Meal selection among Japanese immigrants in Malaysia based on year of immigration

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The increase in immigration also creates opportunities for the Japanese to experience different cultures. This study examines the response of long-term Japanese residents overseas to different food cultures. The survey was conducted in Malaysia, which is a multi-ethnic nation with various cuisines, targeting the meal selection of Japanese residents. Malaysian food is divided into four cuisines: Malay, Chinese, Indian, and Nyonya. In the first year, Japanese in Malaysia ate Malay cuisine the most frequently, which is unfamiliar to Japanese immigrants; however, this percentage gradually declines from year two. In contrast, the consumption of familiar Malaysian-Chinese cuisine exhibited an inverse trend, which was proven by empirical analysis.

1. Introduction

Beginning in the late 1950s, elevated economic growth prompted population movement in Japan. The basic pattern of this movement was within the country, with most individuals moving from the countryside to the cities. However, migration within the country began to decline in 1970. According to Japan’s “Report on the internal migration in Japan derived from the basic resident register,” 2.35 million people moved in 1954, after which the number of internal migrants gradually increased to 4.24 million in 1970. After 1970, this figure diminished to 3.36 million in 1980, 3.17 million in 1990, 2.81 million in 2000, and 2.33 million in 2010; the figure of 2.40 million in 2014 only represents a 57% increase compared to 1970.

In contrast, overseas migration began to rise. According to the “Annual Report of Statistics on Japanese Nationals Overseas,” released by the Japanese Ministry of Foreign Affairs in 2014, movement abroad was both long-term and short-term. Immigrants are classified as short-term residents (spending less than three months abroad) [1], long-term residents (those residing abroad for at least three months, but may be planning to return to Japan) [2], or permanent residents (granted permanent residency by their host country and have moved abroad for the foreseeable future) [3]. Of these, the number of Japanese in categories [2] and [3] reached 811,000 in 2000 and broke the 1 million mark for the first time in 2005, at 1.013 million. In 2014, there were 850,000 long-term residents and 440,000 permanent ones, totaling 1.29 million individuals. Those involved in the private sector accounted for more than two-thirds of all long-term residents. Such international migration is believed to have
some degree of influence on individual eating habits, as immigrants encounter new host cultures.

The subjects in this survey are Japanese who have been residing in Malaysia for an extended period of time. Malaysia is a multi-ethnic country with Malay, Chinese, and Indian populations (among others), resulting in the availability of diverse ingredients for daily use in Malay, Chinese, Indian, and Nyonya cuisine, (Nyonya, also known as Peranakan, is a fusion combining elements of Malay and Chinese). Urban centers such as Kuala Lumpur (Malaysia’s capital) also enjoy a greater number of restaurants that serve Asian food, such as Japanese and Thai, as well as Western, and are often called “food heavens”. Cities such as Kuala Lumpur also contain supermarkets of Japanese origin; therefore, Japanese ingredients are readily available.

The attitudes of residents toward their diets often define eating habits in Malaysia, which is a common trait in many countries, albeit in varying degrees. Malaysia features a broad selection of cuisines and ingredients and allows Japanese residents access to much more than merely local cuisine. Therefore, the conditions in Malaysia are ideal to examine the effect of life experiences of Japanese immigrants on their diet.

The number of long-term Japanese residents in Malaysia was only 9,705 in 2010 (18th in international rankings), but later surged to 22,056 (1,420 permanent and 20,636 long-term residents) in 2014. The breakdown of long-term residents includes 8,699 involved in private enterprise and their 6,572 family members, totaling 15,271 individuals, accounting for 70% of the total group (2013). The highest concentration of Japanese living in Malaysia is in Kuala Lumpur, which has 4,677 Japanese residents (2011). There were 1,347 Japanese-affiliated companies in 2014, the fourth-highest number in Southeast Asia after Indonesia, the Philippines, and Vietnam.

This study illuminates the approach of long-term Japanese residents to Malaysian food by (1) detailing the features of Malaysian food and evaluating the taste of Japanese immigrants for such food; (2) examining the meal content of migrants to Malaysia, as the length of stay in Malaysia is likely to influence meal selection behavior; and (3) based on the outcomes of previous studies, we conduct an empirical analysis to identify the selection factors for Malaysian food.

2. Literature Review

There are several studies on the dietary habits of Japanese immigrants in Hawaii and Brazil. In a 1981 paper, Okimasu et al. dedicated two parts on the dietary habits of Japanese Brazilians. The author discussed food intake, compared it with that in Japan, and concluded that rice and soy sauce forms the basic food consumption pattern of the Japanese. In a 1976 paper, Matsuyama presented a dietary picture of six Japanese women immigrants in Hawaii. In 2003, Takata et al. compared the dietary habits of Japanese women in Japan with those in Hawaii; the diet of the latter appeared to be a combination of foods eaten in Japan and the dietary habits of Caucasian women in Hawaii.

Several studies examine the dietary habits of immigrants in neighboring countries. Satia et al. examined adoption of Western eating patterns among Chinese immigrants (dietary acculturation) by comparing Chinese-Americans and Chinese-Canadians. The author noted that most participants reported some Western dietary practices, such as drinking milk, eating cheese, eating at Western fast-food restaurants, and eating between meals. Lv et al. studied the dietary pattern changes of Chinese Americans in Pennsylvania and found that after immigration, Chinese Americans increase their consumption of grains, vegetables, fruits, meat/meat alternatives, dairy products, fats/sweets, beverages, and Western foods, while reducing their consumption of traditional Chinese foods. Sukalakamala et al. investigated food acculturation of Thai immigrants in the United States, finding a decrease in the number of meals consumed per day and a preference for American snacks to Thai ones. Consumption decreased for 29 Thai foods and increased for 33 American foods. The author concluded that acculturation was positively related to consumption and preference for some American foods and negatively related to consumption and preference for some Thai foods. This result differs from our finding because many Japanese in Malaysia consumed adequate amounts of Japanese food in a week.

Some studies discussed the medical content and health perspective. Kim et al. compared the dietary pattern and diet quality of Korean Americans with high blood pressure with native Koreans. Franzen et al. investigated the body mass index (BMI) of the adult Hmong (a race of people born in Thailand or Laos) in Minnesota, United States. Pierce et al. studied Japanese Americans, suggesting that dietary changes associated with acculturation to a Western diet may increase the risk of type 2 diabetes in Japanese Americans. However, this paper does not focus on medical or health matters but attempts to identify the factors that influence Japanese dietary habit overseas.

We can classify research papers on dietary changes among immigrants into three groups: Japanese
immigrants, immigrants of other countries, and foreign/ international students. Brittin et al. discussed food acculturation of some Arab students in US universities\(^{10}\). The author noted that for students living in the US, the number of meals consumed per day decreased and food eaten out changed from Arabic to American. The study positively correlated acculturation with the length of stay in the US and with the consumption of and preference for some Arabic foods. Pan et al. identified changes in dietary patterns among Asian students (China, Taiwan, Hong Kong, Japan, and Korea) before and after immigration to the United States\(^{10}\). All students were required to have been residing in the United States for at least three months. Subjects were eating out less often; however, they were selecting more American-style fast foods when they did. Papadaki et al. surveyed the eating habits of Greek students before and after moving from Greece to Glasgow, Scotland\(^{10}\). The main barriers to maintaining usual/traditional eating habits were the price of food, lack of familiar tastes, availability of convenience food and the limited variety of food available in Glasgow. This finding highlights the difficulties immigrants face in keeping traditional, healthier eating habits when migrating to a foreign country. This is where our study differs from others. This study does not primarily target foreign students. The respondents are primarily working husbands and housewives. Some studies consider shorter lengths of stay; however, our study considers a greater length of stay, with no limit to the number of years.

Few studies examine the eating habits of individuals transferred overseas for work and stay for extended periods of time. One exception is Yamauchi’s study on Japanese living in New York City for less than three years\(^{10}\). Yamauchi investigated how people chose food ingredients in New York City, where Japanese foods are easy to obtain. Yamauchi noted that individuals predominantly purchased ingredients with which they had some prior experience and were easier to obtain than in Japan, or were inexpensive. These findings indicate that eating behaviors formed in Japan are not easily altered, even after migration. In other words, despite contact with unfamiliar cuisine and ingredients in host countries, the Japanese are reluctant to adopt them.

Following Yamauchi’s research, this study examines the approach of long-term residents to Malaysian food, and explores whether immigration changes the eating behaviors of the Japanese.

3. Methodology

The authors examined the daily diets of Japanese living in Kuala Lumpur, Malaysia, and its suburbs, in 2015 and 2018. Approximately one-half of all Japanese in Malaysia live in Kuala Lumpur, with most working in business enterprises, and Japanese ingredients are readily available in the city. Therefore, we chose Kuala Lumpur for our survey. We conducted both interviews and surveys (Nabila Binti Mohd Saidi performed most of this work) in June 2015 and February 2018. The survey questionnaire was in Japanese.

In the survey, participants were asked to fill in responses in a questionnaire, and return it by post or email. As shown in Table 1, the principle survey items included gender \([1]\), age \([2]\), occupation \([3]\), length of stay in Malaysia \([4]\), place of original residence in Japan \([5]\), prior experience with eating Malaysian food in Japan \([6]\), and sources of information on Malaysian food and ingredients \([7]\).

In addition, we asked: (1) “What dishes did you eat over the past week?” and (2) “To what degree do you like Malay, Chinese, Indian, or Nyonya cuisine, and why?” To answer the former question, we asked the recipients to write down the content of the main dishes and whether they had eaten in or out for each day of the week and each meal. This survey was restricted to breakfast, lunch, and dinner, although in Malaysia, it is common for people to eat between meals\(^{2}\). For the latter question, we scored taste in Malaysian food based on a five-point assessment structure, where \(1 = \text{like it},\ 2 = \text{moderately like it},\ 3 = \text{indifferent},\ 4 = \text{moderately dislike it},\ \text{and}\ 5 = \text{dislike it}\). The reasons were freely described. We will examine these items in detail later.

We obtained responses to the questionnaire from 170 individuals, of which only 150 filled in the content of their meals over the past week. With 150 valid responses, the objects of this study were 3,150 meals (3 meals/day × 7 days/week × 150 responses). However, we excluded skipped meals from the analysis (amount/number of data: 107). Therefore, the total data size was 3,043.

4. Food Consumption Behavior of Japanese Immigrants in Malaysia

(1) What is Malaysian food?

As mentioned, Malaysian food is not a single cuisine; it includes Malay, Chinese, Indian, and Nyonya influences. Many Japanese become familiar with Chinese and Indian cooking while living in Japan. Although Japanese immigrants frequently eat Malaysian food, they continue their eating behaviors from back home, as long as those behaviors center on Chinese and Indian cuisine\(^{16}\). Hence, immigration alone does not mean that an individual will
adopt a different gastronomic culture.

In contrast, Malay and Nyonya cooking styles are new to the Japanese, and few immigrants experience them while in Japan. Base flavors in Malay and Nyonya cuisine include belacan (shrimp fermented in a barrel and crushed into a paste) and sambal (a rich, pungent seasoning; its main ingredients are chilies, onions, garlic, and sugar). These are used in most Malay and Nyonya dishes and represent flavors that the Japanese would find unfamiliar.

Malay cuisine uses herbs and spices, which lend it its distinct flavor. The herbs include ginger, lemongrass, turmeric, pandan leaves, and kunyit leaves. The spices include cinnamon sticks, clove, cardamom, and star anise. Cooking oil — mostly palm oil — is used in the first step. Coconut oil is commonly used to make soup or gravy. Excessive amounts of cooking oil and coconut milk are partly why Malay cuisine is oily, fatty, and unhealthy. Moreover, since Malay cuisine also uses chilies and spices, the dishes are very spicy.

(2) Taste in Malaysian Food by the Japanese Immigrants

Table 1 shows the score based on taste in Malaysian food, which we based on a five-point assessment structure, where 1 = like it, 2 = moderately like it, 3 = indifferent, 4 = moderately dislike it, and 5 = dislike it. Malay food scored 2.606 (n = 127, SD = 0.977), while Chinese, Indian, and Nyonya food scored 1.677 (n = 127, SD = 0.825), 2.606 (n = 127, SD = 0.977), and 2.843 (n = 127, SD = 1.116), respectively.
respectively. We conducted one-way analysis of variance (ANOVA) to investigate if Japanese immigrants had different tastes for different types of Malaysian food. Consequently, the F-value was 35.28 ($p < 0.01$), statistically confirming different tastes among cuisines. Therefore, which types of cuisine have different tastes? To ascertain this, we performed multiple comparison test using the Tukey-Kramer method. Table 2 also shows these results. The test, through the average values, statistically confirmed that Chinese cuisine was the most preferred within the range of Malaysian food. On the other hand, we were unable to confirm differences in preferences among other dishes (Malay, Indian, and Nyonya cuisine). As Chinese cuisine is relatively easier to find even in Japan, it is a familiar dish for Japanese immigrants, and therefore, we consider this a relevant factor.

We requested Japanese immigrants to write free-form answers to express their opinions on improving Malay cuisine. Their answers were highly suggestive, indicating that immigrants commonly believed that quality, service, and cleanliness were lacking (i.e., monotonous colors and flavors, excessive fats and oil, and poor cleanliness of restaurants and sellers). Even individuals who ate Malay cuisine said they refrained from eating oily and fatty food as the length of their stay increased.

(3) Meal Content of Japanese Immigrants in Kuala Lumpur

Table 3 presents the weekly food consumption of Kuala Lumpur residents, as shown by the frequency of meals (number of times a meal was eaten over a period of 21 meals in one week). Japanese immigrants eat Malaysian food 24.7% of the time and Japanese food 50.3% of the time. The third type consisted of other foods (24.9%). Over one week, Japanese immigrants ate at home 70.3% of the time, and ate out 29.7% of the time. On average, they ate out 2.4 times a week.

A previous study revealed that Japanese immigrants tend to continue using ingredients and dishes with which they are familiar. Table 2. Score based on taste in Malaysian food

| Cuisine       | Malayan cuisine | Chinese cuisine | Indian cuisine | Nyonya cuisine | Overall score |
|---------------|----------------|----------------|---------------|---------------|--------------|
| Mean difference | 0.929 *        | 0.000          | 0.236         | 0.929 *       | 1.677        |
| Test statistic | 7.560          | 0.000          | 1.920         | 7.560          | 2.066        |
| P-value       | 0.000          | 1.000          | 0.220         | 0.000          | 2.843        |

Note 1) This score is a five-point assessment structure where 1 = like it, 2 = moderately like it, 3 = indifferent, 4 = moderately dislike it, and 5 = dislike it.

2) *Significant at the 1% level.

3) Samples with no answer are excluded. Total sample is 127.

Table 3. Weekly Meal Content of Japanese Immigrants in Malaysia

| Malaysia food | Malayan food | Chinese food | Indian food | Nyonya food | Subtotal |
|---------------|-------------|--------------|-------------|-------------|----------|
| Eating in     | 111         | 75           | 20          | 3           | 209      | 1,361    | 568       | 2,138      |
|               | (3.6)       | (2.5)        | (0.7)       | (0.1)       | (6.9)    | (44.7)   | (18.7)    | (70.3)     |
| Eating out    | 214         | 256          | 59          | 15          | 544      | 171      | 190       | 905        |
|               | (7.0)       | (8.4)        | (1.9)       | (0.5)       | (17.9)   | (5.6)    | (6.2)     | (29.7)     |
| Total         | 325         | 331          | 79          | 18          | 753      | 1,532    | 758       | 3,043      |
|               | (10.7)      | (10.9)       | (2.6)       | (0.6)       | (24.7)   | (50.3)   | (24.9)    | (100.0)    |

Note 1) The figures show the total frequency of each dish eaten in a week in the respective groups. The total number of meals per week amounted to 21 times per capita. We excluded skipped meals. Bracketed numbers indicate the ratio of each dish eaten in a week compared to the total number of meals.

2) “Other food” refers to Asian (such as Thai or Korean) and Western food (such as Italian and fast food).
they have prior experience, and are cautious about incorporating unfamiliar foods into their diets\(^{(6)}\). In other words, the Japanese are conservative in terms of their diet. However, our survey shows that immigrants do not reject Malaysian food, but rather proactively integrate it into their diets. The survey results present a more detailed investigation of how they do so and the diet of residents in Kuala Lumpur.

Figure 1 displays the ratio in which Japanese immigrants consumed each cuisine, according to their length of stay. Across all dishes, Japanese food ranks the highest. Except for “2-6 years,” Malaysian food ranks the lowest. In other words, the ratio of Malaysian food is relatively low. However, the ratio for all cultures shows a value of around 20%, which is not small as an absolute value. Moreover, in the cross-section, the longer an immigrant’s length of stay, the more does Malaysian food tend to decrease in terms of the meal selection ratio.

For further research, we divided Malaysian food into four types. Table 4 depicts the frequency with which immigrants eat Malay, Chinese, Indian, and Nyonya cuisine, according to their length of stay. Malay cuisine accounted for 43.2% of the ratio of all Malaysian food. Notably, the respondents ate Malay cuisine, with which Japanese immigrants are unfamiliar, more frequently than Indian cuisine, with which they are familiar. Examining each year of immigration, those who had left Japan for less than a year ate Malay cuisine the most frequently, with this percentage tending to gradually decline from year two onward. In contrast, the consumption of Chinese cuisine exhibited an inverse trend. Immigrants were less likely to eat it in year one, but their consumption gradually rose from year two onward, to the extent that Chinese cuisine was the most popular choice for respondents who had eaten Malaysian food for 17 years or more.

5. Empirical Analysis

(1) Subject Analysis

Based on the findings of prior research, we established the empirical subject as the degree of adaptation to Malaysian food by Japanese immigrants in Kuala Lumpur. A previous study demonstrated that the “number of migration years” is a positive factor in selecting Malaysian food over Japanese food\(^{(7)}\). However, considering that Malaysian food is classified into four categories (Malay, Chinese, Indian and Nyonya cuisine), it is difficult to handle it as one cuisine. For example, we expect that

| Length of stay in Malaysia | Total |
|---------------------------|-------|
| ≤1 year                   |       |
| Malay cuisine             | 129   |
| (60.3)                    | 158   |
| (29.4)                    | 20    |
| (15.4)                    | 4     |
| (22.2)                    | 14    |
| (43.2)                    | 325   |
| Chinese cuisine           | 69    |
| (32.2)                    | 165   |
| (52.9)                    | 36    |
| (61.5)                    | 16    |
| (71.4)                    | 45    |
| (44.0)                    | 331   |
| Indian cuisine            | 15    |
| (7.0)                     | 49    |
| (12.8)                    | 9     |
| (13.2)                    | 4     |
| (15.4)                    | 2     |
| (3.2)                     | 79    |
| (10.5)                    |       |
| Nyonya cuisine            | 1     |
| (0.5)                     | 10    |
| (2.6)                     | 3     |
| (4.4)                     | 2     |
| (7.7)                     | 2     |
| (3.2)                     | 18    |
| (2.4)                     |       |
| Total                     | 214   |
| (100.0)                   | 382   |
| (100.0)                   | 68    |
| (100.0)                   | 26    |
| (100.0)                   | 63    |
| (100.0)                   | 753   |

Note 1) The figures show the total frequency of Malaysian food eaten in a week based on each group’s length of stay. Bracketed numbers indicate the percentage.
spicy and oily Malay dishes will not be popular among Japanese immigrants, while Chinese dishes are easy to find, even in Japan. As shown in Table 4, Malay cuisine accounted for 43.2%, and Chinese cuisine accounted for 44.0% of Malaysian food. We omitted Indian cuisine and Nyonya cuisine to prevent complications, and our empirical analysis focuses on Malay and Chinese cuisine. Thus, we defined a dummy variable (Malay cuisine = 1, Chinese cuisine = 0), and undertook a probit analysis of Japanese immigrants using this variable as the dependent variable.

(2) Empirical Results
To focus on Malay and Chinese cuisine, the sample size used for analysis was 656. We employed a probit model using the dependent variable 1 for Malay cuisine selection, and 0 for Chinese cuisine. Therefore, a positive sign of the estimate will identify it as a factor to select Malay cuisine and not Chinese, and a negative sign will indicate the opposite relationship.

Regarding the explanatory variables, other than year of immigration and age, we added four dummy variables: gender (female = 1, male = 0), eating out (eating out = 1, homemade meal = 0), breakfast, and lunch. Table 5 shows each variable's descriptive measure.

We chose the explanatory variables for the following reasons. First, we consider the number of migration years as a factor affecting meal selection among Japanese immigrants. Therefore, immigrants with extensive experience of eating local dishes easily adapt to the host country’s cuisine. However, Malay cuisine has many ingredients and seasonings that are unfamiliar to the Japanese, and we expect a negative reaction. Second, previous studies note that respondents' attributes (age, gender, and so on) are important as selection factors. The elderly and women are considered more health-conscious than the young and men. Thus, we expect that the estimates of age and gender are negative values. Third, it is likely that “when” and “where” to eat will affect the contents of the dishes. As dietary habit in Malaysia, breakfast and lunch are often cheap offerings at stalls, consisting of primarily Malay cuisine such as nasi lemak and nasi goreng. Such an environment affects the eating behavior of Japanese immigrants. However, as shown in Table 2, as eating out is entertainment for Japanese immigrants, we consider a positive taste for Chinese cuisine to affect eating behavior. To clarify these points, we add dummy variables for “eating out,” “breakfast,” and “lunch.”

Table 6 presents the estimation results from the probit model. By harnessing the estimated value of the marginal effect, we investigate the type of influence of each explanatory variable on the meal selection of a Japanese immigrant.

The analysis revealed that longer the length of stay and older the immigrants, the more they chose Chinese, rather than Malay, cuisine. Prior investigations show that the dietary habits of Malaysian food are formed when immigrants have been living abroad for longer periods of time. However, based on our results, we find that these habits comprise Malaysian identity, for example, Chinese cuisine, and not Malay, with its unique flavor.

Another distinctive feature is that gender does not make a difference in selection behavior of Malaysian

| Table 5. Descriptive statistics |
|----------------------------------|
|                                | Mean   | Std. dev. | Min. | Max. |
| Malay cuisine = 1               |        |           |      |      |
| Immigration years              | 3.631  | 6.189     | 0    | 45   |
| Age                             | 40.025 | 15.595    | 9    | 76   |
| Gender                         | 0.305  | 0.461     | 0    | 1    |
| Eating-out dummy variable      | 0.658  | 0.475     | 0    | 1    |
| Breakfast dummy variable       | 0.163  | 0.370     | 0    | 1    |
| Lunch dummy variable           | 0.695  | 0.461     | 0    | 1    |
| Chinese cuisine = 0            |        |           |      |      |
| Immigration years              | 6.909  | 9.210     | 0    | 45   |
| Age                             | 45.870 | 13.849    | 9    | 76   |
| Gender                         | 0.372  | 0.484     | 0    | 1    |
| Eating-out dummy variable      | 0.773  | 0.419     | 0    | 1    |
| Breakfast dummy variable       | 0.045  | 0.208     | 0    | 1    |
| Lunch dummy variable           | 0.622  | 0.486     | 0    | 1    |

Note 1) Created by the authors based on the survey conducted.
cuisine. Although, the belief was that women hate Malay cuisine because of its high calorie content, our empirical analysis does not confirm this tendency. Furthermore, although Table 3 shows that Malaysian food has a relatively high ratio of eating out, we found that Malay cuisine tended to be homemade, unlike Chinese cooking. Finally, both breakfast and lunch variables show positive values, and we can confirm that respondents select Malay cuisine for breakfast and lunch. In particular, the marginal effect shows a large value for breakfast, which means it is easier to eat Malay cuisine for breakfast.

### 6. Conclusion

The first meal that immigrants encounter in restaurants and supermarkets comprise the host country’s dishes and ingredients. Those who arrived when Japanese ingredients and seasonings were not readily available in their host country had no other choice but to eat local dishes in the local style, and adapt to the host country’s cuisine and gastronomic culture with a sense of curiosity. However, in Asian countries such as Malaysia, where Japanese food and ingredients are now abundant, immigrants can maintain their Japanese-style diet.

Those residing for a long time in Malaysia, especially in urban areas such as Kuala Lumpur, vary in terms of their decisions to adopt the local cuisine and gastronomic culture into their diets due to individual attitudes and preferences.

Yamauchi showed that Japanese eating behaviors are not easily altered after immigration, and that the Japanese hesitate in adopting the cuisine of where they reside.

However, long-term immigration to Malaysia results in more opportunities of contact with local cuisine and ingredients; however, whether immigrants eat more Malaysian food depends on occasions and communication with locals.

We will continue this study with more respondents in other areas in Malaysia, as future research.

### References

1. Uchino, S.: “Jinkou Houde to Syoku Seikatsu” (“Population Change and Dietary Style”), Dai-ichi Shuppan (1977) (in Japanese)
2. Poullain, J. P., L. Tibere, C. Laporte and E. Mognard: “Malaysian Food Barometer: Food, Culture and Health,” Taylor’s Press (2014)
3. Okimasu, S., N. Kishida and M. Akaban: “Studies on the Basic Food Consumption Patterns of Japanese -a Projection from Nutritional Investigations of Japanese Immigrants in Brazil - Part1 From the Side of Food Intakes”, The Japanese Journal of Nutrition and Dietetics, 39 (1), pp.15-24 (1981) (in Japanese with English abstract)
4. Okimasu, S., N. Kishida and M. Akaban: “Studies on the Basic Food Consumption Patterns of Japanese -a Projection from Nutritional Investigations of Japanese Immigrants in Brazil — Part2 From the Side of the Structural Analysis of Food Consumption Patterns.”, The Japanese Journal of Nutrition and Dietetics, 39 (1), pp.25-35 (1981) (in Japanese with English abstract)
5. Matsutama, T.: “A Short Report of Observing Dietary Pictures of Six Japanese Women Immigrants in Hawaii”, Eijo To Shokuryo, 29 (7), pp.400–403 (1976) (in Japanese with English abstract)
6. Takata, Y., G. Maskarinec, A. Franke and C. Nagata: “A comparison of dietary habits among women in Japan and Hawaii”, Public Health Nutrition, 7 (2), pp.319-326 (2004)
7. Satia, J. A., R. E. Patterson, A. R. Kristal, T. G. Hislop, Y. Yasui, and V. M. Taylor: ‘Development of scales to measure dietary acculturation among Chinese-Americans and Chinese-Canadians’, Journal of the American Dietetic Association, 101 (5), pp.548-553 (2001)
8. Lv, N. and K. Cason: “Dietary pattern change and acculturation of Chinese Americans in Pennsylvania”, Journal of the American Dietetic Association, 104, pp.771–778 (2004)
9. Sukalakamala, S. and H. Brittin: ‘Food practices, changes, preferences, and acculturation of Thais in the United States’. Journal of the American Dietetic, 106 (1), pp.103–108 (2006)
10. Kim, M. J., S. J. Lee, Y. H. Ahn, P. Bowen, and H. Lee: “Dietary acculturation and diet quality of hypertensive Korean Americans”. Journal of Advanced Nursing, 58 (5), pp.436-445 (2007)
11. Franzen, L. and C. Smith, “Acculturation and environmental change impacts dietary habits among adult Hmong”, Appetite, 52, pp.173-183 (2009)
12. Pierce, B., M. Austin, P. Crane, B. Retzlaff, B. Fish, C. Hutter and W. Y. Fujimoto: “Measuring dietary acculturation in Japanese Americans with the use of confirmatory factor
analysis of food-frequency data”, American Journal of Clinical Nutrition, 86, pp.496–503 (2007)

13) Brittin, H.C. and B.A. Obeidat: ‘Food practices, changes, preferences and acculturation of Arab students in US universities’ International Journal of Consumer Studies, 35, pp. 552–559 (2011)

14) Pan, Y. L., Z. Dixon, S. Himburg and F. Huffman: ‘Asian students change their eating patterns after living in the United States’, Journal of the American Dietetic Association, 99(1), pp.54–57 (1999)

15) Papadaki, A. and J.A. Scott: “The impact on eating habits of temporary translocation from a Mediterranean to a Northern European environment”, European Journal of Clinical Nutrition, 56, pp.455–461 (2002)

16) Yamauchi, T: “Dietary Life of the Japanese Living in New York City: A Case Study.” The Japanese Journal of Nutrition and Dietetics, 44(3), pp.143–151 (1986) (in Japanese with English abstract)

17) Yoshino, K.: “Malaysian Cuisine: A Case of Neglected Culinary Globalization”, Sophia University (2009)

18) Saidi, N., A. Tani and T. Sasaki: ‘Dietary Style of Japanese Immigrants in Malaysia’, Journal of Food System Research, 23 (3), pp.165–168 (2016)

19) Axelson, M. L.: “The impact of culture on food-related behavior”, Annual Review Nutrition, 6, pp.345–363 (1986)

20) Dittus, K. L., V. N. Hillers and K. A. Beerman, “Benefits and barriers to fruit and vegetable intake: relationship between attitudes and consumption”, Journal of Nutritional Education, 27, pp.120–126 (1995)