Data Article

Dataset: Japan household panel survey on Sustainable Development Goals 2019-2020

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Abstract

The dataset concerning the Japan Household Panel Survey on Sustainable Development Goals (JHPSDGs) was collected through online surveys conducted in March 2019 and March 2020. The dataset consists of 12,098 observations, including two-period panel datasets of 3,227 individuals. The JHPSDGs include a wide range of individual survey responses, which allows researchers and policymakers to investigate a variety of social science research topics, including but not limited to Sustainable Development Goal (SDG) awareness, pro-sustainable behavior, and labor market decision-making. The variables include detailed demographic information, labor market information, SDG awareness, sustainable and financial decision-making, and personality traits. The dataset can be used to conduct quantitative analyses, especially in the areas of business, economics, and psychology. The dataset is available to the public via the Harvard Dataverse and provides access to questionnaires, codebooks, data, and descriptive statistics.

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Abbreviations: SDGs, Sustainable Development Goals; JHPSDGs, Japan Household Panel Survey on Sustainable Development Goals.

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Specifications Table

| Subject                | Social science                      |
|------------------------|-------------------------------------|
| Specific subject area  | The dataset of a comprehensive household panel survey allowing researchers to investigate a wide range of research topics. |
| Type of data           | Tables                              |
| Figures                |                                     |
| How the data were acquired | The data were collected through an online survey using Qualtrics (a survey platform). |
| Data format            | Stata (dta) files and Comma Separated Value (CSV) files in raw format |
| Parameters for data collection | The parameters include survey responses. The variables collected include: household composition; number of children; the highest education completed and corresponding major; work and employment statuses; total annual household and individual income; job-seeking status and reservation wage; household assets and debt; big five personality traits; belief and attitudes regarding the SDGs; a sustainable lifestyle; pro-environmental behavior; female participation in society; economic growth; the role of government and SDG awareness; and decision-making (including the decision-making involved in the purchase of durable and daily goods and decision-making concerning savings and investments). |
| Description of data collection | Data were collected via online surveys. |
| Data source location   | An online survey company supplied the respondents. Quota sampling was used to ensure the representativeness of the sample. |
| • City/Town/Region:    | all regional blocs                  |
| • Country: Japan       |                                     |
| Data accessibility     | Repository name: Harvard Dataverse  |
| Data identification number: doi.org/10.7910/DVN/QW8200 |
| Direct URL to data:    | https://doi.org/10.7910/DVN/QW8200 |
| Related research article | Study 1 used a maximum of 157 variables from the dataset presented in the current paper. The variables used in this paper are presented in the below referenced article. Table 1 of the below study lists 13 dependent variables and a variable of interest. Appendix A in the Supplementary Data lists 143 potential covariates. |
|                        | Yamane, T., Kaneko, S., 2021. Is the younger generation a driving force toward achieving the sustainable development goals? Survey experiments. J. Clean. Prod. 292, 125932. https://doi.org/10.1016/j.jclepro.2021.125932 |

Value of the Data

- The dataset is a comprehensive household panel survey of representative samples collected from Japan. The dataset consists of 12,098 observations, including two-period panel datasets of 3,227 individuals. The original intention of the authors was to conduct research on the SDGs. However, the dataset includes comprehensive socio-demographic variables, and there are potentially many research topics that users can investigate using this dataset.
- Researchers and policymakers can use this dataset to analyze a wide range of topics. Specifically, social scientists in the areas of business, economics, and psychology may find the dataset beneficial for conducting analyses.
- The dataset can also be used to examine individual behaviors concerning the SDGs, such as sustainable decision-making, consumer behavior, labor market participation, and gender equality. The SDGs are a set of 17 global goals aimed at achieving a sustainable society by requiring global citizens to transform their behavior. The dataset contains general SDG awareness levels and variables related to Goals 4 (quality education), 5 (gender equality), 8 (decent work and economic growth), and 12 (responsible consumption and production).
1. Data Description

The dataset of the Japan Household Panel Survey on Sustainable Development Goals (JHPSDGs) was collected through online surveys conducted in March 2019 and March 2020. In these online surveys, respondents were requested to participate in 1) a conjoint survey, and 2) a household survey. For conjoint surveys, please refer to our previous work [1,2]. The dataset described in the current paper comprises household surveys. As provided in the Specifications Table (above), a part of the dataset was used in the paper; however, as this dataset includes a wide range of variables, researchers may find it useful for their research. The dataset consists of 12,098 observations, including two-period panel datasets of 3,227 individuals. Table 1 presents the sample size based on the demographic quotas used in the survey. The questionnaire and codebook – in Japanese and their English translations – are available on the repository website alongside the report on the descriptive statistics and the dataset [3]. The data available in the repository include the raw survey response data in both csv and dta formats.

Fig. 1 presents the distribution of the respondents’ total household income along with data from Japan’s National Livelihood Survey (NLS) to illustrate the representativeness of the JHPSDGs. In the JHPSDGs, respondents selected the most suitable choice from the categorical variables, as presented in Table 1. In the NLS, respondents reported their actual income. We recategorized the NLS responses using a disclosed report [4] to ensure compatibility with the JHPSDGs. Data collection for the NLS was cancelled, and no data were available for 2020. Although respondents in the JHPSDGs tended to have a higher income, the income distributions of the sample and population appear to be similar.

Table 2 presents a list of all variables included in the dataset. Using “year” and “rakutenid” variables, users can construct a panel dataset. The variable “rakutenid” is the identification number given to each respondent, whereas “panel” indicates if the observation is a panel dataset. A value of 1 indicates the observation occurred in both years and 0 indicates that the observation is not a panel.

The variables we collected include:

- Household composition
- Number of children

|                | JHPSDGs2019 | JHPSDGs2020 | NLS 2019 |
|----------------|-------------|-------------|-----------|
| less than 1 million yen | 3.39        | 3.54        | 6.40      |
| 1-2 million yen      | 5.61        | 5.96        | 12.60     |
| 2-4 million yen      | 21.72       | 21.15       | 26.40     |
| 4-6 million yen      | 23.95       | 23.63       | 19.20     |
| 6-8 million yen      | 18.26       | 18.23       | 14.30     |
| 8-10 million yen     | 11.30       | 11.92       | 8.90      |
| 10-12 million yen    | 6.60        | 6.86        | 5.00      |
| 12-14 million yen    | 3.30        | 3.27        | 2.90      |
| 14-16 million yen    | 2.37        | 2.04        | 1.60      |
| 16-18 million yen    | 0.77        | 0.71        | 0.90      |
| 18-20 million yen    | 0.77        | 0.67        | 0.50      |
| 20 million yen or more | 1.97        | 2.02        | 1.20      |
| Total               | 100.01      | 100.00      | 99.9      |

Fig. 1. Distribution of income from the JHPSDGs and NLS. Values indicate shares of respondents in each category (%). In the JHPSDGs, respondents who did not respond to the question were excluded from the calculation.
### Table 1
Distribution of respondents based on quota

| Regional bloc | Hokkaido | Tohoku | Kanto | Chubu | Kinki | Chugoku | Shikoku | Kyushu | Okinawa |
|---------------|----------|--------|-------|-------|-------|---------|---------|--------|---------|
| Age group     | 2019 Male |        |       |       |       |         |         |        |         |
| 18-19         | 9         | 28     | 17    | 14    | 5     | 2       | 2       | 10     |
| 20-24         | 21        | 82     | 37    | 36    | 12    | 5       | 2       | 23     |
| 25-29         | 21        | 83     | 40    | 34    | 12    | 5       | 2       | 22     |
| 30-34         | 25        | 93     | 44    | 37    | 13    | 6       | 2       | 26     |
| 35-39         | 28        | 100    | 48    | 41    | 14    | 7       | 2       | 28     |
| 40-44         | 33        | 117    | 59    | 52    | 18    | 9       | 2       | 32     |
| 45-49         | 32        | 120    | 58    | 51    | 17    | 8       | 2       | 30     |
| 50-54         | 29        | 102    | 51    | 44    | 14    | 7       | 2       | 27     |
| 55-59         | 31        | 86     | 46    | 39    | 14    | 8       | 2       | 29     |
| 60-64         | 33        | 82     | 48    | 38    | 15    | 8       | 2       | 32     |
| 65-69         | 41        | 102    | 61    | 51    | 20    | 11      | 2       | 38     |
| 70-74         | 27        | 82     | 46    | 42    | 15    | 8       | 2       | 26     |

| Age group     | 2019 Female |        |       |       |       |         |         |        |         |
|---------------|-------------|--------|-------|-------|-------|---------|---------|--------|---------|
| 18-19         | 8           | 25     | 15    | 13    | 5     | 2       | 2       | 9      |
| 20-24         | 19          | 76     | 35    | 36    | 11    | 5       | 2       | 22     |
| 25-29         | 20          | 77     | 36    | 34    | 11    | 5       | 2       | 22     |
| 30-34         | 24          | 86     | 40    | 39    | 13    | 6       | 2       | 27     |
| 35-39         | 27          | 94     | 45    | 43    | 14    | 7       | 2       | 30     |
| 40-44         | 32          | 110    | 55    | 54    | 17    | 9       | 2       | 34     |
| 45-49         | 32          | 113    | 56    | 54    | 17    | 9       | 2       | 32     |
| 50-54         | 30          | 96     | 48    | 48    | 14    | 9       | 2       | 29     |
| 55-59         | 32          | 84     | 47    | 41    | 15    | 8       | 2       | 32     |
| 60-64         | 35          | 81     | 48    | 41    | 17    | 11      | 2       | 34     |
| 65-69         | 43          | 106    | 63    | 57    | 21    | 12      | 2       | 41     |
| 70-74         | 33          | 90     | 50    | 48    | 17    | 9       | 2       | 31     |

| Age group     | 2020 Male   |        |       |       |       |         |         |        |         |
|---------------|-------------|--------|-------|-------|-------|---------|---------|--------|---------|
| 18-19         | 10          | 29     | 16    | 14    | 5     | 2       | 2       | 10     |
| 20-24         | 22          | 83     | 37    | 36    | 12    | 5       | 2       | 22     |
| 25-29         | 21          | 84     | 40    | 34    | 12    | 5       | 2       | 24     |
| 30-34         | 24          | 93     | 44    | 37    | 13    | 6       | 2       | 26     |
| 35-39         | 28          | 101    | 48    | 41    | 14    | 7       | 2       | 28     |
| 40-44         | 33          | 117    | 61    | 50    | 18    | 9       | 2       | 32     |
| 45-49         | 32          | 121    | 59    | 52    | 17    | 8       | 2       | 30     |
| 50-54         | 29          | 102    | 50    | 44    | 14    | 7       | 2       | 27     |
| 55-59         | 31          | 87     | 46    | 39    | 14    | 8       | 2       | 29     |
| 60-64         | 34          | 82     | 47    | 39    | 15    | 8       | 2       | 32     |
| 65-69         | 40          | 101    | 59    | 51    | 21    | 12      | 2       | 39     |
| 70-74         | 27          | 81     | 45    | 41    | 15    | 8       | 2       | 27     |

| Age group     | 2020 Female |        |       |       |       |         |         |        |         |
|---------------|-------------|--------|-------|-------|-------|---------|---------|--------|---------|
| 18-19         | 8           | 25     | 15    | 13    | 5     | 2       | 2       | 9      |
| 20-24         | 20          | 77     | 35    | 36    | 11    | 6       | 2       | 22     |
| 25-29         | 21          | 77     | 37    | 35    | 11    | 5       | 2       | 22     |
| 30-34         | 24          | 89     | 40    | 39    | 14    | 6       | 2       | 27     |
| 35-39         | 27          | 94     | 45    | 43    | 14    | 7       | 2       | 30     |
| 40-44         | 33          | 111    | 56    | 52    | 17    | 9       | 2       | 33     |
| 45-49         | 32          | 115    | 56    | 54    | 17    | 9       | 2       | 32     |
| 50-54         | 30          | 95     | 49    | 46    | 14    | 8       | 2       | 29     |
| 55-59         | 32          | 82     | 47    | 41    | 15    | 8       | 2       | 32     |
| 60-64         | 35          | 81     | 49    | 41    | 16    | 9       | 2       | 34     |
| 65-69         | 44          | 106    | 63    | 58    | 21    | 12      | 2       | 43     |
| 70-74         | 33          | 90     | 50    | 47    | 17    | 9       | 2       | 29     |
Table 2
List of variables in the JHPSDGs

| Variable Name | Definition | Source |
|---------------|------------|--------|
| Year          | Year of the survey |         |
| rakutenid     | 1 if panel data | JHPS-CPS |
| panel         |             |        |
| Q9_1_1        | Household composition: Single | JHPS-CPS |
| Q9_1_2        | Household composition: Spouse | JHPS-CPS |
| Q9_1_3        | Household composition: Child's spouse | JHPS-CPS |
| Q9_1_4        | Household composition: Parents of spouse | JHPS-CPS |
| Q9_1_5        | Household composition: Children | JHPS-CPS |
| Q9_1_6        | Household composition: Child's spouse | JHPS-CPS |
| Q9_1_7        | Household composition: Grandchildren | JHPS-CPS |
| Q9_1_8        | Household composition: Your siblings | JHPS-CPS |
| Q9_1_9        | Household composition: Spouse's siblings | JHPS-CPS |
| Q9_1_10       | Household composition: Other relatives | JHPS-CPS |
| Q9_1_11       | Household composition: Non-relatives (friends, etc.) | JHPS-CPS |
| Q9_2          | Number of households | JHPS-CPS |
| Q9_3_1        | Number of dependent children: 1 year old or below | JHPS-CPS |
| Q9_3_2        | Number of dependent children: 2-3 years old | JHPS-CPS |
| Q9_3_3        | Number of dependent children: 4-6 years old | JHPS-CPS |
| Q9_3_4        | Number of dependent children: 1st-3rd year of elementary school | JHPS-CPS |
| Q9_3_5        | Number of dependent children: 4th-6th year of elementary school | JHPS-CPS |
| Q9_3_6        | Number of dependent children: Junior high school | JHPS-CPS |
| Q9_3_7        | Number of dependent children: High school students | JHPS-CPS |
| Q9_3_8        | Number of dependent children: College students | JHPS-CPS |
| Q9_4_1        | Final Education: You | JHPS-CPS |
| Q9_4_2        | Final Education: Spouse | JHPS-CPS |
| Q9_4_3        | Final Education: Father | JHPS-CPS |
| Q9_4_4        | Final Education: Mother | JHPS-CPS |
| Q9_5_1        | Final Education: Major-You | JHPS-CPS |
| Q9_5_2        | Final Education: Major-Spouse | JHPS-CPS |
| Q9_5_3        | Final Education: Major-Father | JHPS-CPS |
| Q9_5_4        | Final Education: Major-Mother | JHPS-CPS |
| Q9_6_1        | Current Work Status: You (Current Job) | JHPS-CPS |
| Q9_6_2        | Work Status: You (First Job) | ESS |
| Q9_6_3        | Current Work Status: Spouse | JHPS-CPS |
| Q9_6_4        | Current Work Status: Father | JHPS-CPS |
| Q9_6_5        | Current Work Status: Mother | JHPS-CPS |
| Q9_7_1        | Employment status: You (Current Job) | JHPS-CPS |
| Q9_7_2        | Employment status: You (First Job) | ESS |
| Q9_7_3        | Employment status: Spouse | JHPS-CPS |
| Q9_7_4        | Employment status: Father | JHPS-CPS |
| Q9_7_5        | Employment status: Mother | JHPS-CPS |
| Q9_8_1        | Your personal total income last year | JHPS-CPS |
| Q9_8_2        | Spouse's total income last year | JHPS-CPS |
| Q9_8_3        | Total household income last year | JHPS-CPS |
| Q9_8_4        | Total income your household is aiming for | JHPS-CPS |
| Q9_9          | Hourly wage for the current job | JHPS-CPS |
| Q9_10_1       | Are you currently looking for a job? You | JHPS-CPS |
| Q9_10_2       | Are you currently looking for a job? Spouse | JHPS-CPS |
| Q9_11         | Reservation wage (hourly wage) | JHPS-CPS |
| Q9_12_1       | Assets such as houses and land | JHPS-CPS; categorical variables were modified |
| Q9_12_2       | Balance of financial assets | JHPS-CPS; categorical variables were modified |

(continued on next page)
| Variable name | Definition | Source |
|---------------|------------|--------|
| Q9_12_3       | Current Mortgage Balance | JHPS-CPS; categorical variables were modified |
| Q9_12_4       | Non-mortgage debt | JHPS-CPS; categorical variables were modified |
| Q10_1_1       | Big five: Extraverted, enthusiastic | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_2       | Big five: Critical, quarrelsome | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_3       | Big five: Dependable, self-disciplined | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_4       | Big five: Anxious, easily upset | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_5       | Big five: Open to new experiences, complex | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_6       | Big five: Reserved, quiet | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_7       | Big five: Sympathetic, warm | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_8       | Big five: Disorganized, careless | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_9       | Big five: Calm, emotionally stable | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_1_10      | Big five: Conventional, uncreative | JHPS-CPS; Scale was modified from 7 to 5 |
| Q10_2_1       | If I have work that can wait to be done tomorrow, I wait until tomorrow to do it | JHPS-CPS |
| Q10_2_2       | Men’s jobs are about earning income, women’s jobs are taking care of the home | JLPS |
| Q10_2_3       | It is best for women to have a job in order to be independent | JLPS |
| Q10_2_4       | It is the government’s responsibility to take care of those who cannot take care of themselves financially | JHPS-CPS |
| Q10_2_5       | It is good to maintain economic growth | JHPS-CPS |
| Q10_2_6       | In general, most people are trustworthy | JHPS-CPS |
| Q10_2_7       | Work is ikigai (the reason for being) | JHPS-CPS |
| Q10_2_8       | I enjoy competing with others | JHPS-CPS |
| Q10_2_9       | Work is for making money | JHPS-CPS |
| Q10_2_11      | Work is for contributing to society | JHPS-CPS |
| Q10_2_10      | I desire job security | JHPS-CPS |
| Q10_3_1       | I participate in international cooperation and international exchange activities | JGSS |
| Q10_3_2       | I devise to reduce power consumption | JGSS |
| Q10_3_3       | I only buy food that I can consume | JGSS |
| Q10_3_4       | I purchase imperfect food (such as those with some scratches or varying in sizes) | JGSS |
| Q10_3_5       | I consume products with fairtrade labels | JGSS |
| Q10_3_6       | Think about your work and the rewarding way you work | JGSS |
| Q10_3_7       | Buy locally produced ingredients | JGSS |
| Q10_3_8       | Set the air conditioner temperature higher in winter and lower in summer | JGSS |
| Q10_3_9       | Collect peace news with interest | JGSS |
| Q10_3_10      | Trade stocks | JGSS |
| Q10_4_1       | Decision-making: Purchase of durable consumer goods | JHPS-CPS; categorical variables were modified |
| Q10_4_2       | Decision-making: Purchase of daily necessities | JHPS-CPS; categorical variables were modified |
| Q10_4_3       | Decision-making: Saving/Investment | JHPS-CPS; categorical variables were modified |

(continued on next page)
**Table 2 (continued)**

| Variable name | Definition | Source |
|---------------|------------|--------|
| Q12_1_1       | Did you know the SDGs? | |
| Q12_1_2       | Did you know the Government of Japan’s SDGs Action Plan? | |
| Q12_1_5       | Please select “I haven’t heard of” in this question (lie scale) | DCS-SDGs; categorical variables were modified |
| Q12_3_1       | I hope the municipality I am currently living in becomes actively involved in the SDGs | DCS-SDGs; categorical variables were modified |
| Q12_3_2       | I hope the school/company I currently belong to becomes actively involved in the SDGs. | |
| Q12_3_3       | If I were to move to a different location in the future, I wish to live in a municipality that is actively involved in the SDGs. | DCS-SDGs; categorical variables were modified |
| Q12_3_4       | If I were to get a job or change occupation, I wish to work for a company that is actively involved in the SDGs. | |
| Q12_3_5       | If there is a 50:50 chance of gaining a 20,000yen return or 10,000yen loss, I will not invest. | JHPS-CPS |
| Q12_3_6       | People around me have a higher standard of living than I do | JHPS-CPS; scale modify from 5 to 3 |
| Q12_3_7       | I am happier today than I was a year ago | JHPS-CPS; categorical variables were modified |
| Q12_3_10      | I care about corporate strategy when I choose their product or service | CABS; with some modifications |
| Q12_3_11      | I care about corporate SDG contribution when I choose their product or service | |
| Q12_3_12      | I purchase a sustainable product or service even if it is more expensive | |
| sdg_meta1_    | Browser respondent used to participate | |
| sdg_meta1_    | Operating system respondent used to participate | |
| sdg_meta1_    | Resolution of the device respondent used to participate | |
| gender        | Gender | |
| female        | Female | |
| age           | Age | |
| pref          | Prefecture | |
| region        | Region bloc | |
| it_resptime   | Response time (min) | |
| agegroup      | Age group by 5 years | |
| p_extraversion| Personality extraversion: Q10_1_1 (reverse) + Q10_1_6 | |
| p_agreeableness| Q10_1_2 + Q10_1_7 (reverse) | |
| p_conscientiousness| (reverse) + Q10_1_8 | |
| p_neuroticism | Personality neuroticism: Q10_1_4 + Q10_1_9 | |
| p_openness    | Personality openness: Q10_1_5 (reverse) + Q10_1_10 | |
| schooling     | Years of schooling: recoded Q9_4_1 as (1=9) (2=10.5) (3=12) (4=13) (5=14) (6=14) (7=16) (8=15) (9=18) (10=19.5) (11=21) (12=) | |
| higher_ed     | 1 if college or above; generate higher_ed=1 if Q9_4_1>=7&Q9_4_1<=11 | |

(continued on next page)
| Variable name         | Definition                                                                 | Source |
|----------------------|----------------------------------------------------------------------------|--------|
| spouse_schooling     | Spouse’s years of schooling; Q9.4_2 is recoded using the same method as “schooling” |        |
| father_schooling     | Father’s years of schooling; Q9.4_3 is recoded using the same method as “schooling” |        |
| mother_schooling     | Mother’s years of schooling; Q9.4_4 is recoded using the same method as “schooling” |        |
| income               | Income (10 thousand yen); recoded Q9.8_1 as (1=50) (2=150) (3=300) (4=500) (5=700) (6=900) (7=1100) (8=1300) (9=1500) (10=1700) (11=1900) (12=2000) (13=..) |        |
| ln_income            | Log of income                                                              |        |
| income2              | Individual income                                                          |        |
| spouse_income        | Spouse income (10 thousand yen); Q9.8_2 is recoded using the same method as “income” |        |
| ln_spouse_income     | Log of spouse_income                                                       |        |
| hh_income            | Household income (10 thousand yen); Q9.8_3 is recoded using the same method as “income” |        |
| ln_hh_income         | Log of hh_income                                                           |        |
| hopeful_income       | Household income hoped for (10 thousand yen); Q9.8_4 is recoded using the same method as “income” |        |
| ln_hopeful_income    | Log of hopeful_income                                                      |        |
| hhsize               | Number of hhd = Q9.2                                                       |        |
| children             | Number of children up to university age                                    |        |
| child_underprimary   | 1 if a respondent has children below primary school age                    |        |
| child_primary        | 1 if a respondent has children of primary school age                        |        |
| child_secondary      | 1 if a respondent has children of secondary school age                     |        |
| child_university     | 1 if a respondent has children of university age                           |        |
| dm_durablegoods      | 1 if a respondent decides to purchase durable goods; recoded as 1 if Q10.4_1 is 1, 0 otherwise |        |
| dm_dailygoods        | 1 if a respondent decides to purchase daily goods; recoded as 1 if Q10.4_1 is 1, 0 otherwise |        |
| dm_invest            | 1 if a respondent decides to invest or save; recoded as 1 if Q10.4_1 is 1, 0 otherwise |        |
| v_intl               | 1 if int'l corporation; recoded as 1 if Q10.3_1 is 1 or 2, 0 otherwise     |        |
| v_energy             | 1 if decrease energy consumption; recoded as 1 if Q10.3_2 is 1 or 2, 0 otherwise |        |
| v_eat                | 1 if buy only what you can eat; recoded as 1 if Q10.3_3 is 1 or 2, 0 otherwise |        |
| v_product            | 1 if buy imperfect products; recoded as 1 if Q10.3_4 is 1 or 2, 0 otherwise |        |
| v_fairtrade          | 1 if buy fair trade; recoded as 1 if Q10.3_5 is 1 or 2, 0 otherwise         |        |
| v_work               | 1 if think about your job satisfaction; recoded as 1 if Q10.3_6 is 1 or 2, 0 otherwise |        |

(continues on next page)
Table 2 (continued)

| Variable name | Definition                                                                 | Source |
|---------------|---------------------------------------------------------------------------|--------|
| v_localgrown  | 1 if buy locally grown food; recoded as 1 if Q10_3_7 is 1 or 2, 0 otherwise |        |
| v_ac          | 1 if use AC efficiently; recoded as 1 if Q10_3_8 is 1 or 2, 0 otherwise    |        |
| v_peace       | 1 if interested in news on peace; recoded as 1 if Q10_3_9 is 1 or 2, 0 otherwise |        |
| v_invest      | 1 if invest; recoded as 1 if Q10_3_10 is 1 or 2, 0 otherwise               |        |

Note: Variable names are a list of all the variables included in the dataset. Definition indicates a brief definition of the variables and a calculation method if constructed using other variables. The source indicates where a question was adopted from, if any.

- The highest education completed and corresponding major of the respondent, their spouse, and their parents
- Work and employment statuses of respondents’ first and current jobs, that of their spouses, and their parents
- Total annual household income, respondents’ individual incomes, and the income goal that the household aims for
- Job-seeking status of respondents and their spouses as well as their reservation wage
- Household assets and debt
- Big Five personality traits (Japanese version of the Ten Item Personality Inventory [5])
- Beliefs and attitudes toward a sustainable lifestyle, pro-environmental behavior, female participation in society, economic growth, and the role of government
- SDG awareness
- Decision-making regarding the purchase of durable and daily goods and regarding savings and investments

2. Experimental Design, Materials and Methods

2.1. Survey design

When we developed the questionnaire for household surveys, we referred to national household survey initiatives, including the Japan Household Panel Survey on the Consumer Preferences and Satisfaction (JHPS-CPS) [6], the Japanese Life Course Panel Survey (JLPS) [7], the Japanese General Social Surveys (JGSS) Project [8], and national-level large-scale surveys, including the Employment Status Survey (ESS) [9], Consumer Awareness Baseline Survey (CABS) [10], and the Dentsu Consumer Survey on SDGs (DCS-SDGs) [11]. Table 2 presents the sources for where and how the JHDSDGs adopted questions.

Using the online survey platform, Qualtrics, we developed a device-friendly survey website. The survey screen given to each respondent was optimized based on the device used.

2.2. Data collection

An online survey was conducted in March 2019 and March 2020. Quota sampling was used to construct a representative demographic dataset. Fig. 2 shows the overall flow of data collection. For both years, we first set a convenience sample size of 6,000 adults aged 18-74 years. Based on Japan’s demographics, we determined 168 quota groups (5-year age groups × sex × regional blocs = 12 × 2 × 7), as shown in Table 1. In Japan, the 47 prefectures are categorized into seven regional blocs. First, we divided the patients into seven groups based on regional blocs,
then into two groups based on sex, and finally into 12 5-year age groups. Based on the Japanese population census, the targeted sample size for each quota group was determined. We assigned Rakuten Insight Inc. (Rakuten), one of the largest research companies in Japan, to provide respondents from a pool of panelists in which over 2.2 million Japanese are registered [12].

As of April 1, 2018, Rakuten had 2,212,088 registered panelists, of which 50.7% were female and 49.3% were male [12]. To understand the characteristics of its own panelist pool, Rakuten conducted a study comparing it with the national census, and several surveys were collected offline through random sampling [13]. Compared with the national population census regarding resident location, household characteristics, housing status, and employment, the Rakuten panelist pool consists of relatively more residents of Kanto, which includes Tokyo and its neighboring prefectures, married couples only households, and employed males; however, the distributions of both the Rakuten panelist pool and the census are similar [13]. Compared with the Public Opinion Survey on the Life of the People regarding standard of living and life satisfaction, the Rakuten panelist pool consists of more panelists claiming a median standard of living, that quality of life remained the same, and that the prospects for quality of life in the future would remain the same [13]. Regarding media outlet exposure, the Rakuten panelist pool consisted of more Internet users and fewer traditional media users, such as newspapers, TV, and radio, compared with the Media Preference Survey respondents [13].

In 2019, Rakuten sent its panelists an invitation email, guiding them to the Rakuten survey website with access to the Qualtrics survey link, which was linked to the survey screen that we developed. After each quota was filled, the link was closed so that additional invitees could no longer access the survey and data collection was completed from the filled quota. In total, 6,043 of the 8,957 participants completed the surveys. In 2020, invitations were sent to 6,043 respondents who completed the survey in 2019. Of these, 4,270 participated and 3,227 completed the

Fig. 2. Data collection flowchart.
survey. Different panelists were invited to fulfil the quota allocations. Among them, 4,206 participated and 2,828 were completed. The 2019 method was used to fill the planned quota for 2020.

Ethics Statement

The study design was approved by the Ethics Committee of the Graduate School for International Development and Cooperation, Hiroshima University on January 8, 2020 (entry 2). Informed consent was obtained from all subjects involved in the study.

CRediT Author Statement

Author Contributions: All the authors approved the final version of the manuscript; Tomomi Yamane: contributed to the conceptualization, project administration, data curation, writing of the original draft, review and editing, and funding acquisition; Shinji Kaneko: contributed to the conceptualization, review and editing, and funding acquisition.

Declaration of Competing Interest

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

Data Availability

Japan Household Panel Survey on Sustainable Development Goals (JHPSDGs) (Original data) (Dataverse).

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