

Unprecedented Study Finds Singapore Ranks 13th Among Nations Investing in Education and Health Care

Nation's 2016 ranking rises significantly from 43rd in 1990; US drops from 6th to 27th

Study of 'human capital' yields other unexpected results over 26-year period

SEATTLE – Singapore ranks 13th in the world for its investments in education and health care as measurements of its commitment to economic growth, according to the first-ever scientific study ranking countries for their levels of human capital.

The nation placed just behind Switzerland (ranked 12th) and just ahead of Japan (ranked 14th).

“Our findings show the association between investments in education and health and improved human capital and GDP – which policymakers ignore at their own peril,” said Dr. Christopher Murray, director of the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. “As the world economy grows increasingly dependent on digital technology, from agriculture to manufacturing to the service industry, human capital grows increasingly important for stimulating local and national economies.”

The World Bank President, Dr. Jim Yong Kim, defines human capital as “the sum total of a population’s health, skills, knowledge, experience, and habits.” It is a concept that recognizes that not all labor is equal, and the quality of workers can be improved by investing in them.

Singapore’s ranking of 13th in 2016 represents a major improvement from its 1990 ranking of 43rd. It comes from having 24 years of expected human capital, measured as the number of years a person can be expected to work in the years of peak productivity, taking into account life expectancy, functional health, years of schooling, and learning.

Overall, Singapore's residents had 44 out of a possible 45 years of life between the ages of 20 and 64; expected educational attainment of 12 years out of a possible of 18 years in school; and a learning score of 98 and a functional health score of 82, both out of 100. Learning is based on average student scores on internationally comparable tests. Components measured in the functional health score include stunting, wasting, anemia, cognitive impairments, hearing and vision loss, and infectious diseases such as HIV/AIDS, malaria, and tuberculosis.

Kim has stated that measuring and ranking countries by their human capital will enable comparisons over time, thereby providing governments and investors insights into where critical investments are needed to improve health and education. Last year, he asked IHME to develop such a measurement.

"Measuring and ranking countries by their level of human capital is critical to focus governments' attention on investing in their own people," Kim said. "This study from IHME is an important contribution to the measurement of human capital across countries and over time."

The study, "Measuring human capital: A systematic analysis of 195 countries and territories, 1990 to 2016," was published in the international medical journal *The Lancet*. It is based on a systematic analysis of an extensive array of data from numerous sources, including government agencies, schools, and health care systems.

The study places Finland at the top. Turkey showed the most dramatic increase in human capital between 1990 and 2016; Asian countries with notable improvement include China, Thailand, Singapore, and Vietnam. Within Latin America, Brazil stands out for improvement. All these countries have had faster economic growth over this period than peer countries with lower levels of human capital improvement.

In addition, the greatest increase among sub-Saharan African countries was in Equatorial Guinea. Some of the world's most rapid improvements were in the Middle East, including Saudi Arabia and Kuwait.

Over the past quarter century, there has been limited progress in building human capital in selected countries that started at a high baseline. The US was ranked sixth in human capital in 1990 but dropped to 27th in 2016 because of minimal progress, particularly in educational attainment, which declined from 13 years to 12.

Health and education advocates, economists, and others should use the findings as evidence to argue for greater attention to – and resources for – improving their nations’ human capital.

“Underinvesting in people may be driven by lack of policy attention to the levels of human capital,” Murray said. “No regular, comparable reporting across all countries on human capital currently exists. Such reporting over the next generation – as a way to measure investments in health and education – will enable leaders to be held accountable to their constituents.”

Researchers found that nations with greater improvements in human capital also tend to have faster growth in per capita GDP. Countries in the highest quartile of improvements in human capital between 1990 and 2016 had a 1.1% higher median yearly GDP growth rate than countries in the bottom quartile of human capital improvements. For example, between 2015 and 2016, a 1.1% increase in the GDP growth rate in China equated to an additional \$163 per capita; in Turkey, \$268 per capita; and in Brazil, \$177 per capita.

The study focuses on the number of productive years an individual in each country can be expected to work between the ages of 20 to 64, taking into account years of schooling, learning in school, and functional health. The calculation is based on systematic analysis of 2,522 surveys and censuses providing data on years of schooling; testing scores on language, math, and science; and health levels related to economic productivity.

Among other findings:

- At the top of the listing of 195 nations, Finland’s level of expected human capital in 2016 was 28 years, followed immediately by Iceland, Denmark, the Netherlands (each with 27 years), and Taiwan (26 years).

- Niger, South Sudan, and Chad all ranked lowest in 2016 at 2 years, followed by Burkina Faso and Mali (each with 3 years).
- In 2016, 44 countries surpassed more than 20 years of expected human capital, while 68 countries had fewer than 10 years.
- Rankings for the 10 most populous countries in 2016, in addition to China, India, and the United States were Indonesia (131st), Brazil (71st), Pakistan (164th), Nigeria (171st), Bangladesh (161st), Russia (49th), and Mexico (104th).

There were notable differences in expected human capital by sex in 2016. Across the board, expected years lived between 20 and 64 years are greater in females than in males. In addition, health status tends to be higher among females than males, with the exception of high-income countries. In terms of the overall measure, for countries below 10 years of expected human capital, rates of human capital tend to be higher in males, while countries above 10 years tend to have higher expected human capital for females.