

# Critical analysis on the global consumption of Japanese sashimi cuisine through the lens of sustainability

Yang Yajing\*

James Cook University, Singapore 387380, Singapore

\*Corresponding Author: Yang Yajing

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**Abstract:** The development of tourism and hospitality in a country depends to some extent on the popularity of local delicacies. However, in the contemporary era, there is a phenomenon that people can see many foreign restaurants in their own country, this is a need to consider, in this phenomenon behind, what kind of impact hidden, whether the impact is conducive to the sustainable development of society as a whole. In this study, the focus is on the global consumption of Japanese sashimi cuisine. Japanese sashimi cuisine, as one of the most characteristic local delicacies in Japan, is very popular among the public. It is closely related to hospitality, tourism, and fishery. In recent years, the global consumption of Japanese sashimi cuisine has gradually become an irresistible trend. However, in this trend, there are positive and negative impacts on the economy, social culture and environment of Japan and other countries, and a lot of things about tourism and hospitality are included in the impact on these three aspects. Therefore, this study will make a critical analysis of the global consumption of Japanese sashimi cuisine from the perspective of sustainable development, and give some suggestions on the problems and challenges, it is hoped to provide valuable information, direction and progress for future research.

## 1. Introduction

The most famous food in Japan must be sushi and sashimi, among which sashimi is the representative of Japanese food culture, which has been the center of Japanese cuisine since ancient times. Japanese state banquets or common people's banquets treat sashimi as the highest etiquette. Sashimi in Japanese writing さしμι. Sashimi is the lightest dish in Japanese cuisine. Its culinary materials mainly include sea fish, shellfish, shrimp, squid, and other seafood. Therefore, Japan's local hospitality and tourism industry also regard Japanese sashimi cuisine as one of the important attractions. Today, in the era of globalization, in line with the trend of the development of The Times, the local gastronomies of various countries has gradually appeared in the streets and lanes of other countries, Japanese sashimi cuisine is no exception, and is very popular among people of certain other countries. However, behind this phenomenon, this paper will use the concept of sustainable development and triple bottom line theory to critically analyze and evaluate the positive and negative impact of global consumption of Japanese sashimi cooking on economy, social culture and environment, and how to deal with the negative impact.

## 2. Literature review

### 2.1 The origin of Japanese sashimi cuisine

Japan is located in the east of Eurasia and the west of the Pacific Ocean. It is composed of thousands of islands, forming an arc. Japan's territory is completely surrounded by the sea and is not connected with the land of any country (Petry, 2003). Facing Japan's unique geographical location with a coastline of at least 30000 km (the sixth longest coastline in the world) and adjacent to some of the richest and most fertile fishing grounds on the earth, which make its people and seafood indissoluble. And in the long-term coexistence of people and the sea, and the symbiosis of fisheries,

gradually formed a unique "seafood culture". In addition, due to Japan's small land area and lack of resources, it is particularly aware of environmental protection and advocating nature. Japanese believe that raw food can retain the freshness of fish to the greatest extent, and only fresh and unprocessed food can have a natural color (Ashkenazi & Jacob, 2013). In the past, when Japanese Hokkaido fishermen served raw fish fillets, because it was not easy to identify the species of the fillets after peeling off the skin, they would often take some skin and stick it on the fillets to facilitate identification; bamboo sticks and fish skin inserted into the fillets were originally called sashimi; later, although this method was no longer used, the term "Sashimi" was retained (Martínez-Garmendia & Anderson, 2005). Sashimi, simply put, is a kind of fresh meat that can be eaten raw, washed and cut into thin slices, dipped in a sauce to eat raw food, food ingredients are fish, shellfish, shrimp, crab, chicken, beef, horse meat and so on can be used as sashimi ingredients, fish sashimi is the most common (Phan et al., 2011). Sashimi originally came from the Kansai region of Osaka in Japan. It was called "otsukuri" at that time. It originated more than 1000 years ago. It has been the core element of Japanese cuisine since Edo period (1603-1868). By the middle of the 20th century, with the invention of refrigerator, sashimi was further popularized. In recent years, high performance refrigerators, cold storages and cold chain systems have been developed. In addition, a live fish distribution system was developed. Therefore, the quality of sashimi is getting higher and higher (Murata, 2010).

## **2.2 The development of Japanese sashimi cuisine**

In the past, the sashimi market was limited to Japan, but in the 1990s, this form of consumption gradually expanded to Europe and North America. Nonetheless, Japan remains the largest (both in terms of volume and value) and most influential market. In recent years, the sashimi market has also sprung up in Asian countries such as China and Singapore. In Japanese sashimi cuisine, the preferred ingredients are salmon and tuna. Among them, the main species of tuna used for sashimi cuisine are three kinds of bluefin tuna (Atlantic bluefin tuna, Pacific bluefin tuna and southern bluefin tuna), most of the tuna shipped to the sashimi market was caught by the longline fleet, while fattening farms supplied most of their bluefin tuna to the Japanese market. In Japan, 90% of tuna is consumed as Sashimi and Sushi, and only 10% is sold in cans. The global sashimi market is estimated at 601,350 tons (live weight) per year (Kawamoto, 2016; Hamilton et al., 2011). Japan is the largest market in the world, accounting for more than 80% of consumption. The United States is second with 47,000 tons and is a growing market. With the increasing popularity of Japanese food in East Asian countries, the secondary market is gradually developing (Kawamoto, 2016). These sashimi markets are also globally integrated and linked to the Japanese market (Lecomte et al., 2017).

## **2.3 The current state of Japanese sashimi cuisine**

Sushi and sashimi consumption are becoming more and more popular in the European and American markets, especially in the food service industry, where there are about 16000 sushi restaurants (Lecomte et al., 2017). In addition, at present, the growth of world population and income indicates that the global demand for tuna (whether fresh or canned) may change in the future. Based on various assumptions about world population growth and per capita GDP growth of some emerging countries, some authors predict that the world's demand for tuna is likely to reach 7.8 million tons by 2025 (Lecomte et al., 2017). In this literature, the author only analyzes the tuna market. However, in the face of the increasing popularity of Japanese sashimi cuisine, the fishery is facing great pressure, and the annual increase of fishing volume, leading to the decline of some other valuable fish besides tuna, such as wild Atlantic salmon. Nonetheless, the current development of COVID-19 is that raw fish food is under strict control because the virus prefers to live in cold temperatures and raw fish food is kept in cold storage, in order to prevent food from being covered with the virus; consumers are also gradually reducing their consumption of Japanese sashimi cuisine after learning this information; only when the epidemic situation improves, people will feel relieved to eat Japanese sashimi cuisine (Sajjad et al., 2020).

## **2.4 Tourism, globalization, and sustainable development**

Gastronomy is one of the most important motivations for tourists to choose a destination. Moreover because of the unique local gastronomy, interested tourists will choose to visit the destination repeatedly (Kivela & Crotts, 2009). In addition, when tourists visit a tourist destination, there will be some influencing factors for the tourists' food consumption, mainly involving social demographic factors, cultural / religious influences, food related personality traits, exposure effects / past experience and motivation factors, which will make tourists think about what kind of food they want or not when facing the local food (Mak et al., 2012). Furthermore, local food may affect tourists' pre-trip behavior, for example, in information search. Research shows that this search behavior will affect the image of hotels, tourism services and destinations, and then affect the perception of the destination food market before travel (Björk & Kauppinen-Räisänen, 2016). With the development of globalization, people need to take a new perspective on this important element of gastronomy. First, globalization is a process driven and led by cross-border flows of goods, services, capital, people, information and culture (Guillén, 2001). Secondly, there is a strong interaction between globalization and food consumption in the context of tourism (Mak et al., 2012). Ordinary citizens of the world will have more and more access to different countries' dishes and products through various opportunities. According to research, this trend can be seen as a threat, but also as a driving force to provide new opportunities for the reinvention of local gastronomic products and identity (Mak et al., 2012). Therefore, in the face of these changing factors, people need to think about how to achieve sustainable development in the field of gastronomy. In 1987, the World Commission on environment and development published "Our Common Future" report, which defined sustainable development as "development that can meet the needs of contemporary people and does not harm the ability of future generations to meet their needs. "<sup>[2]</sup>

## **3. Critical analysis on the global consumption of Japanese sashimi cuisine through the lens of sustainability**

### **3.1 The impact of global consumption of Japanese sashimi cuisine on economy**

First, this article analyzes the economic impact of global consumption of Japanese sashimi cuisine on Japan itself. Japanese sashimi cuisine, as one of the main selling points of Japan's gastronomy and tourism industry, is also one of the important reasons for attracting tourists from all over the world to visit here. After the globalization of Japanese sashimi cuisine, people all over the world can enjoy delicious and authentic Japanese sashimi cuisine in their hometown. At this time, the position of sashimi as one of the important attractions of Japan may be threatened. This will greatly affect the economic income of local restaurants and gastronomy tourism projects in Japan with sashimi cuisine as a bright spot, thus having a certain impact on the economy of Japan. Meanwhile, although sashimi cuisine originated in Japan, today, many of Japan's sashimi raw materials are heavily dependent on foreign imports (Lecomte et al., 2017). And many professional Japanese chefs choose to develop sashimi cuisine in other countries, so the globalization of Japanese sashimi cuisine will undoubtedly have a certain degree of inhibition on the economic development of Japan's hospitality.

Secondly, from an international perspective to analyze the impact of global consumption of Japanese sashimi cuisine on the economy. With the increasing popularity of Japanese sashimi cuisine in other countries, not only many Japanese sashimi restaurants have appeared in other countries, but also Japanese sashimi cuisine counters have appeared in many large supermarkets abroad, which to a certain extent promotes the development of international food service industry, as well as the development of Japanese local catering industry overseas. Moreover, when people taste Japanese sashimi in their hometown, they will be familiar with this food, so they may prefer to eat sashimi when they go to Japan (Mak, 2012). Torres (2002) expressed the view that globalization may lead to a growing interest in eating local or ethnic food, because many people around the world are now increasingly exposed to a variety of ethnic dishes and products. Therefore, from this perspective, it will also contribute to the local hospitality industry in Japan, thus promoting the local

economic development.

### **3.2 The impact of global consumption of Japanese sashimi cuisine on social culture**

Social culture is a general term for all kinds of cultural phenomena and activities, which are closely connected with the production and living reality of the masses at the grass-roots level, created by the masses at the grass-roots level, with regional, national or group characteristics, and exert extensive influence on the social groups (Hegarty & O'Mahony, 2001).

Firstly, for Japan, sashimi cuisine, as the representative of Japanese food culture, when it is popular in other countries, it also brings the food culture of Japanese culture to other countries. Whenever other countries' people enjoy Japanese sashimi cuisine at home or in Japanese restaurants, they can perceive Japanese food culture, values and life attitude to a certain extent. Therefore, the global consumption of Japanese sashimi cuisine promotes the spread and development of Japanese food culture in other countries to a certain degree.

Secondly, from an international perspective, on the one hand, with the increasing popularity of Japanese sashimi cuisine in other countries, many Japanese sashimi restaurants have appeared in the streets of other countries, which will have a certain impact on the identity and image of local gastronomy in other countries (the overall impression of the gastronomic scene in a destination), and can result in the deprivation of a 'sense of place' for both locals and tourists (Richards, 2002). However, on the other hand, when people from other countries taste Japanese sashimi cuisine, they can absorb the excellent food culture and culinary skill of Japanese sashimi cuisine into their own cuisine, thus providing new opportunities for the reinvention of their own gastronomic products, identities, and food cultures (Mak et al., 2012).

### **3.3 The impact of global consumption of Japanese sashimi cuisine on environment**

The main ingredient of Japanese sashimi cuisine is fish. With the increasing consumption trend of Japanese sashimi cuisine in various countries around the world, the supply of certain kinds of fish is also increasing correspondingly. Therefore, this phenomenon has a great impact on the global environment. First, it leads to the depletion of natural fish resources and stimulates the expansion of aquaculture (Ellis, 2003). For example, York and Gossard (2004) pointed out that due to industrial fishing, the biomass of large predatory fish has declined dramatically. And aquaculture is a threat to the environment, because it requires many of the same inputs (such as grain, energy) as feedlots, and leads to the transformation of coastal ecosystems such as mangroves to fish and shrimp ponds (York & Gossard, 2004). Secondly, the Japanese sashimi cuisine uses some very precious fish as raw material, such as Atlantic bluefin tuna and Atlantic salmon (Lecomte et al., 2017). Due to a large number of commercial fishing, they have become endangered species, which seriously damages the healthy ecosystem. In addition, the large-scale commercial fishing conducted by the fishery will drag fish across the sea floor through fishing gear (trawls and dredgers), which seriously disturbs the benthic habitats (Thrush et al., 1998). Hence, global consumption of Japanese sashimi cuisine will have a serious negative impact on the global environment.

## **4. Conclusion**

This paper critically analyzes the phenomenon of global consumption of Japanese sashimi cuisine from the perspective of sustainability and finds that this phenomenon has both negative and positive effects on the economy, social culture and environment of all countries in the world. Therefore, this phenomenon requires governments, relevant institutions, and hospitality industry in the world to maintain and develop well in the face of the positive impact, so as to promote the well-being of people all over the world, while in the face of the negative impact, they need to make timely correction and take effective measures to prevent the spread of the negative impact and damage the ecological home of human life.

## 5. Recommendations

### 5.1 Japan's domestic sashimi cuisine restaurants need innovation

Facing the fierce competition of global consumption of Japanese sashimi cuisine, the Japanese domestic sashimi restaurants need to innovate. Local sashimi restaurants in Japan need to know the types of sashimi cuisine in different countries and the taste preferences of contemporary people. Then, on this basis, domestic sashimi restaurants in Japan carry out reform and innovation on their sashimi cuisine, so as to make their sashimi cuisine more unique, newness, and locality in both the taste and the types of ingredients, and to achieve the taste that can only be tasted in Japan, which is different from Japanese sashimi cuisine in other countries. Through this method, the sashimi restaurant, hospitality industry and food tourism in Japan can be more sustainable.

### 5.2 Explore alternative food materials for Japanese sashimi cuisine

In the face of a significant decline in the biomass of some valuable marine species in the world, Japanese sashimi cuisine should stop using these marine organisms as food materials. At the same time, explore other more common and fully cultured seafood products as food materials, and even develop artificial fish meat through science and technology to replace those precious marine organisms. In this way, people can not only continue to enjoy delicious Japanese sashimi cuisine, but also effectively alleviate the living environment of marine organisms and the problem of fish protection. In addition, it also greatly avoids the risk of food poisoning caused by eating raw ready-to eat seafood (Kim et al., 2017).

## References

- [1] Ashkenazi, M., & Jacob, J. (2013). *The essence of Japanese cuisine: An essay on food and culture*. Routledge. [https://books.google.com.sg/books?hl=zh-CN&lr=&id=RSZTAQAAQBAJ&oi=fnd&pg=PP1&dq=history+and+culture+of+japanese+food&ots=M9bmxy0XH&sig=7GmmAtJa3-\\_hP7kABcUNWGCgacU&redir\\_esc=y#v=onepage&q=history%20and%20culture%20of%20japanese%20food&f=false](https://books.google.com.sg/books?hl=zh-CN&lr=&id=RSZTAQAAQBAJ&oi=fnd&pg=PP1&dq=history+and+culture+of+japanese+food&ots=M9bmxy0XH&sig=7GmmAtJa3-_hP7kABcUNWGCgacU&redir_esc=y#v=onepage&q=history%20and%20culture%20of%20japanese%20food&f=false)
- [2] Brundtland, G. H., Khalid, M., Agnelli, S., Al-Athel, S., & Chidzero, B. (1987). Our common future. New York, 8. <https://www.are.admin.ch/are/en/home/Sustainable-development/international-cooperation/2030agenda/un-milestones-in-sustainable-development/1987--brundtland-report.html>
- [3] Björk, P., & Kauppinen-Räsänen, H. (2016, January 11). Local food: a source for estination attraction. *International Journal of Contemporary Hospitality Management*. <https://www.emerald.com/insight/content/doi/10.1108/IJCHM-05-2014-0214/full/html>
- [4] Ellis, R. (2003). *The empty ocean*[M]. Island Press.
- [5] Guillén, M. F. (2001, August). Is globalization civilizing, destructive or feeble? A critique of five key debates in the social science literature. *Annual review of sociology*, 27(1), 235-260. <https://www.annualreviews.org/doi/abs/10.1146/annurev.soc.27.1.235>
- [6] Hegarty, J. A., & O'Mahony, G. B. (2001). Gastronomy: A phenomenon of cultural expressionism and an aesthetic for living. *International Journal of Hospitality Management*, 20(1), 3-13. <https://doi.org/10.1177/1096348008329868>
- [7] Hamilton, A., Lewis, A., McCoy, M. A., Havice, E., & Campling, L. (2011, June). Market and industry dynamics in the global tuna supply chain. In *Solomon Islands: the Pacific Islands Forum Fisheries Agency*.
- [8] Kivela, J. J., & Crofts, J. C. (2009, April 22). Understanding travelers' experiences of gastronomy through etymology and narration. *Journal of Hospitality & Tourism Research*, 33(2), 161-192. <https://journals.sagepub.com/doi/abs/10.1177/1096348008329868>
- [9] Kawamoto, T. (2016, May). Tuna market in Japan, current status, challenges, and prospects. In

- Presentation at the Infofish-Tuna Trade Conference* (pp. 23-25).<http://infofish.org/v2/images/tunaslide/Taro%20Kawamoto.pdf>
- [10] Kim, H. W., Hong, Y. J., Jo, J. I., Ha, S. D., Kim, S. H., Lee, H. J., & Rhee, M. S. (2017, October 16). Raw ready-to eat seafood safety: microbiological quality of the various seafood species available in fishery, hyper and online markets. *Letters in applied microbiology*, 64(1), 27-34. <https://doi-org.elibrary.jcu.edu.au/10.1111/lam.12688>
- [11] Lecomte, M., Rochette, J., Lapeyre, R., & Laurans, Y. (2017, September). *Tuna: fish and fisheries, markets and sustainability*. Developpement Durable & Relations Internationales. <https://www.iddri.org/sites/default/files/IMG-PHOTOS/Publis-Covers/201811-Tuna-gloablEN.pdf>
- [12] Martínez-Garmendia, J., & Anderson, J. L. (2005). Conservation, markets, and fisheries policy: the North Atlantic bluefin tuna and the Japanese sashimi market. *Agribusiness: An International Journal*, 21(1), 17-36. <https://doi.org/10.1002/agr.20034>
- [13] Miyake, M. P., Guillotreau, P., Sun, C. H., & Ishimura, G. (2010). *Recent developments in the tuna industry: stocks, fisheries, management, processing, trade and markets*. Rome, Italy: Food and Agriculture Organization of the United Nations. <https://epub.sub.uni-hamburg.de/epub/volltexte/2011/7090/pdf/i1705e.pdf>
- [14] Murata, Y. (2010, May 10). Sashimi and sushi products. In *Second International Congress on Seafood Technology on Sustainable, Innovative and Healthy Seafood* (p. 109). <http://www.fao.org/3/i2534e/i2534e.pdf#page=119>
- [15] Mak, A. H., Lumbers, M., & Eves, A. (2012, January). Globalisation and food consumption in tourism. *Annals of tourism research*, 39(1), 171-196. <https://doi-org.elibrary.jcu.edu.au/10.1016/j.annals.2011.05.010>
- [16] Mak, A. H., Lumbers, M., Eves, A., & Chang, R. C. (2012, September). Factors influencing tourist food consumption. *International Journal of Hospitality Management*, 31(3), 928-936. <https://doi-org.elibrary.jcu.edu.au/10.1016/j.ijhm.2011.10.012>
- [17] Petry, A. K. (2003). Geography of Japan. Japan Digest. [https://spice.fsi.stanford.edu/docs/geography\\_of\\_japan](https://spice.fsi.stanford.edu/docs/geography_of_japan)
- [18] Phan, V. T., Ersbøll, A. K., Do, D. T., & Dalsgaard, A. (2011). Raw-fish-eating behavior and fishborne zoonotic trematode infection in people of northern Vietnam. *Foodborne Pathogens and Disease*, 8(2), 255-260. <https://doi.org/10.1089/fpd.2010.0670>
- [19] Richards, G. (2002). Gastronomy: An essential ingredient in tourism production and consumption. *Tourism and gastronomy*, 11, 2-20. <https://www.taylorfrancis.com/books/e/9780203218617/chapters/10.4324/9780203218617-7>
- [20] Sajjad, W., Din, G., Rafiq, M., Iqbal, A., Khan, S., Zada, S., ... & Kang, S. (2020). Pigment production by cold-adapted bacteria and fungi: colorful tale of cryosphere with wide range applications. *Extremophiles*, 24, 447-473. file: [///C:/Users/dell/Downloads/Sajjad2020\\_Article\\_PigmentProductionByCold-adapte.pdf](///C:/Users/dell/Downloads/Sajjad2020_Article_PigmentProductionByCold-adapte.pdf)
- [21] Thrush, S. F., Hewitt, J. E., Cummings, V. J., Dayton, P. K., Cryer, M., Turner, S. J., Funnell, G.A., Budd, R.G., Milburn, C.J., & Wilkinson, M. R. (1998, August). Disturbance of the marine benthic habitat by commercial fishing: impacts at the scale of the fishery. *Ecological applications*, 8(3), 866-879. <https://www-jstor-org.elibrary.jcu.edu.au/stable/2641273>
- [22] Torres, R. (2002). Toward a better understanding of tourism and agriculture linkages in the Yucatan: Tourist food consumption and preferences. *Tourism Geographies*, 4(3), 282-306. <https://doi.org/10.1080/14616680210147436>
- [23] York, R., & Gossard, M. H. (2004, March 31). Cross-national meat and fish consumption: exploring the effects of modernization and ecological context. *Ecological economics*, 48(3), 293-302. <https://doi-org.elibrary.jcu.edu.au/10.1016/j.ecolecon.2003.10.009>