

## Japan's Challenges in Addressing Demographic Decline

Akiyoshi Yonezawa

### Abstract

Facing an ongoing demographic decline, Japan's higher education is now trying to develop new ecosystems for science, technology, innovation, and human resource development. The higher education system should engage with a wide range of stakeholders and be open in global, national and local dimensions with a long-term vision. Such a transformation in a dialogue between higher education and society is a major challenge, although the country does not have much time left before further decline.

In July 2023, the Japanese government projected further demographic decline and presented the potential impact on the youth population and enrollment in higher education through 2050. These projections highlight three main features. First, the demographic decline is accelerating, largely due to the further decline in the fertility rate in the wake of the COVID-19 pandemic. Second, detailed estimates were published for all 47 prefectures, although their estimation neglected the likely concentration of student enrollment in the Tokyo metropolitan area. Finally, the projections included the expected number of international students in their scenarios, which was a first, while the estimated proportion of international students was set at a relatively modest 3 to 8 percent.

The declining youth population poses a significant threat to higher education in East Asia, where almost every society (South Korea, China, Hong Kong, and Taiwan, in addition to Japan) faces a low birth rate. Historically, East Asian economies have maintained their competitiveness through highly motivated students and workers in hierarchical higher education systems that have typically concentrated resources in a select group of elite research universities. However, the decline in the youth population, driven by

the need for high educational investment per child, could lead to a weakening of the student selection function at elite and semi-elite universities, the downsizing or closure of programs and universities due to oversupply, and a reduced talent pool in the labor market. This trend is particularly worrisome for Japan, where long-term aging has already caused significant socioeconomic damage. In 2022, two people aged 15–65 had to support one person over 65, and the ratio will worsen to 3:2 by 2045.

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### Underperformance of Academic Excellence Initiatives

I recently conducted a comprehensive analysis of Japan's higher education policy over the past three decades, focusing on the underperformance of academic excellence initiatives. Official government reports highlight steady progress in internationalization and management reforms in education, research, and social services at leading universities. Nevertheless, the government's 2013 initiatives aimed at promoting world-class universities as symbols of the nation's commitment to science, technology, and innovation have fallen short of their goal of placing 10 Japanese universities among the world's top 100 by 2023. According to the Academic Ranking of World Universities (ARWU), by 2022, only two Japanese universities reached the top 100, down from five in 2003 and three in 2013. The five factors identified for this shortfall include:

- Insufficient university reform efforts and deepening bureaucratic micromanagement.
- Underfunding of higher education due to budget constraints and stagnant tuition fees.
- An aging society and shrinking domestic talent pool, exacerbated by inadequate efforts to increase female and international student enrollment.
- Slow internationalization of higher education and society due to language and cultural barriers.
- Underdeveloped reward systems for skills and knowledge in the national labor market.

All these factors are interrelated. For example, slow internationalization is influenced by bureaucracy, underfunding, aging, and an underdeveloped reward system. At the same time, a declining youth population and a shortage of human resources mean less competition in higher education and job opportunities for domestic students. An aging society tends to be more conservative and reluctant to change. There is a high risk of a vicious cycle leading to the decline of or catastrophe in Japan's higher education system and society as a whole, especially in rural areas. Recent policy discussion on demographic change in higher education demonstrates a shared sense of crisis among stakeholders in higher education, government, and industry.

### Two Ecosystems to Change the Future

The government is now trying to develop two ecosystems to help Japanese society adapt to the global knowledge economy: a knowledge ecosystem that aims to generate knowledge values through science, technology, and innovation, and a human resource development ecosystem that aims to cultivate highly skilled knowledge workers capable of integrating into globalized talent pools and activate national economy. The idea of an ecosystem is introduced for the development of a sustainable virtuous cycle by involving various types of stakeholders, such as governments, industry, universities, and academics at global, national, and local levels.

In the case of Japan, the idea of a knowledge ecosystem has been widely accepted in the last 10 years, in line with the national science, technology, and innovation policy, paying attention to the research function of top universities and their collaboration with industry. More recently, the government has begun to emphasize the need for multi-stakeholder involvement in human resource development. Globalization and population decline have increased the diversification and divide among the youth and their families. Now the Japanese government and society realize the need for active coordination among a wide range of stakeholders when it comes to education and human resource development. Again, higher education is a key component for realizing the virtuous cycle of this ecosystem for human resource development.

To build a knowledge ecosystem, the government has launched a national fund based on a bond of about USD 70 billion, much larger than a series of fragmented academic excellence initiatives over the past 20 years. The plan is to use this fund to support a very limited number of top universities—possibly two or three—over 25 years. These

universities are expected to develop their own endowments and achieve financial autonomy. The government is also supporting a wide range of research activities to maintain and develop the national infrastructure for science, technology, and innovation.

For the human resources development ecosystem, the government now aims to increase the number of international students from 300,000 in 2019 (before the COVID-19 pandemic) to 400,000 by 2033, and the number of Japanese students studying abroad from 222,000 to 500,000 over the same period. In addition, the government is actively supporting the expansion of STEM-related programs such as information science and green technology, especially to enroll more female students.

Building these two ecosystems and achieving these policy goals will undoubtedly be a significant challenge. The connection between the government and universities needs to shift from a principal-agent relationship characterized by short-cycle performance assessment under new public management to a multistakeholder engagement with long-term dialogues for mutual development in both higher education and society in general. There is a need to change the attitudes of a wide range of stakeholders towards building more internationally open, global citizenship-oriented intercultural communities in both higher education and society in general. This is a long way to go, but this country does not have time under the severe, long-term pressures of demographic decline. ▲

*Akiyoshi Yonezawa is professor and vice-director, Tohoku University, Japan. E-mail: [akiyoshi.yonezawa.a4@tohoku.ac.jp](mailto:akiyoshi.yonezawa.a4@tohoku.ac.jp).*