

COMPLETION REPORT

Universiti Kebangsaan Malaysia
See Meng Lim

Subject of Research Project: A cross-cultural comparison between Malaysia and Japan on Acceptance of Insects as food

The world population is projected to increase from 7.9 billion today to 9.7 billion by 2050. This exponential global population growth imposes an increased demand for food and livestock products and subsequently puts greater pressure on the environment. Greenhouse gas emissions from animals and manure, deforestation and grassland conversion, significant freshwater demand and nitrate pollution of groundwater and surface water are a few examples of negative impacts on the environment from the mass food production of the current agriculture practices. Given all these environmental concerns, edible insects have been proposed as an environmentally friendly source of protein to meet the demands of a growing world population. Although consuming insects as food is one of the food cultures in both Malaysia and Japan, the practice is limited to only some indigenous communities living inland or in certain prefectures. Cultural and individual experience may play an important role in cultivating an individual's food preference; however, there is a lack of cross-cultural research to understand the similarities and differences in perceptions and acceptance of insects as food between Malaysians and Japanese. This study aimed to determine the acceptance of insects as food and the factors influencing it among young adults in Japan and Malaysia. A cross-sectional study was conducted with 1954 subjects aged between 18 and 30 years, including 883 Japanese and 1071 Malaysians. Online questionnaires were used to collect information on socio-demographics, Food Neophobia Scale, and acceptance of insects as food. Statistical analyses were performed using Chi-square, Wilcoxon signed-rank post-hoc and Mann-Whitney U tests. Overall, only 9.2% of young adults expressed a willingness to consume insects, and 6.5% were ready to adopt eating insects in their daily lives. A higher proportion of Malaysians (10.5%) were more willing to accept insects as food than Japanese (7.6%, $p=0.024$). However, more Japanese (9.5%) were willing to adopt eating insects in their daily lives than Malaysians (3.9%, $p<0.001$). Most subjects in both countries were in the neutral category of food neophobia, with no significant difference between countries. In Japan, caloric and nutritional value (17.8%) was the main reason for willingness to accept insects as food, while in Malaysia, food safety (11.5%) was the deciding factor. In both Japan (27.9%) and Malaysia (17.1%), the primary factor for unwillingness to eat insects was the appearance of the insect. There was a significant association ($p<0.001$) between the acceptance of insects as food and the category of food neophobia, with lower acceptance associated with higher neophobia or vice versa. In conclusion, the acceptance of insects as food among young adults in Malaysia and Japan is still low. Marketing strategies should be tailored to address the factors that influence acceptance in order to effectively promote entomophagy in both countries. Further studies should focus on the transformation of insects into more palatable forms.

Publication of the Results of Research Project:

<p>Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.)</p> <ol style="list-style-type: none">1. 14-17 September 2023, Chengdu, China, 14th Asian Congress of Nutrition (ACN), Acceptance of insects as food among Malaysian and Japanese women: A Preliminary Study, See Meng Lim2. 30-31 July 2024, Petaling Jaya, Malaysia, 39th Nutrition Society of Malaysia (NSM) Annual Scientific Conference, Acceptance of insects as food: Comparison between Malaysia and Japan, See Meng Lim
<p>Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)</p> <ol style="list-style-type: none">1. Yue Xin Goh. 2023. <i>Pengesahan Soal Selidik Food Neophobia Scale Versi Bahasa Melayu Dalam Kalangan Orang Dewasa Di Malaysia</i> (Validation of The Malay Version of The Food Neophobia Scale Questionnaire among Malaysian Adults). Bachelor's thesis. Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia. (Supervisors: See Meng Lim and Jyh Eiin Wong)2. Yi Qi Ang. 2023. <i>Penerimaan Serangga Sebagai Makanan Dan Faktor Yang Mempengaruhinya Dalam Kalangan Dewasa Muda Di Malaysia</i> (Acceptance of Insects as Food and Factors that Influence Its Acceptance among Young Adults in Malaysia). Bachelor's thesis. Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia. (Supervisors: See Meng Lim and Jyh Eiin Wong)3. Yan Li Ng. 2024. <i>Perbandingan Penerimaan Serangga Sebagai Makanan Dan Tahap Neofobia Makanan Antara Dewasa Muda Malaysia Dan Jepun</i> (Comparison of Acceptance of Insects as Food and Food Neophobia Level among Young Adults in Malaysia and Japan). Bachelor's thesis. Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia. (Main Supervisor: See Meng Lim)
<p>Journal</p> <ol style="list-style-type: none">1. Lim, S. M., Goh, Y. X., Wong, J. E., Kagawa, M., & Poh, B. K. (2024). Cross-Cultural Adaptation and Validation of the Malay-Translated Version of the Food Neophobia Scale for Malaysian Young Adults. <i>Perceptual and Motor Skills</i>, 131(2), 381-396. doi.org/10.1177/003151252312250222. Lim, S.M., Ng, Y.L., Kagawa, M., Wong, J.E., Shinde, M., Tochinai, F., & Poh, B.K. (2024). Cross-cultural comparison of the acceptance of insects as food among young adults in Malaysia and Japan. <i>Journal of Insects as Food and Feed</i>, 11(1), 21-34. doi.org/10.1163/23524588-00001251
<p>Book (Publisher and Date of the Book, Title and Author of the Book, etc.)</p> <p>Other publication</p> <ol style="list-style-type: none">1. Dewan Kosmik (Malaysian local magazine), July, 2023. <i>Amalan Memakan Serangga: Penyelesaian Isu Jaminan Makanan?</i> (Entomophagy: Potential solution to food security?)2. Kagawa Nutrition University's website, May 13, 2024, <i>昆虫食に対する意識調査</i> (Research on Edible Insects as food), https://www.eiyo.ac.jp/about/sdgs/casestudies/kagawa2024-entomophagy.html