



The environmental and economic impact of COVID-19 on Japan's tourism industry

Researchers find the economic, social, and environmental impact of the COVID-19 pandemic on Japan's international tourism industry

Fukuoka, Japan—It goes without saying that the tourism industry in Japan is booming. Walk around any major city and you'll see people from all around the world enjoying the country's food, culture, and hospitality. Naturally, the revenue generated by the industry has had a positive economic impact throughout Japan. However, between 2020 and 2022, the tourism industry was hit particularly hard due to the COVID-19 pandemic and subsequent travel restrictions. While the government implemented policies to support the industry, the full impact of the pandemic on the economy is still being studied.

Now, economists at Kyushu University have published new data on the economic, social, and environmental impacts of the COVID-19 pandemic on Japan's inbound tourism industry. The report, published in the [*Journal of Industrial Ecology*](#), presents data on the loss of yen, loss of employment opportunities, and reduction in CO₂ emissions from Japan's tourism industry in 2020.

"I began this project when I was an undergraduate student in 2021, right in the middle of the pandemic. 2020 saw the loss of around 33 million tourists coming into Japan. My research interest was the tourism industry, so I started researching the impact of the pandemic and travel restrictions on the sector," explains first author [Yusuke Oga](#) PhD candidate and JSPS Research Fellow at [Kyushu University's Graduate School of Economics](#). "I have also been researching how to make the tourism industry more sustainable. So, in this study, I also wanted to examine how the pandemic affected the industry's environmental impact."

The team decided to focus on the year 2020, when the first travel restrictions were implemented. They first constructed a 'counterfactual scenario,' simulating the industry's 2020 economic output if there had been no pandemic. This was then compared to the actual 2020 data.

Their analysis implemented an input-output analysis framework—a method that integrates the direct and indirect effects of the economy—into three factors: economic, social, and environmental. In addition, each factor was evaluated on three economic effects: direct, indirect, and income. Direct effects include industries directly affected by tourism, such as hotels, services, or the gift industry. Indirect effects refer to industries outside of the tourism industry that still play a major role, such as the energy industry or food producers and suppliers. Finally, income effects cover direct spending of the Japanese people from the money that comes into the tourism industry.

"Our analysis showed that the economic impact of the pandemic on the tourism industry was a loss of 3.44 trillion Japanese yen, or about 22 billion US dollars. The most affected industries were the food and beverage services like restaurants, hotels, and wholesalers," continues Oga. "On the societal side it resulted in the employment declines for 868,976 people. The highest employment losses were also seen in restaurants and hotels."

Their environmental analysis revealed a significant reduction in CO₂ emissions. The data showed that restrictions on inbound tourism resulted in a reduction of 11.6 megatons (Mt) of CO₂ emissions. In 2020, the average annual CO₂ emission of a Japanese household was [2.88 tons](#). 11.6 Mt is equivalent to the annual emissions of approximately 4 million households.

[Professor Shigemi Kagawa](#), who led the study, explains that this new data can provide policymakers with a clearer view of the economics of the tourism industry and help them better prepare and focus the government's support network should a crisis similar to COVID-19 occur in the future. Moreover, the environmental data shows that Japan should make efforts to promote sustainable tourism.

"Tourism in Japan will likely continue to grow, so we must consider its environmental impact. Finding the right policies and incentives will be difficult, but I think it is possible," concludes Oga. "Our next step will be to analyze prefectural level data and see what differences there are locally. Additionally, this methodology can be applied to tourism data from other countries. I would be interested to see what the data looks like on global scale."

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For more information about this research, see "Triple Bottom Line Analysis of the Decline in Foreign Tourist Demand in Japan due to the COVID-19 Pandemic: Counterfactual Structural Decomposition Approach," Yusuke Oga, and Shigemi Kagawa, *Journal of Industrial Ecology*, <https://doi.org/10.1111/jiec.13615>

About Kyushu University

Founded in 1911, [Kyushu University](#) is one of Japan's leading research-oriented institutes of higher education, consistently ranking as one of the top ten Japanese universities in the Times Higher Education World University Rankings and the QS World Rankings. The university is one of the seven national universities in Japan, located in Fukuoka, on the island of Kyushu—the most southwestern of Japan's four main islands with a population and land size slightly larger than Belgium. Kyushu U's multiple campuses—home to around 19,000 students and 8000 faculty and staff—are located around Fukuoka City, a coastal metropolis that is frequently ranked among the world's most livable cities and historically known as Japan's gateway to Asia. Through its [VISION 2030](#), Kyushu U will "drive social change with integrative knowledge." By fusing the spectrum of knowledge, from the humanities and arts to engineering and medical sciences, Kyushu U will strengthen its research in the key areas of decarbonization, medicine and health, and environment and food, to tackle society's most pressing issues.

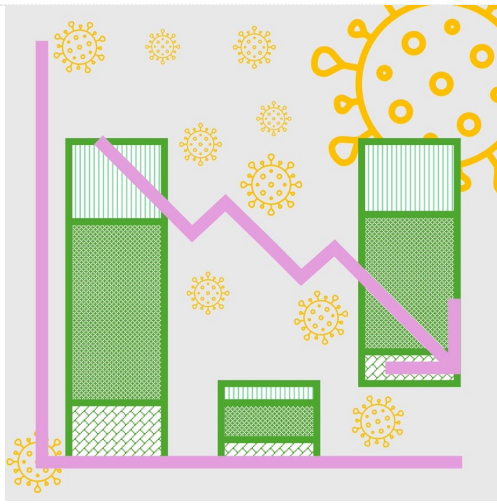


Fig. 1. The economic, social, and environmental and economic impact of COVID-19 on Japan's tourism industry. New data from Kyushu University shows the economic, social, and environmental impact of the COVID-19 pandemic on Japan's inbound tourism industry in the year 2020. That year saw the loss of 33 million inbound tourists, resulting in 3.44 trillion yen of value-added losses, and a decline in employment for 868,976 people, and a reduction of 11.6 megatons of CO₂. (Kyushu University/Shigemi Kagawa)



Fig. 2. Inbound tourism in Japan. The bamboo grove in Arashiyama, Kyoto. A popular destination for many international tourists. (Kyushu University/Shigemi Kagawa)

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