Survey data for ex-post evaluation of the horticulture project in the Marshall Islands

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\textbf{A B S T R A C T}

This Data in Brief article provides supplementary information about how we explored aid effectiveness of Taiwanese government's horticulture project in the Marshall Islands. The issue of sustainable development in small island developing countries has become increasingly important [1,2,3]. Moreover, Non-communicable diseases (NCDs) have become more serious in the Pacific Islands in recent years, adversely affecting people's health. The data will also benefit those interested in understanding the eating habits in the Pacific Islands. We selected and assigned participants (using household as a unit) of the project to the experimental group and non-participants to the control group to evaluate the impact of the horticulture project. As for data collection in the field, we collected data through a structured questionnaire. We recruited one interviewer to conduct household surveys in the field for 40 days from April to June in 2017. A total of 96 valid questionnaires were collected, including 36 participants and 60 non-participants. The average household consumption of vegetables and fruits is 6.18 units (SD=7.84). Comparing project participants with non-participants, consump-

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Specifications Table

| Subject | Nutrition/ Horticulture |
|---------|-------------------------|
| Specific subject area | Intake of vegetables and fruits, knowledge of vegetables and fruits, and attitude towards vegetables and fruits. |
| Type of data | Tables |
| How data was acquired | Questionnaire, direct observation and analysis using IBM SPSS Statistics (Version 22) and STATA (Version 15). |
| Data format | Raw, filtered and analysed |
| Parameters for data collection | We selected and assigned participants (using household as a unit) of the projects to the experimental group and non-participants to the control group. We collected data through a structured questionnaire, and the content of the questionnaire includes basic information, intake of vegetables and fruits, knowledge of vegetables and fruits, and attitude towards vegetables and fruits. |
| Description of data collection | We recruited an interviewer who was trained in basic interview skills and data entry to conduct household surveys in the field for 40 days from April to June. The training content included data registration and visiting skills, such as how to find interviewees, make introductions, obtain consent for the interview, etc. |
| Data source location | Taiwan Technical Mission in the Marshall Islands |
| Laura, Majuro Atoll | Latitude and longitude: 7°08′57.5″N 171°02′02.2″E |
| Data accessibility | The data is provided in this article. Repository name: Mendeley data |
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| Related research articles | Cheng, Yan-Tzong, Yun-Ching Tseng, Yoko Iwaki, and Huang, Michael C. “Sustainable food security in Small Island Developing States (SIDS): A case of Horticulture project in marshall island.” Marine Policy 2021: 104,378. |

Value of the Data

• The issue of sustainable development in small island developing countries has become increasingly important [1,2,3]; this data may be useful to understand the impact and effectiveness of the aid project in the Marshall Islands.
• The World Health Organization (WHO) indicated that low vegetable and fruit consumption is one of the top 10 risk factors contributing to mortality, and increasing the intake of fresh vegetables and fruits could help to decrease the related risk of NCDs [4–6]. This data will benefit those interested in understanding the impact and effectiveness of an aid project, as well as those who want to understand the intake of vegetables and fruits in the Pacific Islands.
• This data can be used to compare with other aid projects in the Pacific Islands, and to understand the intake of fruits and vegetables in the Pacific Islands. Some of the data can be compared with the NCD Risk Factors STEPS Report of Marshall Islands, which was conducted by World Health Organization in 2002 [7].
1. Data Description

As Taiwan’s professional development aid agency, the International Cooperation and Development Fund (TaiwanICDF) uses Taiwan’s advantages to design and implement various projects in our partner countries, and also conducts project evaluations to understand the impact of the projects. The TaiwanICDF conducted the ex-post evaluation of the horticulture project in the Marshall Islands in 2017. The data of this study (including the tables and figures) is part of the results of the evaluation, and is original and unpublished. The content of the survey questionnaire includes basic information, intake of vegetables and fruits, knowledge of vegetables and fruits, and attitude towards vegetables and fruits. For the demographic information, the variables in this set of questions include interviewees’ gender, age, BMI, educational years, household size, household income, access to vegetables and fruits, daily spending on vegetables and fruits, etc. Additionally, for the intake section, the variables in this set of questions include approach to obtaining vegetables and fruits, convenience of obtaining vegetables, convenience of obtaining fruits, frequency of preparing vegetables when cooking, and daily consumption of vegetables and fruits, etc. We used frequency of purchasing vegetables and fruits to understand the convenience of obtaining vegetables and fruits. The knowledge section uses questions to measure the interviewee’s knowledge of vegetables and fruits. The total score (full score is 5 points) of the questions is the measure variable of this topic. Finally, for attitude, this section uses questions to measure the interviewee’s attitude toward vegetables and fruits. The total score (full score is 15 points) of the questions is the measure variable of this topic. As for data collection in the field, we recruited an interviewer who was trained in basic interview skills and data entry to conduct household surveys in the field for 40 days from April to June in 2017.

2. Experimental Design, Materials and Methods

2.1. The experimental design and methods

This Data in Brief article provides supplementary information about how we explore aid effectiveness of the horticulture project in the Marshall Islands. The horticulture project in the Marshall Islands was implemented during 2011–2014, and the three major components of the project: (1) provision of resources; (2) capacity building; and (3) vegetable and fruit promotion, achieved the outcome of more consumption of vegetables and fruits. We used a quasi-experimental design to understand the effectiveness of the project (Fig. 1). In order to comply with the framework of quasi-experimental design, we selected and assigned participants (us-

Fig. 1. Framework of the quasi-experimental design.
We collected data through a structured questionnaire which was designed by the TaiwanICDF and external consultants. This survey mainly used households as a unit of analysis. We selected participants from the project participant list to conduct the household survey, and chose the non-participants according to their recommendations or from their neighbors who did not join the project. Due to time constraints and inability to contact every project participant, we conducted the survey based on geographic location and reached nearby non-project participants to ensure smooth implementation of the survey. In addition, the TaiwanICDF had a local technical team to work with the local people; therefore most local people, including non-project participants, were willing to cooperate with us.

With limited time and resources, we followed the rule of thumb and selected 1.5 to 2 times more non-participants than participants to ensure the intervention effect of the project can be explained. The respondents were conformed and did not include minors, indigenous peoples, pregnant women, persons with mental or physical disabilities, and people who are improperly coerced or unable to make decisions freely. We also designed several mechanisms such as strengthening the training of interviewers and locating the interviewees, to further mitigate selection bias. In addition, the household surveys did not use invasive methods to collect human research data, we did not use any promotional channels to recruit respondents, and each respondent was required to sign an informed consent form in advance to ensure the credibility and transparency of the household surveys. Also, the project evaluation schedule and the household surveys did not involve human subjects such as obtaining, investigating and analyzing the usage of human samples or personal biological behavior, physiology, and psychology, genetics, medical and relevant information.

2.2. The materials and the treatments

The questionnaire used the intake of vegetables and fruits as the major measure variable to understand the intervention effectiveness. Then we interviewed the food preparer in the family to assess project effect as well as the family's dietary pattern, with the food preparer usually providing more accurate informative answers. As mentioned, we recruited an interviewer to conduct the household surveys. The interviewer was strictly screened and trained. The training content included data registration and visiting skills, such as how to find interviewees, how to make the introduction, how to get interviewees to agree to the interview, etc. The interviewer confirmed the interview list one week after arrival. In order to ensure logic in the distribution of interviewees, the interviewer used the GPS positioning function on the smart phone to locate the interviewees (Graph 1). Moreover, the interviewer reported related data and information.
to TaiwanICDF headquarters on a weekly basis, including data entry of questionnaire, interview records and photos, to ensure accuracy of data and selection of the subjects. A total of 96 valid questionnaires were collected, including 36 participants and 60 non-participants.

2.3. The data analysis

Data analyses were carried out in IBM SPSS Statistics (Version 22) and Stata14.0. Data analyses include descriptive statistics and inferential statistics. For all statistical tests, the $\alpha$ level was set to 0.05. We used descriptive statistics to understand the distribution of the interviewees' demographic information. For the inferential statistics, we compared the participants and non-participants using a t-test, to understand the difference between these two groups. Then we used linear regression to investigate the association between "daily consumption of vegetables and fruits" and variables. In order to understand the effectiveness of the projects, we put “participate in the project” and the background factors together in the regression model to verify the attribution of participating in the projects.

Ethics Statement

This study and the household surveys did not involve human subjects such as obtaining, investigating and analyzing the usage of human samples or personal biological behavior, physiology, and psychology, genetics, medical and relevant information. Each respondent voluntarily participated in the survey and was required to sign an informed consent form in advance to ensure the credibility and transparency of the household surveys.

CRediT Author Statement

Yan-Tzong Cheng: Conceptualization, Methodology, Software, Data curation, Writing - original draft; Yun-Ching Tseng: Conceptualization, Methodology, Software, Data curation, Writing - original draft, Supervision; Ching-Wan Tseng: Writing - review & editing, Visualization

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have, or could be perceived to have, influenced the work reported in this article.

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Supplementary Materials

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.marpol.2020.104378.

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