

Above the average enrolment rate on the continent are Tunisia, Egypt, Algeria, Mauritius, Morocco and Cape Verde. Botswana, Gabon and Senegal are also high on the rankings.

To combine these different components into a single index, the RAND index standardised the numbers to show national performance. The value of each national characteristic was compared to the international average.

Performance was ranked based on the number of standard deviations of the national value away from the international mean. The indicators were then weighted according to points for each criteria.

What we learnt from the 2011 study

A number of countries on the African continent are poised to reap the economic benefits of increased investment in science and technology.

Science has helped stimulate economic growth in regions investing in innovative solutions around the world.

The African Manifesto is a vision for a renaissance in science, technology and innovation for Africans, by Africans, in Africa.

South Africa, Egypt, Tunisia, Morocco, Algeria, Nigeria and Mauritius are among the front runners in this group poised to do well because of the investment in science, technology and innovation.

In sub-Saharan Africa, the countries with the greatest promise apart from South Africa and Nigeria are Benin, Botswana, Uganda, Mozambique, Ethiopia and Sudan.

The countries that ranked rather low but show some promise for joining the others in the future are Liberia, Guinea, Namibia, Cote d'Ivoire and Cameroon.

Tertiary foundation

To benefit from the science and technology, tertiary education must fulfil the role as a driver of growth and technological capability.

Countries like Japan, Finland, Sweden Korea, Taiwan and South Korea have shown how efforts to raise tertiary education standards can yield benefits for technological innovation.

Many experts in Africa acknowledge the crucial role of higher education in development as a key strategy to boost performance across economic sectors.

Among other benefits, higher education also provides the capacity to understand and use global knowledge in science and technology. An example of this is in agriculture and other sectors. Investment in higher education can speed the rate of technology catch-up in Africa and boost income.

Enrolment challenges

But Africa's tertiary education enrolment rates are among the lowest in the world. The African average is 7.1%, compared to 25.1% elsewhere in the world. Others on top of the African ranking and above the average enrolment rate on the continent are Tunisia, Egypt, Algeria, Mauritius, Morocco and Cape Verde. Botswana, Gabon and Senegal are also high on the rankings.

A small group of sub-Saharan African nations is showing above average enrolment rates in tertiary education, but still lagging behind in science and technology capability.