business cycle. However, with the COVID-19 crises at hand, there has been a silver lining that indicates a historic boom in VC activity, and a number of deals increasing by almost 50% in the last year.

On the other hand, even as the pandemic is getting better. It is predicted that storm clouds remain overhead, with increasing supply-chain, energy, trade and geopolitical stresses. Therefore, with the tightened pressure and competitiveness of economies in terms of

innovation, it is of utmost importance to understand the state of innovation as it is critical more than ever.

In the 2022 GII report, 26 countries are outperforming on innovation relative to their development. Of the 26, eight countries are from Sub-Saharan Africa. Similar to the 2021 report, South Africa maintains a ranking of 61/132 in the 2022 report, and still remains in the “upper middle income group”.

## **2. Key Global Findings**

Global findings collated in the 2022 report indicate that the innovation sectors of the world economy are at crossroads. It is also important to note that the data also shows that innovation investments thrived at the height of the COVID-19 pandemic and boomed in 2021. However, their continued resilience is uncertain for 2022 as the world meets new challenges. Moreover, technological progress, adoption and innovation’s socioeconomic impact all show signs of weakness - the future of innovation-driven growth is at stake.

The indicators of technological progress in the fields of semiconductor speeds, electric battery prices, the cost of renewable energy (with the exception of wind) and drug approvals show a significant slowdown from long-term trends, and even a decline in the case of drug approvals.

Technology adoption is progressing, with positive growth rates across technologies measured by the Global Innovation Tracker, and in particular for electric vehicles. However, penetration rates are still medium to low, with the exception of mobile broadband, which reaches the vast majority of the global population.

Largely due to the short-term influences of the COVID-19 pandemic, the socioeconomic impact of innovation seems to be at a low point, with labour productivity and life expectancy experiencing a significant slowdown if not coming to a complete standstill, and in the case of carbon dioxide emissions, failing to show ongoing reductions in pollution.

A number of countries have ensured that they outperform their counterparts within their regions, respectively. The top five innovative economies in the 2022 report are:

1. Switzerland
2. United States
3. Sweden
4. United Kingdom
5. Netherlands

Reflecting on the top five countries highlighted above:

- For the 12<sup>th</sup> year in a row, Switzerland ranks first in the 2022 GII report;
- The United States of America (US) overtakes Sweden to climb to 2<sup>nd</sup> position, and continues to head the league table of scoring best in the world on 15 of the 81 GII 2022 innovation indicators;
- Sweden falls down by one position in the 2022 report ranking 3<sup>rd</sup> compared to its 2<sup>nd</sup> ranking in 2021;
- Similar to the 2021 findings, the United Kingdom occupies the 4<sup>th</sup> position in 2022; and
- Netherlands climbs one position up to the 5<sup>th</sup> ranking in 2022 compared to the ranking it held in 2021.

Looking into the future of innovation, the 2022 GII report puts its hopes in two novel innovation waves:

- i) An upcoming Digital Age innovation which is built on supercomputing, artificial and automation that is on the verge of making ample productivity impacts across all sectors including services and helping to achieve scientific breakthroughs in basic sciences of all fields; and
- ii) A Deep Science innovation wave built on breakthroughs in biotechnologies, nanotechnologies, new materials and other sciences that is revolutionizing innovations in four fields of key importance to society: health, food, environment, and mobility.

With the two novels being strategically implemented, the positive effects that are directly linked to the implementation will take a long time to materialize as there are a number of obstacles, particularly in the area of technology adoption and diffusion have to be overcome first.

### **3. 2022 Key Findings on South Africa**

South Africa's ranking in the 2022 GII report remains the same as the score in 2021. In Sub-Saharan Africa, only Mauritius (45<sup>th</sup>) and South Africa (61<sup>st</sup>) rank among the top 80. South Africa's ranking keeps the country in the "upper-middle income" group.

The table below presents South Africa's global ranking and indicators in the years 2022 and 2021:

South Africa's Rankings and Indicators in the 2022 and 2021 GII Reports		
Year	2022	2021
<b>Overall Ranking</b>	<b>61/132</b>	<b>61/132</b>
1. Institutions	81/132	55/132
2. Human Capital and Research	81/132	67/132
3. Infrastructure	77/132	83/132
4. Market Sophistication	39/132	23/132
5. Business Sophistication	63/132	51/132
6. Knowledge and Technology Outputs	56/132	61/132
7. Creative Outputs	64/132	79/132

As presented in the above, South Africa ranks 61/132 in both the 2022 and 2021 GII reports. In terms of the indicators leading to the overall score, the country made progress in three indicators, and declined in four indicators:

- In relation to Institutions, the country's ranking declined from 55/132 in 2021 to 81/132 in 2022;
- The Human Capital and Research indicator also saw a decline from 67/132 in 2021 to 81/132 in 2022;
- Infrastructure improved with 6 points from 83/132 in 2021 to 77/132 in 2022;
- Market Sophistication declined with 16 points from 23/132 in 2021 to 39/132 in 2022;
- Business Sophistication declined with 12 points from 51/132 to 63/132 in 2022;
- An improvement is seen in the Knowledge and Technology Output with a 5 point improvement from 61/132 in 2021 to 56/132 in 2022; and
- A significant improvement is noted in the Creative Outputs indicator with a 15 point movement from 79/132 in 2021 to 64/132 in 2022.

Reflecting on the information provided above, it is evident that the country has maintained its ranking and position in the "upper-middle income" group. However, the declines noted in some of the indicator categories are a concern as they play a pivotal role not only in relation to the country's ranking in the report, but the hard realities faced by the country. The need to strategically overcome the challenges of noted declines is important to improve the country's competitiveness in the global environment.

Important to note is that South Africa still remains as the most industrialized economy in the African continent and a gateway for Foreign Direct Investment (FDI) in the continent. With the arrival of the COVID-19 pandemic in the global environment and African countries at large, most world functions were changed, bringing to light many limitations of existing systems and showing the need to re-imagine the role of informational technology as a tool for economic growth. This had led the pandemic to accelerate the velocity and effectiveness of technology innovation, adoption, policy and regulation around the world, especially developing countries like South Africa.

Moreover, using South Africa's overall ranking and indicators as an example, being one of the leading countries in the African continent in terms of innovation. It is evident from the findings that although African countries have benefited from the acceleration of technological uptake across sectors such as healthcare or economic transformation. The region still grapples in critical areas such as the sufficiency and productivity of Institutions, the availability of Human Capital and Research, adequacy of Market Sophistication etc.

However, an advantage for South Africa as one of the leading nations in the continent along with fellow member states is that the unique global policy momentum that had led to unlocking barriers to technology and innovation during the pandemic provides further evidence that governments can play a key role not only in enabling technological innovation, but supporting its diverse uptake and use.

## References

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