

# (J)AGES Project Data User Guide

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(J)AGES Project Data Summary and User Guide

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## Introduction

The intended audience of this guide is researchers working on their first analysis of the (J)AGES dataset. This document includes information related to surveys during five periods: Wave 1 (AGES 2003), Wave 2 (AGES 2006), Wave 3 (JAGES 2010), Wave 4 (JAGES 2013), Wave 5 (JAGES 2016), the cohort data sets (i.e., data on certification of long-term care need and mortality with the respective wave data as baseline) and panel data sets joining multiple wave data. There are some extra survey data in this project, including Wave 0 (Taketoyo 2000), Wave 1 (Takahama city, Aichi prefecture, Kashiba city and Totsukawa village, Nara prefecture, 2004) and Taketoyo 2008, but they are omitted in this document.

## I. Preparation for the study

### 1. Summary of AGES and JAGES data

#### Beginning of the AGES Project

The AGES Project started in 1999 and was performed on Takahama city and Taketoyo town in Aichi prefecture. Subsequently, surveys were conducted in 2003 on 7 insurers/10 other cities and towns in Aichi prefecture and 12 insurers/15 cities and towns in Kagawa prefecture and Kochi prefecture (Nankoku city and Susaki city).<sup>1</sup> (AGES 2003 or Wave 1)

#### From the AGES to the JAGES

The 2006 survey surveyed nine cities, towns and villages (nine insurers) of the communities surveyed thus far. The survey results can be used as cross-sectional data. (AGES 2006 or Wave 2)

The 2010–2011 survey was conducted in August 2010-January 2012 expanded beyond Aichi prefecture and included 25 insurers in 31 cities, towns and villages.<sup>2</sup> With this explanation, the Aichi Gerontological Evaluation Study (AGES) was renamed the Japan Gerontological Evaluation Study (JAGES). These survey results can also be used as cross-sectional data. (JAGES 2010 or Wave 3)

The 2013 survey was conducted in October-December 2013 on 30 municipalities, including 19 insurers (25 municipalities) that participated in the JAGES survey from Oct to Dec in 2013. These survey results can also be used as cross-sectional data. (JAGES 2013 or Wave 4)

Of AGES2003, **cohort03\_07** consists of the respondents from the six insurers in Aichi prefecture and their subsequent certification for long-term care need and morality followed up over a period of four years (1,461 days), and **cohort03-**

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<sup>1</sup> Surveys were subsequently conducted in 2004 on two insurers (Kashiba city and Totsukawa village) in Nara prefecture and Takahama city, Aichi prefecture. However, the details of the surveys were partially different, so they are treated as two different surveys and have rarely been included in academic analyses jointly with AGES 2003.

<sup>2</sup> Of these, Nishio city, Isshiki town, Kira town and Hazu town were merged in April 2011 into one city (one insurer) but consisted of one city and three towns at the time of data collection (four insurers), so 31 cities, towns and villages and 25 insurers are included in JAGES 2010 (Wave3).

**13** consists of the same data followed up for approximately 10 years. Furthermore, individuals from five insurers in Aichi prefecture in the 2003 and 2006 surveys could be matched. Panel data for this has been created<sup>3</sup>. (**panel03\_06**)

Panel data from two points in time (**panel10\_13**) combining the 2010 and 2013 surveys was created in January 2015. Since these are panel data on two points in time for 24 cities and towns, this enables analysis on multiple locations over time. Furthermore, **cohort10\_13** was created as three-year follow-up data for the subsequent certification of long-term care need and mortality of respondents in the 24 cities and towns studied in the 2010 survey. However, two sets of longitudinal data were not studied for the same follow-up period, depending on the insurer, and should therefore be treated with caution.

The details of the data sets currently being distributed are as follows (see the following page).

The 2016 survey was conducted from September 2016 to January 2017 on 39 municipalities, including the 27 municipalities (34 insurers) that participated in the 2013 survey. The regions included are distributed in 18 todofuken (prefectures, territories, urban prefectures and metropolises) in Hokkaido, Tohoku, Kanto-Koshinetsu, Chubu, Kinki and Kyushu. municipalities

#### Project names

The survey and data primarily collected in Aichi prefecture are termed AGES, nationwide surveys and data collected on 2010 and later are termed JAGES, and (J)AGES is used to refer to both sets of surveys and data within this project.

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<sup>3</sup> Theoretically, the same process as panel03\_06 is possible for two cities in Kochi prefecture, given that datasets for 2003 and 2006 are also available. However, this has not been done at the moment, as Aichi and Kochi cannot be compared directly due to the geographical and cultural differences between the two prefectures.

## JAGES Distributed Data List (As of May 1, 2018)

	Data name	Description of data	City, town or village	N (approximately)	Ver
<b>Presently distributed data</b>					
1	<b>jages2003</b>	2003 Cross-sectional data	Tokai city, Obu city, Chita city, Higashiura town, Handa city, Tokoname city, Agui town, Taketoyo town, Mihama town, Minamichita town, Higashi-kagawa city, Ayuta town, Onohara town, Nankoku city, Susaki city (Total: 15 cities, towns, and villages)	30,000 people	
2	<b>jages2006</b>	2006 Cross-sectional data	Handa city, Tokoname city, Agui town, Taketoyo town, Mihama town, Minamichita town, Nankoku city, Susaki city, Totsukawa village (Total: Nine cities, towns, and villages)	37,000 people	
3	<b>jages2010</b>	2010 Cross-sectional data	Higashikagura town, Higashikawa town, Biei town, Towada city, Iwanuma city, Kashiwa city, Chuo city, Hayakawa town, Nagoya city, Handa city, Hekinan city, Nishio city, Tokoname city, Tokai city, Obu city, Chita city, Agui town, Higashiura town, Minamichita town, Mihama town, Taketoyo town, Isshiki town, Kira town, Hazu town, Watarai town, Kobe city, Totsukawa village, Takaha city, Matsuura city, Nanjo city, Nakijin village (Total: 31 cities, towns, and villages)	100,000 people	v3
4	<b>jages2013</b>	2013 Cross-sectional data	Higashikagura town, Higashikawa town, Biei town, Towada city, Iwanuma city, Kashiwa city, Yokohama city, Niigata city, Chuo city, Hayakawa town, Nagoya city, Toyohashi city, Handa city, Hekinan city, Nishio city, Tokoname city, Tokai city, Obu city, Chita city, Tahara city, Higashiura town, Minamichita town, Mihama town, Taketoyo town, Isshiki town, Kira town, Hazu town, Watarai town, Kobe city, Totsukawa village, Marugame city, Matsuura city, Mifune town (Total 30 cities, towns, and villages)	130,000 people	v3.2
5	<b>jages2016</b>	2016 Cross-sectional data	Higashikawa town, Higashikagura town, Biei town, Otofuke town, Yoichi city, Tomamae town, Towada city, Mashiko town, Nagara town, Chuo city, Hayakawa town, Mori town, Oyama town, Minamichita town, Mihama town, Taketoyo town, Watarai town, Matsuura city, Matsumoto city, Handa city, Hekinan city, Nishio city, Tokoname city, Tokai city, Obu city, Chita city, Higashiura town, Kashiwa city, Matsudo city, Funabashi town, Hachioji city, Yokohama city, niigata city, Nagoya city, Fukuoka city, Iwanuma city, Mifune town, Kobe city, Takahama town (Total 30 cities, towns, and villages)	180,000 people	v1
6	<b>cohort03-07</b>	2003-2007 Cohort data	Handa city, Tokoname city, Agui town, Taketoyo town, Mihama town, Minamichita town. (Total: Six cities, towns, and villages), excludes Northern Chita	14,000 people	
7	<b>cohort03-13</b>	2003-2013 Cohort data	Handa city, Tokoname city, Agui town, Mihama town, Minamichita town, Obu city, Tokai city, Chita city, Higashiura town (Total: 10 cities and towns)	15,000 people	v2
8	<b>cohort10-13</b>	2010-2013 Cohort data ("Data on certification of long-term care need" and "Data on imposed long-term care insurance" combined with 2010 Cross-sectional data).	Higashikagura town, Higashikawa town, Biei town, Towada city, Iwanuma city, Kashiwa city, Chuo city, Nagoya city, Hekinan city, Nishio city, Tokoname city, Tokai city, Obu city, Chita city, Agui town, Higashiura town, Minamichita town, Mihama town, Taketoyo town, Isshiki town, Kira town, Hazu town, Watarai town, Matsuura city (Total 24 cities and towns)	82,000 people	v 3.2
9	<b>cohort10-16</b>	2003-2013 Cohort data	Higashikagura town, Higashikawa town, Biei town, Iwanuma city, Kashiwa city, Chuo city, Nagoya city, Tokoname city, Minamichita town, Mihama town, Watarai town, Nishio city, Matsuura city (Total 13 cities and towns)	55,000 people	v1.2
10	<b>cohort13-16</b>	2013-2016 Cohort data	Higashikagura town, Higashikawa town, Biei town, Iwanuma city, Kashiwa city, Chuo city, Nagoya city, Hekinan city, Nishio city, Tokoname city, Tokai city, Obu city, Chita city, Higashiura town, Minamichita town, Mihama town, Watarai town, Matsuura city, Toyohashi city, Niigata city, Yokohama city, Hayakawa town, Taketoyo town (Total: 23 cities and towns)	98,000 people	v1.1
11	<b>cohort (10-13panel)-16</b>	"Data on certification of long-term care need" and "Data on imposed long-term care insurance" combined with 2010 or 2013 survey data.	Higashikagura town, Higashikawa town, Biei town, Iwanuma city, Kashiwa city, Chuo city, Nagoya city, Tokoname city, Minamichita town, Mihama town, Watarai town, Nishio city, Matsuura city (total 13 cities and towns)	65,000 people	v1.1
12	<b>panel 03-06</b>	2003-2006 Panel data	Tokoname city and towns of Agui, Taketoyo, Mihama and Minamichita (Total: Five cities and towns)	7,000 people	
13	<b>panel 06-10</b>	2006-2010 Two time-point panel data	Tokoname city and towns of Agui, Taketoyo, Mihama and Minamichita (Total: Five cities and towns)	10,000 people	v0 (=alpha version)
14	<b>panel10-13</b>	2010-2013 Panel data (combined 2010 and 2013 cross-sectional data)	Higashikagura town, Higashikawa town, Biei town, Towada city, Iwanuma city, Kashiwa city, Chuo city, Nagoya city, Hekinan city, Nishio city, Tokoname city, Tokai city, Obu city, Chita city, Higashiura town, Minamichita town, Mihama town, Taketoyo town, Isshiki town, Kira town, Hazu town, Watarai town, Kobe city, Matsuura city (Total: 24 cities and towns)	62,000 people	v 1.2
15	<b>panel13-16</b>	2013-2016 Two time-point panel data (combined with 2013 and 2016 cross-sectional data); individuals who responded to both surveys only			v1
16	<b>panel13-16 (Includes withdrawals)</b>	2013-2016 Two time-point panel data (combined with 2013 and 2016 cross-sectional data) Included individuals who did not answer the 2016 survey.			v1
17	<b>panel2006-2010-2013</b>	2006-2010-2013 Three time-point panel data	Tokoname city and towns of Taketoyo, Mihama and Minamichita (Total: Four cities and towns)	6,500 people	v0 (=alpha version)
18	<b>panel2010-2013-2016</b>	2006-2010-2013 Three time-point panel data	Tokai city, Obu city, Chita city, Higashiura town, Tokoname city, Taketoyo town, Mihama town, Minamichita town, Hekinan city, Nishio city, Nagoya city, Watarai town, Matsuura city, Towada city, Iwanuma city, Chuo city, Higashikawa town, Higashikagura town, Biei town (Total: 23 cities, towns and villages)	32,000 people	v1.0
19	<b>panel2010-2013-2016 (includes withdrawals)</b>	2006-2010-2013 Three time-point panel data on 13 cities, towns and villages included in cohort10_16 data (includes individuals who did not answer 2013 and 2016 surveys)	Higashikagura town, Higashikawa town, Biei town, Iwanuma city, Kashiwa city, Chuo city, Nagoya city, Tokoname city, Minamichita town, Mihama town, Watarai town, Nishio city, Matsuura city (Total: 13 cities and towns)	55,000 people	v1
20	<b>jages2010 with medical checkup data</b>	Health checkup data added to 2010 cross-sectional data	Chita city, Higashiura town, Tokai city, Minamichita town, Taketoyo town, Tokoname city (Total: Six cities and towns). *Distributed data excluded missing data for Obu city.	10,000 people	v1
21	<b>weighted jages2013 values</b>	Weighted JAGES2013 data values calculated	Handa city, Tokai city, Obu city, Chita city, Higashiura town, Hekinan city, Nishio city, Towada city, Toyohashi city, Tahara city, Marugame city, Mifune town, Kashiwa city, Nagoya city, Kobe city, Yokohama city, Iwanuma city, Niigata city (18 cities and towns excluding self-governing bodies where the whole study population was surveyed)	797 small areas	v1
22	<b>jages2010 with changes in long-term care need class</b>	Follow-up data on changes in degree of long-term care need and mortality of 2010 survey participants	Higashikagura town, Higashikawa town, Biei town, Towada city, Iwanuma city, Kashiwa city, Chuo city, Matsuura city, Watarai town, Nagoya city, Nishio city, Isshiki town, Kira town, Hazu town, Hekinan city, Minamichita town, Mihama town, Taketoyo town, Agui town, Tokoname city, Tokai city, Obu city, Chita city, Higashiura town (Total 24 cities and towns)	For the 24 cities and towns in the 2010 cross-sectional data	v0
23	<b>jages2010_16 with changes in long-term care need class</b>	Follow-up data on changes in degree of long-term care need and mortality of 2010 and 2013 survey participants	Higashiura town, Higashikawa town, Biei town, Chuo city, Minamichita city, Mihama town, Watarai town, Matsuura city, Hekinan city, Tokoname city, Northern Chita Extended Association, Kashiwa city, Yokohama city, Niigata city, Nagoya city, Nishio city, Toyohashi city, Taketoyo town (10 cities, towns and villages)	67 insurers	v1

\*Subjects in the "10-13-16panel (including withdrawals)" consist of 55,000 individuals living in 13 cities, towns, and villages, out of 100,000 respondents of the 2010 survey, who could be followed up with long-term care need, mortality, and relocation until 2016. Although the sample has been narrowed down, it includes data on certification and mortality until 2016. On the other hand, the "13-16panel (including withdrawals)" data are on a study of approximately 130,000 participants from the 2013 cross-sectional data. Although this does not include certification and mortality data until 2016, the researcher can use the survey identification number and combine it with the 13-16cohort to include it.

\* “Maximum snowfall data” was added (April 2018). This was calculated by finding the mean annual snowfall of the past 30 years by small region (jages2010\_scode). Please contact the JAGES Data Administration Office if you wish to use this data.

\*The distributed data is limited to the ages2003 dataset with cause of death. If you wish to use this data, an application must be made in advance to the Ministry of Health, Labour and Welfare. The data on applications for the use of this data are updated every year in January-March. Please contact the JAGES Data Administration Office for this information.

### Sampling methods

Subjects of the AGES and JAGES surveys are generally adults aged 65 and above who are not certified with long-term care need. Data from some municipalities may partially include data on individuals with long-term care need, but individuals with long-term care need are excluded from the dataset for analysis that will be distributed to researchers (with the exception of Nakijin village). ([See Important Information \[Added on February 2013 and June 16, 2014\]](#))

Survey subjects will be selected in units of cities, towns, and villages. The list of older adults people, aged 65 years and above, was created based on the one of the following choices that was more convenient for the municipality: the Long-term Care Insurance First Insured Person List or the basic resident register. Individuals requiring long-term care were excluded based on the Long-term Care Insurance long-term care certification data. The sampling frame consisted of the remaining individuals. All individuals were generally included if the number was less than 5000, except in the case of budgetary restrictions or the size of the city, town, or village. In the case that this included more than 5000 individuals, questionnaire booklets were distributed to 5000 randomly-selected individuals.

### References (listed in the VI bibliography)

Table II-1 Survey year and survey methods by area

Table II-2 Number of questionnaire booklets distributed, number recovered, and response rate

Table II-3 2003 Survey: Number collected and response rate by version

Table II-4 2010-2011 Survey: Number collected and response rate by city, town, or village

Table II-5 2013 Survey: Number collected and response rate by city, town, or village

Table II-5a 2013 Survey: Number collected and response rate by city, town, or village and by version

Table II-6 2016 Survey: Number collected and response rate by city, town, or village

Table II-7 2003, 2006, 2010 Cross-sectional data set: City, town, or village identification code list

Table II-8 2003, 2006, 2010 Cross-sectional data set: By City, town, or village population density

Figure I-1 2010 Survey (JAGES Survey)

Figure I-2 2010, 2013 Surveys (JAGES Survey)



## 2. Using the data

Contact the JAGES Data Administration Office ([dataadmin.ml@jages.net](mailto:dataadmin.ml@jages.net)) if you wish to use the data. Use of data sets other than those listed in the JAGES Distributed Data List may be discussed, and they may be available for use under conditions specified by the Administration Office. For more information, please contact the Data Administration Office.

The cohort03-13, cohort10-13 data sets with data on cause of death are scheduled for limited distribution in the future. If you wish to use this data, an application must be submitted in advance to the Ministry of Health, Labour and Welfare. The data on applications for use are updated every year in January-March. Please contact the JAGES Data Administration Office for this information.

### Conditions for Using JAGES data

#### [1. Do not share data with third parties]

The 2017 Amendment of the Act on the Protection of Personal Information now requires strict management of data holders. Applicants for data use, please report information on the individuals scheduled to hold the data to the Data Administration Office at the time of your application. If there are changes to information on data holders during the data use approval period, please use the Additional Data User Registration/Deletion form to report these changes to the Data Administration Office.

You may lose your rights to use data in the future in the event that you share data with third parties without contacting the Data Administration Office. Legal action may also be taken according to the Act on the Protection of Personal Information.

#### [2. Submit the research proposal before initiation of the research]

To prevent conflicts with other users of the JAGES data in terms of details of analysis, etc., a research proposal must be submitted for each paper. If you already hold data, please make an online submission of your new research proposal if you plan to use the data for analysis on a different topic.

We reserve the right to call for the withdrawal of your topic from publication in the event that a planned external publication without registration of the research proposal has been discovered. Furthermore, we may prohibit or limit your future data use in the event that data has been misused.

#### [3. Disconnection from the internet while performing data analysis.]

Data should be saved only to a CD-R or an external HDD and should be disconnected from the computer after the completion of analysis. Disconnect your computer from the internet to perform another analysis.

The distributed JAGES data does not contain information from which individuals can be identified. However, it contains a large amount of personal information, such as diseases or financial situations, and it can correspond to information that requires special consideration in the Amended Act on the Protection of Personal Information.

## Data recipients

### 1. JAGES members

Individuals who are approved at a core members' meeting to have made commensurable contributions to JAGES and who have also expressed their intent to contribute to JAGES. They are comprehensively determined based on grants they have obtained (including joint researchers), previous joint research with municipalities in the survey field, first authorship of manuscripts that were reviewed, researchers and former researchers who undertook administrative tasks, and participation in study groups multiple times.

### 2. Non-JAGES members who meet certain conditions

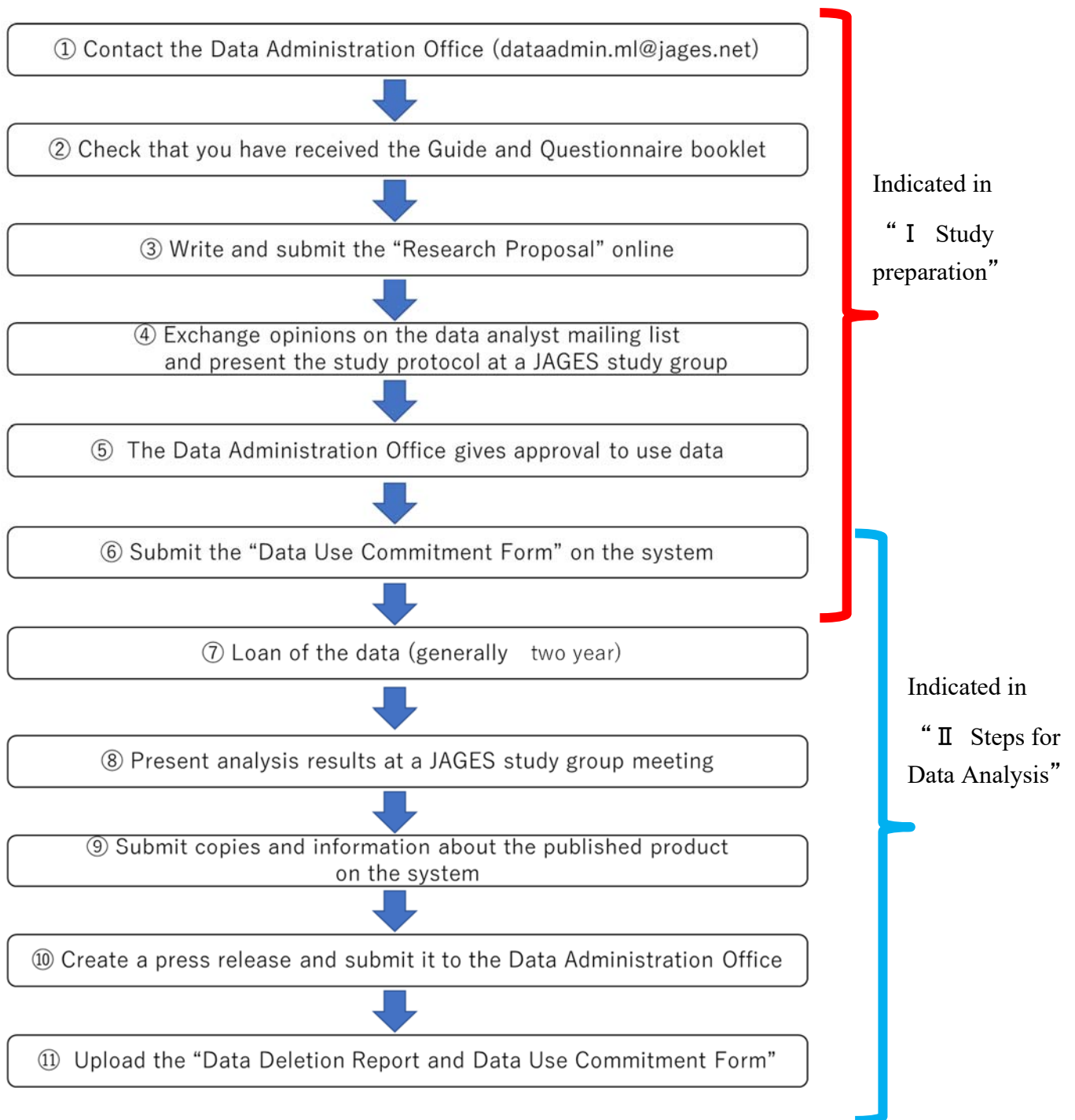
JAGES data was collected using public grants, and it can be used by going through the following procedures. In the case of applications for use by non-JAGES members, we may ask them to include JAGES members in their project or co-authors in research papers, depending on the study topic or data used.

- 1) Report on the study protocol in a study group, etc. (if this is the first time using JAGES data, a report is generally required before sending the data set).
- 2) Report on analysis results in a study group, etc.

If the applicant is an undergraduate or graduate level student, a joint application must be made with an advisor who can take responsibility for data management, etc., using the following steps. Even adult students (i.e., students who also hold full-time employment positions) must follow the same steps if the application is being made as a student for the purpose of writing an academic thesis, etc.

- ① The advisor should contact JAGES core members in advance and consult with them about the details of the study protocol.
- ② Students will make their study application from their own accounts. However, please ensure all three of the following items are completed before application and check all three boxes on the application screen.
  - I have obtained approval from my advisor, who is also the co-applicant, to submit this application with this study protocol.
  - My advisor has approved this application after a full review of the details of the study protocol.
  - The advisor has been explained and understands that the advisor and the applicant hold shared data management responsibilities.
- ③ Please enter the name of the advisor who will be responsible for data management and other duties in the space for applicant information on the study application management screen.
- ④ The student and advisor are both required to sign the commitment form that will be submitted following approval of the study protocol.

## Procedures for using the data



## Description of steps for using the data

### ① Contact the Data Administration Office (dataadmin.ml@jages.net)

Communicate to the Data Administration Office your wish to use the data. The Administration Office will send you information such as the "(J)AGES Project Data Summary and User's Guide" and "Questionnaire booklet."

### ② Check the Guide and Questionnaire booklet you have received.

A. Use the Guide, Questionnaire booklet, and previous references related to JAGES (see the list of published papers on the JAGES website)

- to understand previous and current research related to JAGES
- to examine the validity of the topic of research that the applicant is seeking to initiate
- to understand whether the topic can be tested using JAGES data

The reason a review of previous studies is done within (J)AGES is to avoid competition with other researchers (\*). This prevents overlapping study topics and increases the productivity of the project overall. If you wish to study topics that are similar to other researchers' protocols, we may ask researchers with potentially overlapping study topics to directly make arrangements with each other as needed.

\*Competition of research details will be determined by whether the papers cannot be published independently due to markedly similar study topics.

Previous studies within (J)AGES can be searched on the (J)AGES website at <http://www.jages.net>.

B. Plan the type of analysis to perform.

See research papers on members' pages and set a research question upon understanding of the overall mission of JAGES.

Those who wish to use JAGES data must read this guide (in particular, the section "Using the data") thoroughly to learn about the structure of the data sets before selecting the dataset and variables. Make a plan for which variables from which datasets to analyze before obtaining the actual data set. See the following on how to select the data set and variables.

C. Selecting the data set

The structure of the data to be used must be understood before selecting the data set. Use cross-sectional data for investigating the relationships between variables through one survey (one time-point). Use cohort data for examining how a variable at a single baseline time-point is associated with subsequent mortality or long-term care need. Use panel data for observing changes in variables covered in surveys taken over two points in time. See the previous study on JAGES website for analysis and outcomes by data structure.

There are two methods for searching the variables to be used: ① Questionnaire booklet with variable names ([2003 version/2006 version/2010 version/2013 version/2016 version](#): PDF files), ② [Variable list](#) (Excel file). To check whether a variable has been surveyed in cities, towns and villages in all surveys, [see on Questionnaire Items by Version \(December 5, 2012 Complete version\)](#).

③ Write and submit the "Research Proposal" online

Create an account on the JAGES website, log in, and write and submit the research proposal online.

[Details to be indicated in the research proposal]

1. The conclusions of previous studies related to the topic you wish to study and objectives that remain to be studied as indicated in the previous study or studies
2. Study design (ex. cross-sectional study, cohort study, panel data analysis, multi-level analysis)
3. Data set to be used (please indicate the name of the data set)
4. Intended analysis model (ex. Cox proportional hazards model, logistic regression analysis) and objective and explanatory variables (please indicate specific variable names and details) intended to be studied in the analysis
5. Hypotheses and expected outcomes

④ Exchange opinions on the data analyst mailing list and present the study protocol at a JAGES study group

A research proposal submitted online is posted on the analyst mailing list (j-ages@googlegroups.com) after it has been checked by the Data Administration Office. Gather opinions from JAGES members on the mailing list, and hold discussions as needed based on the opinions. Present the study protocol again at a JAGES study group. Revise the protocol as need in response to the discussions.

- You will receive information about registering to the data analysis mailing list (j-ages@googlegroups.com) after making the online submission of the research proposal. Make a registration application if you proceed to making an actual data analysis.
- This step can be replaced by a substituting person (study team member) or discussions using the mailing list for applicants who cannot participate in multiple study groups due to cost or location (ex. those abroad or in a distant location). The meeting is held in Tokyo, Nagoya, and online.
- The Data Administration Office may request revisions to the research proposal.

⑤ The Data Administration Office gives approval to use data

When the members have approved the research proposal, the applicant makes revisions based on their advice on the system.

⑥ Submit the “Data Use Commitment Form” on the system.

Upload the “Data Use Commitment Form” (Format 1) on the study application management screen.

⑦ Loan of the data (generally two year)

The data set is mailed or handed over in person at a study group or another occasion. Conduct analysis, publish, and write per the research proposal.

## Data Administration Office contacts

Data Administration Office

Manager: Naoki Kondo

Data Management: Ryo Takase

Communications: Yumi Suzuki

Japan Agency for Gerontological Evaluation Study, 6-2-1, Kashiwanoha, Kashiwa-shi, Chiba 277-0845

tel: 04-7137-8207

JAGES Data Administration Office e-mail: dataadmin.ml■jages.net

### <Supplementary information>

#### 1. About the mailing list

info.ml■jages.net- For announcing study group-wide events, etc. General mailing list with over 170 registered individuals (Managed by: Miyaguni (Chiba Office))

j-ages■googlegroups.com- For inquiries on data patch information or analysis, discussion about questionnaire booklets, and for exchanging and updating information related to analysis and research. This mailing list is also used for consulting and posting research proposals, and for consultations related to posted papers (Managed by: Miyaguni (Chiba Office))

\*Change the ■ to @ for the above mailing addresses for posting

#### 2. Starting a new analysis on the same data

To simplify the procedure, submit only a proposal for starting a new analysis using the same data (submission of the Commitment Form can be omitted).

1. Proposal form: including the research proposal
2. Commitment form: only at initial submission of the research proposal
3. Data Deletion Report Form: including the research proposal

#### 3. Application to use an updated version of the same data set

To simplify the procedure, submission of the proposal and commitment forms can be omitted when requiring a new version of the same data set for an approved research project. In general, the data can be used for one year from the initial request for the data set.

### <Caution>

For the study focusing on Iwanuma using nationwide data (disaster-struck versus non-disaster struck areas), you are not required to receive Collaborative Institutional Training Initiative (CITI)

(<https://edu.citiprogram.jp/defaultjapan.asp?language=japanese>), but ethical approval should be obtained from your

affiliated institution. Furthermore, the NIH does not need to be included in the acknowledgments for studies that do not focus on Iwanuma. Use of independent items from Iwanuma data must be approved by Professor Kawachi.

## II. Steps for Data Analysis

### Outline of the procedure

Analysis and publication are completed per the research plan within two year of registration, through the study proposal management system. Make another presentation at a study group upon completion of analysis for advice on possible additions to be made to the analysis and how to write the discussions for future presentations at conferences or thesis writing.

If changes to the method of analysis or independent and objective variables are required during the data analysis phase, report the changes, consult the study group or data analyst ML (j-ages■googlegroups.com) and Data Administration Office, and make appropriate revisions.

If the results of the analysis are not seen after two year of system registration, the Data Administration Office will communicate with the data user. Depending on the situation, the data user may be required to submit the “Data Deletion Report and Commitment Form” to the Data Administration Office, and each analyst must safely destroy the loaned data set (memory media) responsibly.

### Cautions in handling data

- JAGES study data is managed with stricter standards than other research data. Personal information is deleted from distributed data. This is because it contains many fields through which it may be possible to identify individuals by combining fields. Furthermore, if there is even one instance of leaked data, we may lose the privilege to conduct future joint research with the cities, towns, and villages.
- Individuals who have applied to use data are recorded and managed so that the individual who is likely to have caused the leak can be identified in the event of data leakage.
- Saving on a device connected to the internet increases the risk of data theft or other damage (servers at national universities and international research institutions have been victims of such malevolent acts).
- Therefore, throughout the process, from commencement of analysis to the deletion of data, data users are required to strictly comply with this rule of processing data on computers disconnected from the internet.
- Furthermore, do not save data onto the hard disk of a computer connected to the internet.
- Data should be saved only to a CD-R or an external HDD, and it should be disconnected from the computer after completion of the analysis.
- About the secondary variable syntax library

The loaned dataset generally includes an ID to be used for matching various data with survey response data, and does not include secondary variables (GDS, SOC) that are created by processing (calculating) multiple variables. Secondary syntax (statistical data processing software for analysis) or the secondary variable code list, found in the “Dataset creation Tips” on (J)AGES member pages, can be used in using secondary variables.

- Immediately report any abnormal data found in the process of analysis to the Administration Office. The syntax and description should be submitted for newly created secondary variables that can be shared (use Document 5 Secondary variable New Syntax Report form). The mailing list (j-ages■googlegroups.com) may be used to request



for opinions of other members before reporting or submitting to the Administration Office.

### **At completion of data analysis**

- ⑧ Present analysis results at a JAGES study group meeting

Obtain advice from the study group before external publication.

- ⑨ Publish the fruits of your work within two year of the registration of the research proposal, and upload copies of the published papers on the study application management system.

- ⑩ Submit information about the published product (abstracts for conferences, supplements, newspaper, and website articles) to the Chiba Administration Office by e-mail.

Example for research papers: JAGES T, JAGES H, JAGES K. Title. Journal of ○○. 2018, 111 (22) 、 22-33, doi:110.1241/××.60.502. (peer review)

- ⑪ Create press releases for the general audience and the mass media and submit them to the Data Administration Office (see the press release list under “About JAGES” on the HP).

- ⑫ After the end of the data use period, upload the “Data Deletion Report and Data Use Commitment Form” via the study application management screen. Each analyst is required to safely destroy the loaned data set (memory media). Submit the “Data Deletion Report and Data Use Commitment Form” when the analysis must be interrupted for any reason.

As a general rule, the data loan period is two year. However, an application for an one year extension of the data use period can be made in special cases, such as being in the middle of a review for a submitted thesis or being near the completion of the research (Data is available for 3 years on total from application). In that situation, upload the “Application for Extension of Data Use and Commitment Form” via the study application management screen.

### III Internal Regulations and Documents for Submission

#### **JAGES (Japan Gerontological Evaluation Study) Internal Regulations for Core Members and Members**

November 23, 2013

Revised January 5, 2014

Revised February 11, 2014

Revised May 15, 2017

- The Research Project Leader (Principal Investigator) is to be voted on by core members.
- Core members are several individuals appointed by the Principal Investigator.
- Members are individuals approved by core members at a core members' meeting, who have been judged to have made commensurable contributions to JAGES and who have also expressed their intent to become a core member. For example, they are determined comprehensively based on grants they have obtained (including co-researchers), previous joint research with municipalities in the survey field, first authorship of peer-reviewed papers, researchers and former researchers who undertook administrative tasks, and participation in study groups multiple times.
- Researchers undertaking administrative tasks have both the rights and obligation to participate in core member meetings.
- Information about core members and members will be published on the website.
- The organization as of 2014 and later is as follows:

Research Project Leader (Principal Investigator): Katsunori Kondo

Core members (core investigators): Toshiyuki Ojima, Jun Aida, Naoki Kondo, Masashige Saito

November 23, 2013

January 5, 2014

May 15, 2017

These internal regulations aim to designate the points that should be considered in determining the authors for manuscripts of studies based on (J)AGES project data.

These regulations are modelled after the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals of the International Committee of Medical Journal Editors (ICMJE).

(<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>).

The ICMJE recommendations are as follows.

- 1) Substantial contributions to the conception or design of the work, or the acquisition, analysis, or interpretation of data for the work AND
- 2) Drafting the work or revising it critically for important intellectual content AND
- 3) Final approval of the version to be published AND
- 4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

The author must meet all four abovementioned conditions.

The names of individuals who have expressed their intention to be involved in the study as a co-author at the stage of presentation and discussion of the research proposal, and who made contributions that meet the above conditions, will be given co-authorships for the study.

If single-authored papers are conventional in the academic field or journal for submission, publication under one author is allowed under the following conditions. The JAGES project name must be indicated in the body of the text or acknowledgments even if the paper is published under one author's name.

- In general, the first paper must be submitted in the form of a co-authored paper as mentioned above.
- Approval must be obtained in advance at a core members' meeting.
- However, papers that present outcomes of JAGES in non-original papers, such as tutorial papers, may be exceptions to this rule.
- Obtain approval after consultation in a JAGES core members' meeting if you are not sure.

List all core members and members on the website starting in 2014.

The internal regulations will be implemented starting with submissions made on January 1, 2014.

## Cautions in Using (J)AGES Data

Version1.1 Revised October 31, 2009  
Version1.2 Revised September 22, 2010  
Version1.3 Revised October 20, 2010  
Version1.4 Revised February 20, 2013  
Version1.5 Revised April 18, 2014  
Version1.6 Revised November 20, 2014

### Rights of users

- (1) Receiving and using the dataset that has been approved for use
- (2) Results of analysis may be published in the form of conference presentations or papers.

### Obligations of users

- (1) In making an application, the attached “Application form,” “Commitment Form,” and “Proposal Form” must be submitted to the administration office to obtain approval from the Project Leader (Katsunori Kondo).
- (2) Items in the “Commitment Form” must be strictly adhered to in managing the data set.
- (3) See attachment “User’s Manual” for use of the data set.
- (4) Report analysis results to study groups hosted by the (J)AGES project by participating as much as possible. This is the condition to be met in the event of external publication of results.
- (5) Researchers who contributed to creating or analyzing used data should be added as a co-author, or their names should be indicated in the Acknowledgments, and previous studies should be appropriately referenced in publishing results.
- (6) Note the acknowledgments and study funds indicated in the “(J)AGES Project Data Summary and User Guide.”
- (7) Variables used in the analysis and methods for creating secondary variables (Syntax, etc.) and variable names and questions in English should be reported according to the designated format if published in English.
- (8) This should be adhered to as much as possible if tasks related to surveys related to project execution, data cleaning and analysis are partially shared.
- (9) Errors in data that are detected through the analysis should be reported promptly to the Administration Office to improve quality of the data.
- (10) For smooth information exchange and sharing between data users, register user’s email address to the data users’ mailing list.

### Other cautions

- (1) For the data set, set two types: “General members’ set” and “Project promoting members’ set.” Promoting members have priority for using newly constructed data for a certain period.
- (2) Project promoting members include members who have made important contributions to tasks related to constructing the data (ex. survey design, data cleaning).
- (3) The author’s information (name, affiliation, position, field of specialization, research achievements) is to be indicated on the JAGES website for publications made using the data.
- (4) Names of co-authors other than the applicant may be included for publishing results, but the right to use the data is exclusive to the applicant.
- (5) In principle, the fees for transport for (J)AGES study groups will be paid by the following parties:
  - ① The person who presented their research on the day of the study group meeting.
  - ② The first author of a reviewed original article using JAGES data within two years of publication (the author must be a designated speaker at the study group meeting).
  - ③ A member of a JAGES-related organization that won external funds and who appropriated the research fund to the Principal Investigator.
- (6) Indicate the full term: JAGES (Japan Gerontological Evaluation Study) at the first appearance of the term in papers or abstracts.
- (7) As much as possible, include “JAGES project” in the titles of papers or conference abstracts. Furthermore, include terms in the title so that it is clear whether it was a “longitudinal” or “cohort” study, particularly for longitudinal studies. If it is a panel study, make sure that the title or abstract clearly indicates that it is one.

# Written Pledge of JAGES Data Use

Drafted on 8/4/2013

Revised on February 20, 2018

I pledge to comply with the following terms when using the JAGES dataset.

## Terms of Use

### Purpose

- 1 (a) The dataset provided may only be used for the purpose of academic or policy-making/implementation analysis specified in the submitted research proposal. It shall be secondary analysis in nature.
- (b) In principle, the dataset provided may be used only by the individual who has submitted the research proposal. If a group of individuals or an organization wishes to use the dataset, the head of the group or the organization shall obtain permission in advance from the JAGES principal investigator and the administrative office concerned. The responsibility for data use must always be identified.

### Protection of personal information

- 2 The data user must protect personal information in the data, and must not specify individuals in the dataset.

### Prohibition of duplication

- 3 (a) The dataset provided must not be duplicated without the principal investigator's permission.
- (b) Once the research specified in the research proposal has been completed, or when it is discontinued, the data user must immediately return the dataset or report to the JAGES head office that the dataset has been deleted and is not restorable. Besides, he/she must ensure that all the users of the same dataset have deleted it from their computers and external hard disk drives, and it is not restorable.

### Prohibition of secondary distribution

- 4 (a) The dataset provided may be used only by the data user(s) on the approved JAGES research proposal. Data users may not provide the dataset to a third party.
- (b) If the registered data user wishes to have a third party use the data for data cleaning and/or analysis, the registered data user must report the location and computer to the JAGES head office in advance and must accompany the third party during the work.

### Prohibition of commercial use

- 5 The dataset provided may not be used for commercial purposes.

### Data handling

- 6 (a) The data user must be mindful of data security. The data user may not use file-sharing programs or send the dataset by e-mail as an attachment, and must handle the dataset with care, avoiding unnecessary movement of the data.
- (b) Storage and analysis of the dataset shall be undertaken on a computer or another storage medium that is not connected to the Internet.

### Security obligations

- 7 The data user may not release the information obtained through data analysis, such as data content or the research groups' plans, to a third party, without the principal investigator's permission.

### Publication of findings

- 8 (a) Any journal publications or conference presentations must be preceded by a presentation or report in a monthly research group meeting.
- (b) At the time of publication/presentation, the author must list the names of researchers that contributed to the data acquisition and/or analysis as co-authors or mention them in the acknowledgements. The author must also adequately cite past research from the JAGES project.
- (c) At the time of publication/presentation, the author must provide correct information on data, such as information on study participants, research methods, and research findings.
- (d) A copy of deliverables, such as journal articles, must be sent to the JAGES head office (preferably in PDF format).
- (e) A journal article must be accompanied by an acknowledgement that the work was accomplished with the use of JAGES project data. Furthermore, the author shall obtain permission for publication from his/her co-authors in advance.

### Suspension or termination of data use

- 9 If the data user violates any of these terms or any of the items specified in *The Outline of the JAGES Project Data and the Guide to their Use*, he/she will not be allowed to use the dataset. If the data user does not comply with the instructions made by the JAGES head office, he/she will not be allowed to use the dataset. In these cases, the use of all JAGES datasets, including the one already provided, may be suspended or prohibited thereafter.

### Disclaimer

- 10 The data providers are not accountable for any inconveniences derived from data use by the data user.

I hereby acknowledge that I have read and understood the terms set out above. I take full responsibility for all the other users of the dataset listed in the research proposal.

Signature and date

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Title and institution

---

If the applicant is an undergraduate or graduate student, please have the advisor also sign below.

Signature and date

---

Title and institution

---

# Data Deletion Report and Commitment Form

(Created October 5, 2015)

(Revised March 23, 2018)

## Report

I hereby report that I have (completed / interrupted) use of JAGES data and submit the results of the research to the JAGES Administration Office.

### 1. Study title

### 2. Data set

### 3. Works: "Title" (Place of publication/presentation)

- Please send the conference presentation abstracts and articles published in academic journals, etc., in pdf format to the Administration Office.

## Commitment Form

1. We hereby agree that all users of data listed in the research proposal have permanently deleted all individual data provided and datasets saved on computers and external hard drives with the end of the use of the JAGES data.

2. We hereby agree that all users of data listed in the research proposal will permanently delete all data sets saved on computers and external hard drives after completion of the analysis in the case that the same data set is being used for another research plan.

If the applicant on the left is an undergraduate or graduate student, please have the advisor also sign below.

Month	Date	Year
Affiliation/Position name		
Name (Signature)		

Month	Date	Year
Affiliation/Position name		
Name (Signature)		

# Application for Extension of Data Use and Commitment Form

(Created February 20, 2015)

(Revised March 23, 2018)

## Report

Two years have passed since the application to use JAGES data. I hereby request an extension of data use for the reason below.

Title of the research proposal for the previous application

1. The paper we submitted is still under review.

Journal title:

Article/paper title:

Month    Day    Year of submission:

2. We are nearing completion of the work.

Expected completion of analysis (month    / year    )

Submitting journal or presenting conference title:

3. Other

(Report your current status of analysis)

## Commitment Form

1. I understand the loan period of JAGES data is generally two years.

2. I hereby agree that all users of data listed in the research proposal will promptly and permanently delete all data sets.

If the applicant on the left is an undergraduate or graduate student, please have the advisor also sign below.

Month	Date	Year
Affiliation/Position name		
Name (Signature)		

Month	Date	Year
Affiliation/Position name		
Name (Signature)		

## Secondary Variable New Syntax Report

(Created February 20, 2013)

We created a new secondary variable syntax that we believe can be shared by many analysts and submit it herein.

1. Statistical software used and dataset (Ex., SPSS, JAGES2010v1)
2. Variables used (Ex: gds\_2sf10 gds\_2sa10 gds\_2ai10 gds\_2em10 gds\_2br10 gds\_2fg10 gds\_2be10 gds\_2hp10 gds\_2nd10 gds\_2hm10 gds\_2fr10 gds\_2lb10 gds\_2vt10 gds\_2nh10 gds\_2oc10)
3. Newly created secondary variables and variable name (Ex.: GDS score s\_gds\_x10, GDS3 group s\_gds3c10)
4. Explanation on the secondary variable (Ex.: GDS score s\_gds\_x10 is a score of responses to the GDS15 items with 0 minimum or 15 maximum points. If there was a missing value for even one item, the entire GDS score was treated as a missing value. The GDS3 group s\_gds3c10 divides GDS scores into three groups based on the s\_gds\_x10 of 0-4 points (not depressed), 5-9 points (depressive tendency), and 10-15 points (depressed).

Month

Date

Year

Affiliation/Position name

Signature

Stamp



## IV (J)AGES Data User Guide

### 1. Definition of terms

Several terms will be defined first for data sharing.

Wave	A cluster of surveys that were conducted on target areas** in the same period * using the same questionnaire booklet.
Questionnaire booklet	A questionnaire used for data collection in various surveys.
Version	A type of questionnaire booklet from the same period. For example, pages 1-10 are composed of common (core) items, and pages 11-12 are composed of optional items with different content. In Wave 3, five versions of questionnaire booklets A, B, C, D and E were used (however, version E was only used in Nagoya, Kashiwa and Kobe in surveys conducted in 2011).
Data set	A single or combined data obtained in each wave. Takes the form of a table (spreadsheet) used for analysis and is composed of cases *** (columns) and variables (rows).

\* A wave

does not necessarily include surveys that were conducted within the same year. Some surveys may continue into the next year.

\*\* Surveyed geographical or administrative areas where study populations were sampled. In general, the (J)AGES survey takes samples from the first insured persons aged 65 years within areas covered by the insurers. In most cases, there is one insurer for each administrative city, town, or village. However, there were some exceptions among the insurers that have participated in our surveys so far: The Aichi Prefecture Northern Chita Extended Association covers four cities and towns, the Hokkaido Taisetsu Association covers three towns, and Nanjo city and Nakijin village are both in the Okinawa Prefecture Extended Association for Nursing-care Insurance, which is jointly formed by two cities, eight towns and 18 villages of the 41 total cities, towns and villages of Okinawa. Although Isshiki town, Kira town, and Hazu town in Aichi prefecture were merged with Nishio city in April 2011, the survey was conducted in January 2011, so the dataset treats these as four insurers, three towns, and one city.

\*\*\* =Respondents (insured persons).

### 2. Wave

Three major waves that are widely used in large-scale cross-sectional studies, cohort studies, and panel studies (ages2003, ages2006, jages2010) have been completed within the (J)AGES project thus far. The surveys conducted in Taketoyo town and Takahama city in February 2000 were preliminary surveys (Wave 0). The outlines of each wave are displayed in TableV-1.

TableV-1 Summary and participating insurers of surveys of each wave

Wave name Waves in <b>bold print</b> are main waves Short names are in parentheses ( )	Outline	Surveyed region (prefecture)	Survey participant insurers Insurers included in panel data in <b>bold print</b> , insurers included in cohort data are shaded.
<b>wave 1</b> <b>(AGES2003)</b>	15 cities, towns, and villages (12 insurers included 1 extended association) in Aichi, Kagawa, and Kochi prefectures were surveyed in 2003-2004.	Aichi  Kagawa Kochi	Northern Chita Extended Association (Tokai, Obu, Chita cities, and Higashiura town), Handa city*, <b>Tokoname city, Taketoyo town, Mihama town, and Minamichita town</b> Higashi-kagawa city, Ayauta town, Onohara town Nankoku city, Susaki city
<b>wave 2</b> <b>(AGES2006)</b>	Conducted in nine total cities, towns, and villages, including Aichi prefecture, Nara prefecture and two cities in Kochi in 2006-2007.	Aichi  Nara Kochi	<b>Towns of Tokoname, Agui, Mihama, Minamichita, and Handa city</b> Totsukawa village Nankoku city, Susaki city
<b>wave 3</b> <b>(JAGES2010-2011)</b>	In progress since 2010. Extended largely beyond Aichi prefecture, in 31 cities, towns, and villages (25 insurers**) nationwide, and is thus called the JAGES (Japan Gerontological Evaluation Study). There is no data set combined with the previous waves; this will be worked on in the future.	Hokkaido  Aomori Miyagi Chiba Yamanashi Aichi   Mie Nara Hyogo Okayama Nagasaki Okinawa  Total 12 prefectures	Taiseiki Extended Association (Higashikagura, Higashikawa, Biei towns) Towada city Iwanuma city Kashiwa city Chuo city, Hayakawa town Nagoya city, Northern Chita Extended Association (Tokai city, Obu city, Chita city and Higashiura town), Handa city, <b>Tokoname city, Agui town, Taketoyo town, Mihama town, Minamichita town,</b> Hekinan city, Nishio city, Isshiki town, Kira town and Hazu town Watarai town Totsukawa village Kobe city Takaha city Matsuura city Nakajin village, Nanjo city**  Total 25 insurers

\*Although Handa city is included in the cohort data with 2003 as the baseline, it is not included in the panel data.

\*\*Nakijin village and Nanjo city in Okinawa prefecture are both in the Okinawa Prefecture Extended Association for Nursing-care Insurance, with 28 member cities, towns, and villages. However, caution must be paid to the fact that it does not cover all the member cities, towns, and villages unlike the Taisetsu Extended Association in Hokkaido or the Northern Chita Extended Association in Aichi prefecture.

#### Reference) Outlines of surveys not included in main waves and participating insurers

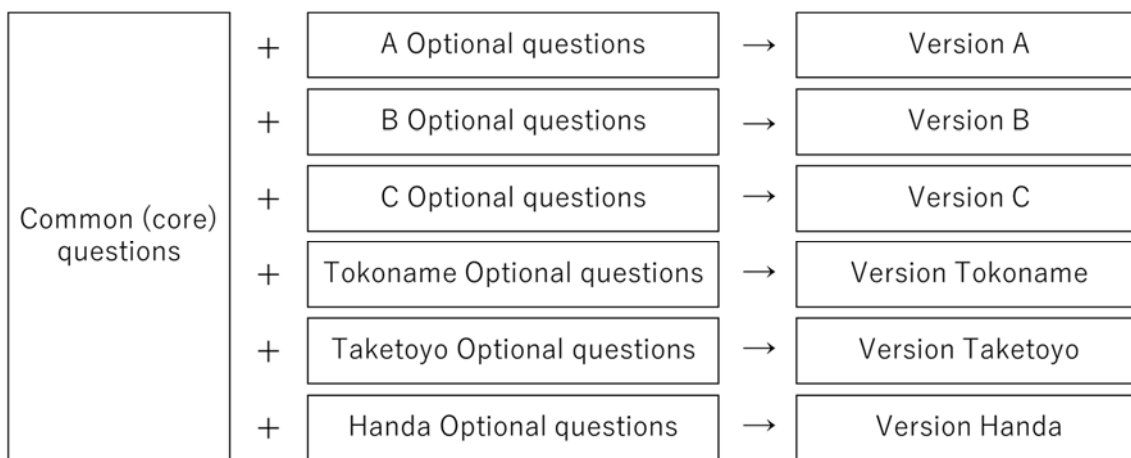
Wave 0 (Taketoyo 2000)	Conducted in one city and one town in Aichi prefecture in 1999-2000.	Aichi	Taketoyo town, Takahama city
wave 1'	Conducted in one city and Aichi prefecture and one city and one town in Nara prefecture in the same period as Wave 1. However, the details of the questionnaire booklet are very different from Wave 1, so it is treated as a different wave, but is not treated jointly with waves 2 and after, either.	Aichi Nara	Takahama city Kashiba city, Totsukawa village
Taketoyo2008	Surveyed one town in Aichi prefecture in 2008.	Aichi	Taketoyo town

### 3. Questionnaire booklets and versions

In general, data collection for (J)AGES surveys used questionnaire forms called the “Questionnaire booklet.” The content of the questionnaire booklets are not always the same and vary slightly between waves. Furthermore, the “Basic Questionnaire booklet” is the standard form within the same wave, but there are several other versions as follows. This is to avoid putting a lot of stress of respondents by having a large number of questions in order to include more exploratory questions in the questionnaire booklet.

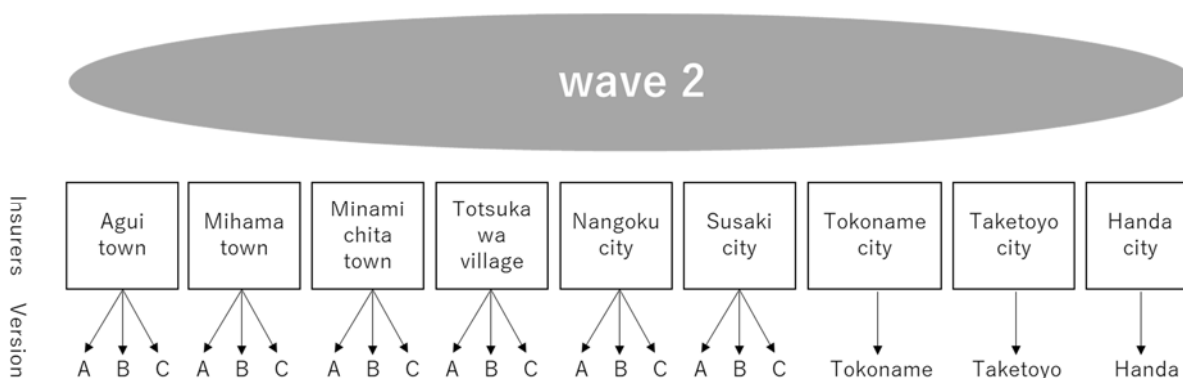
A questionnaire booklet within one wave is composed of common (core) questions that are included in questionnaires for all respondents, and of optional questions that are included in specific versions of the questionnaire. For example, in Wave 2, the composition of each version is shown in Fig. V-1.

Figure V-1 Composition of each version in Wave 2



In Wave 2 (2006-2007), respondents from each insurer in Agui, Mihama, and Minamichita towns in Aichi prefecture, Nankoku, and Susaki cities in Kochi prefecture and Totsukawa village in Nara prefecture were randomly assigned to three groups who were given one of the questionnaire booklets: version A, B or C. Since the Tokoname version was used for Tokoname city, the Taketoyo version for Taketoyo town, and the Handa version for Handa city, six total versions of questionnaire booklets were used in this wave. (Figure V-2)

Figure V-2 Participating insurers and assignment of questionnaire booklet versions in Wave 2



Furthermore, since there were certain items that were deleted from or added to questionnaires depending on insurer requests or policies, details of questionnaire forms with the same version of the same basic questionnaire booklet may not be completely identical. For details, see [Questionnaire items list by version](#).

Versions may be named directly to express the contents of the questionnaire booklet (dementia, family/abuse, oral/nutrition), simply be categorized by an alphabet (A, B, C), or be named by the area surveyed. Table V-2 displays the list of versions in each wave.

Table V-2 Versions included in each wave (on individuals aged 65 years and older)

Wave name Waves in bold print are main waves	Version	Contents of optional items	Notes
<b>Wave 1 (ages2003)</b>	Dementia*	Dementia	In Aichi prefecture, respondents were randomly assigned to three groups and given one of three versions. In Kagawa and Kochi, all respondents answered the questionnaire booklet that included all optional items.
	Family/Abuse*	Family/Abuse	
	Oral/Nutrition*	Oral/Nutrition	
	Takahama Dementia	Frequency of shopping and of hospital visits	
<b>Wave 2 (ages2006)</b>	A	Community SC/Society/Values/Relationship with grandchildren	Respondents from the respective insurers of three towns in Aichi prefecture, two cities in Kochi prefecture, and one village in Nara prefecture were randomly assigned to three groups and given different versions.
	B	Abuse/Community social capital	
	C	Sleeping habits/Pets	
	Tokoname	No oral/No Hasegawa scale	The same questionnaire booklet was used on all respondents in Tokoname city.
	Taketoyo	Local items (original items of municipalities)	The same questionnaire booklet was used on all respondents in Tokoname city.
	Handa	Optional item: Abuse Hasegawa Dementia scale and items related to private information were deleted.	The same questionnaire booklet was used on all respondents from Tokoname city.
<b>Wave 3 (jages2010)</b>	A	Family long-term care/treatment/lifestyles	Respondents of each insurers (with the exception of Nagoya, Kashiwa and Kobe cities) were randomly assigned to four groups and given different versions.
	B	Oral/Optimism scale/Self-rated level of happiness	
	C	Community social capital/Abuse	
	D	Self-rated standards of living/Sleep/Dementia/Past SES/Bathing	
	E	Physical activity	For Nagoya, Kashiwa, and Kobe cities, version E was added to the abovementioned versions A-D. Samples of each insurer were randomly assigned to five groups and given different versions.
	Hayakawa town	Local items (original items of municipalities)	The same questionnaire booklet was used on all respondents from Hayakawa city
	Nakijin	Local items (original items of municipalities)	The same questionnaire booklet was used on all respondents from Nakijin village
	Nanjo	Local items (original items of municipalities)	The same questionnaire booklet was used on all respondents from Nanjo city

\*The versions in Wave 1 with items “Dementia,” “Family/Abuse,” and “Oral/Nutrition,” in books such as *Kensho “Kenkou kakusa shakai” [Validating Health in Unequal Society]* (Igakushoin, 2007), may be indicated as “Chiho” [Dementia], “Kaigo” [Long-term care], and “Syoku-sha” [Diet and Social life] in some documents.

The variables representing versions in each dataset are numebr2 for AGES2003, qstn3vs7 for AGES2006 and file for JAGES2010, respectively.

#### 4. Data set

As previously stated in “1. Definitions of terms,” a data set is an aggregation of single or combined data obtained in each wave to facilitate analysis. Data users submit the Commitment form, Application form, and Proposal form to the JAGES head office and receive the data set they need in a format that can be analyzed using statistical software such as SPSS or Stata.

##### (1) Dataset types

Datasets created using (J)AGES data are broadly categorized under the following three types.

Cross-sectional data	Aggregation of data from one wave.
Cohort data	Cross-sectional data and subsequent outcomes (death, certification of long-term care need or unable to follow up) and data on numbers of days between that outcome from baseline.
Panel data	Combined of all variables of wave data of two or more time points.

##### (2) Relationship between Waves and Data sets

The area (insurers) covered by each wave are contained in the following data sets.

**Table V-3 Relationship between Waves and Datasets\*** (Shaded terms are extended associations, not names of cities, towns, or villages)

		Wave 1			Wave 2		Wave 3			
		Aichi prefecture		Other two prefectures	Aichi prefecture	Other two prefectures	Aichi prefecture		Other 11 prefectures	
Data type	Prefecture	Cohort follow-up	Other		Cohort follow-up		Cohort follow-up	Other		
		Number of insurers	6	1	5	6	3	6	7	12
		Insurer	Tokoname Agui Taketooyo Mihama Minamichita Handa	Northern Chita	Higashi Kagawa Ayauta Onohara Nankoku Susaki	Tokoname Agui Taketooyo Mihama Minamichita Handa	Nankoku Susaki Totsukawa	Tokoname Agui Taketooyo Mihama Minamichita Handa	Nagoya Northern Chita Hekinan Nishio Isshiki Kira Hazu	Taisetsu Towada Iwanuma Kashiwa Chuo Hayakawa Watarai Totsukawa Kobe Takaha Matsuura Okinawa <sup>1)</sup>
	Cross-sectional	ages2003	○	○	○					
	ages2006				○	○				
	jages2010						○	○	○	
Cohort	cohort03_07	○								
	cohort03_10	○								
	cohort06_10				○ <sup>2)</sup>					
Panel	panel03_06	○ <sup>2)</sup>			○ <sup>2)</sup>		○ <sup>2)</sup>			
	panel03_10	○ <sup>2)</sup>			○ <sup>2)</sup>		○ <sup>2)</sup>			

	panel06_10	o <sup>2)</sup>			o <sup>2)</sup>		o <sup>2)</sup>		
--	------------	-----------------	--	--	-----------------	--	-----------------	--	--

1) As for the Extended Association, surveys have covered three member towns in the Taisetsu Extended Association and four member cities and towns in the Northern Chita Association, that is, the surveys have covered all member cities and towns of said insurers. However, only Nakijin village and Nanjo city are surveyed among the 28 member cities, towns and villages of the Okinawa Prefecture Extended Association for Nursing-care Insurance.

2) Longitudinal studies by panel data are impossible for the Handa city surveys on 2006 and 2010 because they were taken under the condition that individuals would not be identified.

Letters in gray are in the process of data set building

(3) Community data

Community data are added to the data on six cities and towns in Aichi prefecture in the AGES2003. See the document by Tomoya Hanibuchi for community data.

JAGES2010 data includes data on elementary school districts. See “AGES deta no shikibetsu hensuu kodo bukku [AGES Data Distinguished Variables Code Book]” (September 17, 2012) by Doctoral Institute for Evidence Based Policy (EBP) for JAGES2010 community data codes. We expect to receive more detailed data on community information from the areas where the insurer can provide us data.

**5. Panel Data set**

Large-scale AGES surveys prior to Wave3 were only conducted in 2003 and 2006, so they had already been joined in a panel (wide format) and the data set had been provided to data users by the AGES Administration Office. However, the cross-sectional data sets (ages2003, ages2006) that were the basis of the combined data set had been cleaned. In addition, the combinations of panels would increase as cross-sectional data would increase in the future. For that reason, we have been outsourced the generation of panel data set as of February 2013. Please see the explanatory document, which is also expected to be provided by the contractor that will create the data set.

**6. Variables and values**

All variables are given unique variable codes that are combinations of letters, numbers, and underscores.

Example:

srh\_4\_\_4

adl\_3\_\_4

tret\_2\_4

Although this rule is not always strictly followed in data sets ages2006 and later, in ages2003, the digits signify the following: The last digit generally signifies the survey year, and the number of answer choices are separated by an underscore. In ages2003, the underscore may be repeated to follow the eight-digit rule for many variables. Please note this carefully.

The first three or four digits	The questionnaire topic is expressed in short form in letters.
--------------------------------	--

	One underscore
	The number of answer choices
	One or two underscores
The last one or two digits	Survey year (represented year)

For example, srh\_4\_3 is on questions related to self-rated health, has four answer choices, and was used in the Wave 1 survey in 2003-2004. Furthermore, the same topic of self-rated health can have more than one variable: The variable for a question with five choices in the 2006-2007 survey has the code of shr\_5\_7, and one with four choices has the code of shr\_4\_7.

When only one answer is allowed per question, the question corresponds to one variable, and the number attributed to the selected answer choice is the value. When multiple selections are allowed, one answer choice corresponds to one variable, and the values are “yes” or “no” (or “applies” or “does not apply”).

### (1) Values for variables for optional items

- If there are multiple versions of the same data set, the value for variables for the group that had optional items that are not included in the questionnaires that other respondents received will be “System missing value (no value entered).” However, unanswered questions are also treated as “System missing value,” and there is no way to distinguish between the two in the data entry process. To check whether a variable is particular to a version, cross-tabulate with the version-specific variable. The variables representing versions in each data set are numebr2 for AGES2003, qstn3vs7 for AGES2006 and file for JAGES2010, respectively.

### (2) About variable labels

- Not all variables and values are labeled. The breakdown of variables and values can be checked in the ① Questionnaire booklet with variable name ([2003 version](#)/[2006 version](#)/[2010 version](#)/[2013 version](#)/[2016 version](#): PDF files), and the ② [Variable list](#)(Excel file).
- For analysis, it is convenient to use your own labels for variables and values.

### (3) Missing values

Missing values may be expressed as 0, 9, 90, 98, 99 or a blank (or a “.” in some statistical software).

There is no manual regarding missing codes in the 2003 data. According to the 2003 code book from the member’s page, there are three possibilities: 0, 99, or system missing value (either a blank space or “.”).

In the 2006 survey, missing values may be expressed as “90: Missing from version,” “98: No response or system missing,” or “99: Resistance response.” The following are possible reasons for missing data.

- 1) Missing from version -- the respondent did not get that version of the questionnaire booklet.
- 2) System missing -- the respondent did not get that version of the questionnaire for reasons other than “missing from version.” (Ex.: Questions that only respondents who answered “yes” to the previous question would answer.)

- 3) No response -- The respondent did not answer that question despite being asked for a response.
- 4) Resistance response -- the respondent failed to answer a question correctly, so a value other than one of the options has to be entered in the data entry stage for convenience. (Ex.: Multiple answers are circled for a question that asks for only one answer.)

In the 2010 survey, there are two types of missing data: “-9999: Resistance response” and “Blank space or ‘.’” The following are possible reasons for missing data.

- 1) Missing from version--the respondent did not get that version of the questionnaire that contained the optional question.
- 2) Missing option--the respondent did not a subject of that question for reasons other than “missing from version.” (Ex.: Questions that only respondents who answered “yes” to the previous question would answer.)
- 3) No response--The respondent did not answer that question despite being asked for a response.
- 4) Resistance response--the respondent failed to answer a question correctly, so a value other than one of the options has to be entered in the data entry stage for convenience.

Resistance responses may include the following cases.

--The answer choices are “yes” and “no,” and both have been circled.

--The question asks the subject to select three answers, but five answers have been selected.

--A question asks about frequency, and the answer choices are “Almost every day, two to three days a week, once a week, one to two times a month, several times a year, or none” but two answers, “two to three days a week” and “once a week” are circled.

- In general, 1) and 2) must be excluded from analysis. As for 3) and 4), the researcher must evaluate which is appropriate according to the purpose; exclude it from the analysis or generate a new category of "invalid / no response" to be included in the analysis.
- Even if core items and optional items in the versions have also been deleted at the discretion of the municipality (insurer). For necessary variables, if all the subjects of a municipality (insurer) are missing values, it is necessary to exclude them from the analysis. Check all variables to be used before analysis by cross-tabulation with the city, town, or village (munif\_\_4 for AGES2003, new\_muni in AGES2006, mcode for JAGES2010).
- The way of dealing with missing values can impact the overall results, interpretation, and results of the analysis and research. It is also an ethical issue and requires serious consideration by the researcher. Items coded as 0, 9, 90, 98, 99 or -9999 can be entered temporarily with a blank space (or “.”). Then the researcher him/herself can refer to the questionnaire booklet, variable search file, or code book, compare its meaning to the purpose of their analysis, and re-code as needed, or otherwise treat the missing values with responsibility. See Paul D. Allison, (2001), *Missing Data*, Sage Publication and other references for methods to deal with missing values.

#### (4) Filled questionnaire booklets PDF

The JAGES Administration Office stores the filled questionnaire booklets in PDF format after data entry has been completed. These PDF files, which are the raw source of the entered data, can be viewed by the JAGES data user after



consulting the Administration Office, explaining the purpose for the request, and being approved that the intent is appropriate.

(5) Definitions of response rate and follow-up rate in panel data

1. Response rate is calculated from distribution number and response number of cross-sectional data.

2. Indicate that surveys form were re-distributed to [number of survey subject] and responses received back from [number of survey participant]..

\*The follow-up rate varies depending on the research question, so it is not defined by the Administration Office.

Ex. 2010-2013 panel data

Numbers of 2010 cross-sectional data distributed in the municipalities covered by the 10-13panel: 141,452

Numbers of cross-sectional data responded from the municipalities covered by the 10-13 panel: 92,272 (Baseline response rate: 65.2%)

Of these, the 2013 survey form was distributed to 77,714 individuals, and responses were received from 62,438.

V During paper writing

## 1. Ethical considerations

The JAGES project was approved by the ethics review board related to research involving humans at Nihon Fukushi University.

Application number 10-05, Approved on July 27, 2010

Study title: Japan Gerontological Evaluation Study (JAGES) project on a large-scale cohort

The 2013 survey has also been approved by the ethics review board.

Application number 13-14, Approved on August 6, 2013

Study title: Japan Gerontological Evaluation Study (JAGES) project on a large-scale cohort

The 2016 survey was approved by the National Center for Geriatrics and Gerontology and Chiba University.

[National Center for Geriatrics and Gerontology]

Receipt number: No.992 Approved January 27, 2017

Project name: JAGES (Japan Gerontological Evaluation Study) epidemiological research on health and lives of elderly in 40 Japanese cities, towns and villages included disaster-struck areas

[Chiba University]

Receipt number: 2493 October 21, 2016

Project name: JAGES (Japan Gerontological Evaluation Study) Epidemiological research on health and lives of elderly in 40 Japanese cities, towns and villages included disaster-struck areas

A copy of the abovementioned report on the ethics review is stored under the JAGES-related ethics review list on the JAGES member researcher's page of the JAGES website, and it can be viewed and downloaded.

## 2. Grants

In writing the paper, indicate the survey methods, etc., as appropriate, with references to "[Table II-1 Survey year and survey methods by area.](#)" With regard to grants, follow the paragraph in Publishing Results of the Commitment Form. An example follows.

As a general rule, indicate the information below on grants regardless of which year the data you used comes from. This is with consideration for the fact that ongoing research funds are involved in the processing or writing of past data, and because it is recommended to list all research funds that may be involved in the future exhaustively to avoid conflicts of interest. This rule has been implemented since May 2017.

\*However, delete information on past research funds as appropriate when using new cross-sectional data only.

(1) Papers in English

[Using data for which all research funds were listed]

This study used data from JAGES (the Japan Gerontological Evaluation Study). This study was supported by Grant-in-Aid for Scientific Research (15H01972, 15H04781, 15H05059, 15K03417, 15K03982, 15K16181, 15K17232, 15K18174, 15K19241, 15K21266, 15KT0007, 15KT0097, 16H05556, 16K09122, 16K00913, 16K02025, 16K12964, 16K13443, 16K16295, 16K16595, 16K16633, 16K17256, 16K17281, 16K19247, 16K19267, 16K21461, 16K21465, 16KT0014, 17K04305, 17K34567, 17K04306, 25253052, 25713027, 26285138, 26460828, 26780328, 18H03018, 18H04071, 18H03047, 18H00953, 18H00955, 18KK0057, 19H03901, 19H03915, 19H03860, 19K04785, 19K10641, 19K11657, 19K19818, 19K19455, 19K24060, 19K20909, 20H00557) from JSPS (Japan Society for the Promotion of Science); Health Labour Sciences Research Grants (H26-Choju-Ippan-006, H27-Ninchisyuu-Ippan-001, H28-Choju-Ippan-002, H28-Ninchisyuu-Ippan-002, H29-Chikyukibo-Ippan-001, H30-Jyunkankinado-Ippan-004, 18H04071, 19FA1012, 19FA2001) from the Ministry of Health, Labour and Welfare, Japan; the Research and Development Grants for Longevity Science from Japan Agency for Medical Research and development (AMED) (JP17dk0110027, JP18dk0110027, JP18ls0110002, JP18le0110009, JP20dk0110034, JP20dk0110037), the Research Funding for Longevity Sciences from National Center for Geriatrics and Gerontology (24-17, 24-23, 29-42, 30-30, 30-22, 20-19); Open Innovation Platform with Enterprises, Research Institute and Academia (OPERA, JPMJOP1831) from the Japan Science and Technology (JST); a grant from the Japan Foundation For Aging And Health (J09KF00804), a grant from Innovative Research Program on Suicide Countermeasures(1-4), a grant from Sasakawa Sports Foundation, a grant from Japan Health Promotion & Fitness Foundation, a grant from Chiba Foundation for Health Promotion & Disease Prevention, the 8020 Research Grant for fiscal 2019 from the 8020 Promotion Foundation (adopted number: 19-2-06), a grant from Niimi University (1915010), grants from Meiji Yasuda Life Foundation of Health and Welfare. The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the respective funding organizations.

(If listing on the necessary research funds)

“This study used data from JAGES (the Japan Gerontological Evaluation Study). This study was supported by JSPS (Japan Society for the Promotion of Science) KAKENHI Grant Number (JP15H01972→If necessary, please replace or add your own JSPS grant), Health Labour Sciences Research Grant (H28-Choju-Ippan-002→If necessary, please replace or add your own KAKENHI grant), Japan Agency for Medical Research and Development (AMED) (JP17dk0110017, JP18dk0110027, JP18ls0110002, JP18le0110009, JP20dk0110034, JP20dk0110037), Open Innovation Platform with Enterprises, Research Institute and Academia (OPERA, JPMJOP1831) from the Japan Science and Technology (JST), a grant from Innovative Research Program on Suicide Countermeasures (1-4), a grant from Sasakawa Sports Foundation, a grant from Japan Health Promotion & Fitness Foundation, a grant from Chiba Foundation for Health Promotion & Disease Prevention, the 8020 Research Grant for fiscal 2019 from the 8020 Promotion Foundation (adopted number: 19-2-06), a grant from Niimi University(1915010), grants from Meiji Yasuda Life Foundation of Health and Welfare and the Research Funding for Longevity Sciences from National Center for Geriatrics and Gerontology (29-42, 30-22).(If necessary, please add your own grant)

”

## Details on the main six research funds

1. JSPS Grants (15H01972)
  - ① Principal Investigator: Katsunori Kondo (Professor of the Center for Preventive Medical Sciences, Chiba University)
  - ② Study title: Elucidating the process of generating well-being disparity in the elderly and Social capital
  - ③ Study period: 29105-2017 2015 Grant-in-aid for Scientific Research from JSPS
  
2. Japan AMED “Research and Development Grants for Longevity Science”
  - ① Principal Investigator: Katsunori Kondo (Professor of the Center for Preventive Medical Sciences, Chiba University)
  - ② Study title: Study to promote the prevention of long-term care through community-building
  - ③ Study period: October 15, 2015-March 31, 2018  
2015 Research fund from Japan AMED
  
3. 2016 Health Labour Sciences Research Grants (H28-Choju-Ippan-002)
  - ① Principal Investigator: Katsunori Kondo (Professor of the Center for Preventive Medical Sciences, Chiba University)
  - ② Study title: Study to promote the prevention of long-term care through community-building
  - ③ Study period: 2016-2018  
2016 Health Labour Sciences Research Grant (Policies for Longevity)
  
4. Japan AMED “Personal Health Records (PHR) Utilization Project”
  - ① Principal Investigator: Katsunori Kondo (Professor of the Center for Preventive Medical Sciences, Chiba University)
  - ② Study title: Developing a Utilization model of Personal Health Records (PHR) as a Strategy for Preventing Long-term Care
  - ③ Study period: 2016-2018  
2016 Research fund from Japan AMED
  
5. Research Funding for Longevity Sciences from the National Center for Gerontology and Geriatrics (29-42)
  - ① Principal Investigator: Takao Suzuki (Co-investigator: Katsunori Kondo)
  - ② Study title: Comprehensive study of a Longevity Cohort
  - ③ Study period: 2017
  
6. World Health Organization (Internal Reference No.WHO APW 2017/713981)
  - ① Principal Investigator: Katsunori Kondo (Center for Gerontology and Social Science, National Center for Geriatrics and Gerontology)
  - ② Study title: Study on Public Health and Long-term Care Policies on the Elderly Population for

## Achieving Universal Health Coverage (UHC) and Policy and Public Health System-Building

- Consult with the applicable research organization if you wish not to list grants from for-profit organizations.
- See the paragraph in the VI document for grant information for details on grants for each survey year.

VI Documents

**Table II-1 Survey year and survey methods by area (Revised February 2013)**

\*Studies are generally on adults aged 65 years and above who are not certified with long-term care need.

\*Each survey is composed of common items (core items), optional items and “original items” according to the interests of each city, town or village. The original items are rarely analyzed for academic purposes and have thus been excluded from the data set distributed to researchers. <sup>4</sup>See Table V-2 for optional item versions.

\*There are three versions of Wave 1 (all items responded to in Kagawa prefecture only) There are three versions of Wave 2 (Tokonama, Toyotake, and Handa used original surveys). There are five total versions to Wave 3: Four earlier versions were used for 28 cities, towns, and villages. A fifth Exercise Epidemiology version (version E) was used in Kashiwa, Nagoya, and Kobe only. Hayakawa, Nakijin, and Nanjo were surveyed using an original survey version that did not include optional items.

	Wave (Short titles)	Year	Surveyed year	Version	Area	Sampling
Main 3 waves	Wave 1 AGES 2003	2003	10/2003	Three versions	Chita region, Aichi prefecture (Northern Chita, Handa Tokoname, Agui, Taketoyo, Mihama, Minamichita)	5,000-subject samples were randomly selected for Northern Chita, Handa, and Tokoname. The entire study population was surveyed in the remaining areas.
			2/2004	Three versions unified into one version	Kagawa prefecture (Higashikagawa, Ayauta, Onohara)	Entire study population surveyed
				Three versions	Kochi prefecture (Nankoku, Susaki)	5000 subjects randomly selected
	Wave 2 AGES 2006	2006	3/2006	One version (Tokoname version)	Aichi prefecture (Tokoname)	Entire study population surveyed
			7/2006	One version (Tokoname version)	Aichi prefecture (Taketoyo)	Entire study population surveyed
			2-3/2007	Three versions	Chita region, Aichi prefecture (Agui, Mihama, Minamichita) Nara (Totsukawa) Kochi (Nankoku, Susaki)	Entire study population surveyed
			3/2007	One version (Handa version)	Aichi prefecture (Handa)	Entire study population surveyed
	Wave 3 JAGES 2010	2010	7/2010	Four versions	Miyagi prefecture (Iwanuma)	Entire study population surveyed (by Tohoku University)
			8/2010	Four versions	Chita region, Aichi prefecture (Northern Chita, Tokoname, Agui, Taketoyo, Mihama, Minamichita)	¼ of the study subjects were randomly selected in Northern Chita. The entire study population was surveyed in all other areas.
			10/2010 10-12/2011 for Wakugawa district only.	One version (Nanjo version) <sup>5</sup>	Okinawa prefecture (Nakijin) city	Entire study population surveyed by leaving or interviews. *By Ryukyu University
			1/2011	Four versions	Aichi prefecture (Hekinan, Nishio, Isshiki, Kira, Hazu) Nagasaki prefecture (Matsuura)	Approximately half were randomly selected
			1-2/2011	Four versions	Aichi prefecture (Handa)	Approximately 1/6 were randomly selected
			1-2/2011	Four versions	Yamanashi prefecture (Chuo)	Entire study population surveyed *by Yamanashi University
				One version (Hayakawa version)	Yamanashi prefecture (Hayakawa)	Entire study population surveyed *by Yamanashi University
		Four versions	Nara (Totsukawa) Mie prefecture (Watarai)	Entire study population surveyed		

<sup>4</sup> Researchers who wish to analyze original items by cities, towns, and villages, please contact the Administration Office individually.

<sup>5</sup> However, the Nanjo city version survey was used in the Wakugawa district survey, which was also conducted in October-December 2011.

			3/2011	Four versions	Hokkaido (Taisetsu)	Entire study population surveyed *by National Institute of Population and Social Security Research
		2011	4-5/2011	Four versions	Okayama prefecture (Takaha) Aomori prefecture (Towada)	The entire study population was surveyed in Takaha city. A little less than half were randomly selected in Towada city.
			10/2011	One version (Nanjo version)	Okinawa prefecture (Nanjo)	Survey left by a welfare commissioner, or by a visiting interviewer, for subjects who needed it. *by Ryukyu University
			12/2011	Five versions	Aichi prefecture (Nagoya)	25,000 subjects randomly selected (approximately 5%)
			12/2011 1/2012	Five versions	Chiba prefecture (Kashiwa)	Sample of 5,993 individuals consisting of a-d below *by Chiba University a. Individuals from the Kashiwa Village neighborhood association. b. Individuals with addresses in 173-8, Wakashiba, Kashiwa city c. Individuals with addresses in 227-6, Wakashiba d. 5,000 individuals randomly selected among those who do not apply to a, b, or c above (approximately 10%)
			12/2011 1/2012	Five versions	Hyogo prefecture (Kobe)	Approximately 200 individuals randomly selected from each of the 78 elementary and middle school districts (Approximately 4%) *By WKC
		2013	10-12/2013	Five versions	Continued from 2010: Taiseki Extended Association (Higashi-kawa, Higashikagura, Biei), Towada, Iwanuma, Kashiwa, Hayakawa, Totsukawa, Watarai, Kobe, Matsuura, Tokoname, Taketoyo, Mihama, Minamichita, and the Northern Chita Extended Association (Tokai, Chita, Obu, and Higashiura), Handa, Nishio, Hekinan, and Nagoya  New: Toyohashi, Tahara, Marugame, Mifune, Yokohama, and Niigata	Sampled in one of the following patterns depending on municipality size, etc.  1) Entire study population surveyed (Higashikawa, Higashikagura, Biei, Iwanuma, Chuo, Hayakawa, Totsukawa, Watarai, Matsuura, Tokoname, Taketoyo, Mihama, Minamichita, Kashiwa city, and the Kashiwanoha Campus area) 2) Random sampling (Marugame, Mifune, and Niigata) 3) Random sampling by small areas (Toyohashi, Tahara, and Yokohama) 4) Re-selected study population and respondents from the previous survey collecting panel data and adjusted number of subjects by age or region so as to be used for regional diagnosis. (Kashiwa city except Towada and the Kashiwanoha Campus area, Tokai, Obu, Chita, Higashigura, Handa, Hekinan, Nishio, Nagoya, and Kobe)
Other surveys	Wave 0 Taketoyo2000	1999	2/2000	One version	Aichi prefecture (Taketoyo Takahama)	Entire study population surveyed
	Wave 1'	2004	9/2004	Three versions	Nara prefecture (Kashiba)	3500 subjects randomly selected
				Three versions	Nara (Totsukawa)	Entire study population surveyed
			1/2005	Two versions	Aichi prefecture (Takahama)	Entire study population surveyed Distribution and recovery methods differed by residence type (households of elderly living alone, elderly only, or general)
Taketoyo2008	2008	2/2008	One version	Aichi prefecture (Taketoyo)	Entire study population surveyed	

**Table II-2 Number of questionnaire booklets distributed, number recovered, and response rate (as of May 15, 2012 )**

The recovered number and response rate of the 2003 survey on Table II-2 are different from the values shown in “*Kenkou kakusa shakai*” [Validating Health in Unequal Society] (Igakushoin, 2007) edited by Katsunori Kondo, but this is because there were some revised numbers discovered after its publication. Therefore, please see the figures in the table below from now on.

Prefectures	Insurer	City, town, or village	Codes in “Kenshou-”	1999			2003-2004			2006-2007			2010-2011			
				Subjects	Recovery	Response rate	Subjects	Recovery	Response rate	Subjects	Recovery	Response rate	Subjects	Recovery	Response rate	
Aichi prefecture	Northern Chita	Tokai Obu Chita Higashiura	A-2				5,000	2,465	49.3				13,308	8,317	62.5	
		Handa city	A-1				5,000	2,773	55.5	17,227	12,491	72.5	3,000	2,058	68.6	
		Tokoname city	A-4				5,000	2,620	52.4	10,400	5,890	56.6	11,232	6,831	60.8	
		Agui town	A-5				3,843	2,135	55.6	4,949	3,125	63.1	5,030	3,675	73.1	
		Taketoyo town	A-3	4,994	3,596	72.0	5,299	2,726	51.4	5,759	2,795	48.5	7,236	4,424	61.1	
		Mihama town	A-6				3,991	1,987	49.8	4,957	2,896	58.4	4,650	2,944	63.3	
		Minamichita town	A-7				5,019	2,563	51.1	5,011	3,096	61.8	5,220	2,926	56.1	
		Takahama city		2,944	3,461	62.5	5,500	3,455	62.8							
		Hekinan city												5,027	3,792	75.4
		Nishio city <sup>6</sup>												9,000	6,355	70.6
		Isshiki town <sup>5</sup>												2,580	1,887	73.1
		Kira town <sup>5</sup>												2,500	1,940	77.6
Hazu town <sup>5</sup>												1,500	1,148	76.5		
Nagoya city												25,000	15,517	62.1		
Nara prefecture		Kashiba city				3,500	2,216	63.3								
		Totsukawa village				1,479	1,015	68.6	1,770	1,043	58.9	1,300	982	75.5		
Kochi prefecture		Susaki city	C-1			5,998	3,255	54.3	6,111	3,060	50.1					
		Nankoku city	C-2			5,000	3,177	63.5	9,214	5,369	58.3					
Kagawa prefecture		Higashi Kagawa city	B-1			8,800	5,244	59.6								
		Ayauta town	B-2			2,432	1,681	69.1								
		Onohara town	B-3			3,017	2,265	75.1								
Mie prefecture		Watarai town										1,896	1,511	79.7		
Nagasaki prefecture		Matsuura city										6,070	3,879	63.9		
Okayama prefecture		Takaha city										9,600	7,465	77.8		
Aomori prefecture		Towada city										5,040	3,429	68.0		

<sup>6</sup> Nishio city, Isshiki town, Kira town, and Hazu town were merged into one city in April 2011 but were three different towns and one city (four insurers) at the time of data collection in 2010, so they have been treated as such in the dataset of jages2010.



Miyagi prefecture		Iwanuma city											8,576	5,058	59.0	
Okinawa prefecture	Okinawa prefecture <sup>7</sup>	Nakijin village											2,500	1,197	47.9	
		Nanjo city											5,714	4,033	70.6	
Yamanashi prefecture		Chuo city											5,463	3,756	68.8	
		Hayakawa town											619	433	70.0	
Chiba prefecture		Kashiwa city											5,993	3,896	65.0	
Hokkaido	Taisetsu region	Higashikawa town											1,664	1,334	80.2	
		Higashikagura town											1,594	1,260	79.0	
		Biei town												2,889	2,176	75.3
		Area unknown <sup>8</sup>												8	-	-
Hyogo prefecture		Kobe city											15,014	9,892	65.9	
Total				10,532	7,057	67.0%	68,878	39,577	57.4%	65,398	39,765	60.8%	169,215	112,123	66.3%	

<sup>7</sup> The Okinawa Prefecture Extended Association for Nursing-care Insurance differs from the Northern Chita Extended Association and the Taisetsu Region Extended Association in that only one city and one village of the 28 member cities, towns, and villages were included in the survey.

<sup>8</sup> There were eight surveys collected by the Taisetsu Region Extended Association that were sent with the sample number (samplenum) cut off, presumably not to identify that the individual. Although these cases have been reflected in the numbers recovered and response rates, they are not included in the dataset for analysis.

**Table II-3 2003 Survey: Numbers collected and response rate by version (Revised by Kayo Suzuki. Added to the guide on March 28, 2012)**

Prefecture	Insurer	Total study population	Dementia version			Family/Abuse			Oral/Nutrition			Total number collected by insurer	Response rate
			Total number sent	Number collected	Response rate	Total number sent	Number collected	Response rate	Total number sent	Number collected	Response rate		
Aichi prefecture	Northern Chita	5,000	1,667	808	48.5	1,667	846	50.7	1,666	811	48.7	2,465	49.3
	Handa city	5,000	1,667	911	54.6	1,667	956	57.3	1,666	906	54.4	2,773	55.5
	Tokoname city	5,000	1,667	838	50.3	1,667	911	54.6	1,766	871	52.3	2,620	52.4
	Agui town	3,843	1,281	694	54.2	1,281	720	56.2	1,281	721	56.3	2,135	55.6
	Taketoyo town	5,299	1,767	922	52.2	1,766	905	51.2	1,766	899	50.9	2,726	51.4
	Mihama town	3,991	1,331	650	48.8	1,330	684	51.4	1,330	653	49.1	1,987	49.8
	Minamichita town	5,019	1,673	844	50.4	1,673	865	51.7	1,673	854	51.0	2,563	51.1
For 2003 Cross-sectional Analysis (Aichi prefecture only)		24,374	11,460	5,667	49.5	11,459	5,887	51.4	11,555	5,715	49.5	12,031	49.4
2003_07 Cohort Data Baseline (Except Northern Chita)		28,152	9,386	4,859	51.8	9,384	5,041	53.7	9,482	4,904	51.7	14,804	52.6
2003_06 Panel Data Baseline (Except Northern Chita and Handa)		23,152	7,719	3,948	51.1	7,717	4,085	52.9	7,816	3,998	51.2	12,031	52.0

The numbers are slightly different from the documents or member pages released for a while in the past due to revisions based on the report forms created immediately after the 2003 survey and Hiroshi Hirai's checking on original questionnaire booklet. The table on the survey population list was researched retrospectively with reference to the list. Hereinafter, the figures on this table will be referred to as the official numbers.

**Table II-4 2010-2011 Survey: Number collected and response rate by city, town, or village (Revised August 22, 2012)**

2010-2011 Survey Distributed number, collected number, and response rate of survey forms [Survey period] August 2010-January 2012 [Areas covered] 25 insurers in 31 municipalities

Administering university or institution	Prefectures	Demographics of the municipality										Survey period <sup>1)</sup>				Survey method	Subjects		Number of subjects distributed	Number collected	response rate		
		No	Insurer name	No	No	WebAtlas	Municipality name	Population <sup>1)</sup>	Older adults population <sup>1)</sup>	Aging rate <sup>1)</sup>	Elementary school district <sup>2)</sup>	Phase 1	Phase 2	Phase 3	Phase 4		Initiation of survey	Completion of survey				Age	Long-term care need
Nihon Fukushi University	Aichi prefecture	1 Northern Chita Extended Association	1	N	Tokai city	104,339	16,385	15.7	11	○					2010/8/10	2010/8/30	Approximately 1/4 randomly selected, four versions	65+	Individuals without need for long-term care	4,292	2,581	60.1	
			2	O	Obu city	80,262	11,788	14.7	9	○					2010/8/10	2010/8/30		65+	Individuals without need for long-term care	3,178	2,066	65.0	
			3	P	Chita city	83,373	13,465	16.2	10	○					2010/8/10	2010/8/30		65+	Individuals without need for long-term care	3,778	2,377	62.9	
			4	R	Higashiura town	48,046	7,899	16.4	6	○					2010/8/10	2010/8/30	65+	Individuals without need for long-term care	2,060	1,293	62.8		
			2	Handa	5	J	Handa city	115,845	19,650	17.0	13	○				2011/1/24	2011/2/14	Approximately 1/6 randomly selected, four versions	65+	Individuals without need for long-term care	3,000	2,058	68.6
			3	Tokoname	6	M	Tokoname city	51,265	11,451	22.3	9	○				2010/8/10	2010/8/30	Total study population surveyed, four versions	65+	Individuals without need for long-term care	11,232	6,831	60.8
			4	Agui	7	Q	Agui town	24,577	4,870	19.8	4	○				2010/8/10	2010/8/30	Total study population surveyed, four versions	65+	Individuals without need for long-term care	5,030	3,675	73.1
			5	Takeotoyo	8	U	Takeotoyo town	40,981	6,399	15.6	4	○				2010/8/10	2010/8/30	Total study population surveyed, four versions	65+	Individuals without need for long-term care	7,236	4,424	61.1
			6	Mihama	9	T	Mihama town	26,294	4,901	18.6	6	○				2010/8/10	2010/8/30	Total study population surveyed, four versions	65+	Individuals without need for long-term care	4,650	2,944	63.3
			7	Minamichita	10	S	Minamichita town	21,909	5,844	26.7	6	○				2010/8/10	2010/8/30	Total study population surveyed, four versions	65+	Individuals without need for long-term care	5,220	2,926	56.1
			8	Hekinan	11	K	Hekinan city	71,408	12,629	17.7	7	○				2011/1/17	2011/2/7	Approximately 1/2 randomly selected, four versions	65+	Individuals without need for long-term care	5,027	3,792	75.4
			9	Nishio	12	L	Nishio city	104,321	17,848	17.1	14	○				2011/1/17	2011/2/7	Approximately 1/2 randomly selected, four versions	65+	Individuals without need for long-term care	9,000	6,355	70.6
			10	(Merged on 4-1-2011)	13	V	Ishiki town	24,068	5,325	22.1	5	○				2011/1/17	2011/2/7		65+	Individuals without need for long-term care	2,580	1,887	73.1
			11		14	W	Kira town	22,041	4,579	20.8	5	○				2011/1/17	2011/2/7		65+	Individuals without need for long-term care	2,500	1,940	77.6
				12	15	X	Hazu town	12,802	2,881	22.5	2	○				2011/1/17	2011/2/7	65+	Individuals without need for long-term care	1,500	1,148	76.5	
			13	Nagoya	13	I	Nagoya city	2,215,062	408,558	18.4	262					2011/12/5	2011/12/28	Approximately 5% randomly selected, five versions	65+	Individuals without need for long-term care	25,000	15,517	62.1
			14	Totsukawa	14	AA	Totsukawa village	4,390	1,664	37.9	9	○				2011/1/17	2011/2/7	Total study population surveyed, four versions	65+	Individuals without need for long-term care	1,300	982	75.5
			15	Watarai	15	Y	Watarai town	9,057	2,230	24.6	4	○				2011/1/17	2011/2/7	Total study population surveyed, four versions	65+	Individuals without need for long-term care	1,896	1,511	79.7
	16	Nagasaki	16	CC	Matsuura city	26,993	7,574	28.1	7	○				2011/1/17	2011/2/7	Approximately 1/2 randomly selected, 4 versions	65+	Individuals without need for long-term care	6,070	3,879	63.9		
	17	Okayama	17	BB	Takaha city	38,799	12,862	33.2	19					2011/4/15	2011/5/9	Total study population surveyed, four versions	65+	Individuals without need for long-term care	9,600	7,465	77.8		
	18	Aomori	18	D	Towada city	68,359	14,586	21.3	16					2011/4/15	2011/5/9	Slightly under half randomly selected, four versions	65+	Individuals without need for long-term care	5,040	3,429	68.0		
Tohoku University	Miyagi	19	Iwanuma	19	EE	Iwanuma city	43,921	7,703	17.5	4	○			2010/8/1	2010/8/20	Total study population surveyed, four versions	65+	Includes individuals who need long-term care	8,576	5,058	59.0		
Ryukyu University	Okinawa	20	20	23	EE	Nakijin village	9,476	2,434	25.7	4	○			2010/10/1	2011/12/28	One version (Nanjo city survey form used for Wakigawa)	65+	Includes individuals who need long-term care	2,500	1,197	47.9		
			21	24	DD	Nanjo city	39,651	7,626	19.2	9				2011/10/1	2011/10/21	Forms left, or by visiting and interviewing. One version.	65+	Individuals without need for long-term care	5,714	4,033	70.6		
University of Yamanashi	Yamanashi	21	22	25	G	Chuo city	31,650	4,743	15.0	6	○			2011/1/27	2011/2/8	Total study population surveyed, one version	65+	Includes individuals who need long-term care	5,463	3,756	68.8		
		22	23	26	H	Hayakawa town	1,534	743	48.4	2	○			2011/1/20	2011/2/7	Total study population surveyed, Original survey form. One version	65+	Includes individuals who need long-term care	619	433	70.0		
Chiba University	Chiba	23	24	27	F	Kashiwa city	380,963	62,383	16.4	41				2011/12/15	2012/1/13	5000 individuals randomly selected + 993 in Kashinoha	65+	Individuals without need for long-term care	5,993	3,896	65.0		
National Institute of Population and Social Security Research	Hokkaido	24	25	28	B	Higashikawa town	7,701	1,960	25.5	4				2011/3/7	2011/3/28	Total study population surveyed, four versions	65+	Individuals without need for long-term care	1,664	1,334	80.2		
			26	29	A	Higashikagura town	9,194	1,799	19.6	4				2011/3/7	2011/3/28		65+	Individuals without need for long-term care	1,594	1,260	79.0		
			27	30	C	Biei town	11,628	3,553	30.6	6				2011/3/7	2011/3/28		65+	Individuals without need for long-term care	2,889	2,176	75.3		
						Area unknown	-	-	-	-				2011/3/7	2011/3/28	65+	Individuals without need for long-term care		8	-			
Nihon Fukushi University + WKC	Hyogo	25	28	31	Z	Kobe city	1,525,393	305,301	20.0	78				2011/12/15	2012/1/13	Approximately 4% randomly selected, five versions	65+	Individuals without need for long-term care	15,014	9,892	65.9		
						Mean	169,526	31,988	18.9	19													
						Median	38,799	7,574	19.8	6													
						Total	<b>169,526</b>	<b>31,988</b>	<b>18.9</b>	<b>19</b>											<b>169,215</b>	<b>112,123</b>	<b>66.3</b>

1) In municipalities surveyed in 2010 or 2011, we followed the Statistical Observations of Municipalities in 2010 or 2011, respectively. (<http://www.stat.go.jp/data/ssds/5b.htm>, 20110908).

2) Data on middle school districts are displayed for Matsuura city. Of these, one of the six school districts is divided in two (there are 12 elementary school districts). The middle school districts are displayed for Kobe city (there are 167 elementary school districts, but the data was not available). Judgments for the Phase 4 survey municipalities were made with reference to the municipality's website.

3) 2010 surveys are indicated by ○, 2011 are indicated by ●. The response rate for the October 2010 survey in Wakigawa district of Nakijin village was low. Therefore, a survey was taken again in December 2011 using the Nanjo city questionnaire booklets, to collect 83 additional surveys.

4) The municipalities of Iwanuma city, Chuo city, Hayakawa town, and Nakijin village requested to have all older people included in the survey. Therefore, older adults of all levels of support or long-term care needs are included in the surveyed population. Subjects requiring support or long-term care can be distinguished by sample number, etc., for data on Iwanuma, Chuo, and Hayakawa.

**Table II-5 2013 Survey: Numbers collected and response rate by city, town, or village (As of November 10, 2014)**

Insurer name	Municipality name	Population <sup>1)</sup>	Older adults population <sup>1)</sup>	Aging rate <sup>1)</sup>	Number of areas analyzed	Areas analyzed	Data at the time of 1)	Source of data on older and general populations	Distribution to individuals requiring long-term care	Number distributed	Number collected	response rate	Survey method	Survey period
1 Taisetsu Extended Association	1 Higashikawa town	7,859	2,197	28.0	4	Elementary school district	Statistical Observations of Municipalities-2013	Statistical Observations of Municipalities-2013	×	1,770	1,217	68.8%	Total number	Phase 1 (10/1-21)
	2 Higashikagura town	9,292	2,091	22.5	4	Elementary school district		Statistical Observations of Municipalities-2013	×	1,678	1,179	70.3%	Total number	
	3 Biei town	10,752	3,685	34.3	6	Elementary school district	End of May 2013	Local government HP	×	2,791	1,816	65.1%	Total number	
2 Tokoname city	4 Tokoname city	56,910	13,829	24.3	9	Elementary school district	End of May 2013	Townhall HP	×	11,603	8,398	72.4%	Total number	
3 Taketoyo town	5 Taketoyo town	42,675	9,246	21.7	4	Elementary school district	As of present June 1, 2013	Local government HP	×	7,901	6,157	77.9%	Total number	
4 Mihama town	6 Mihama town	23,215	5,829	25.1	6	Elementary school district	End of May 2013	Local government HP	×	4,826	3,666	76.0%	Total number	
5 Minamichita town	7 Minamichita town	20,549	6,081	29.6	6	Elementary school district	Statistical Observations of Municipalities-2013	Statistical Observations of Municipalities-2013	×	5,043	3,443	68.3%	Total number	
6 Totsukawa village	8 Totsukawa village	4,107	1,575	38.3	9	Elementary school district	Statistical Observations of Municipalities-2013	Statistical Observations of Municipalities-2013	×	1,075	790	73.5%	Total number	
7 Matsuura city	9 Matsuura city	24,896	7,600	30.5	7	Former town	As of present April 2, 2013	Comprehensive Mr./Ms. Tsuji 20130703	×	5,962	3,459	58.0%	Total number	
8 Chuo city	10 Chuo city	31,322	5,638	18.0	6	Elementary school district	Statistical Observations of Municipalities-2013	Statistical Observations of Municipalities-2013	×	5,147	3,789	73.8%	Total number	
9 Hayakawa town	11 Hayakawa town	1,246	593	47.6	2	Elementary school district	Statistical Observations of Municipalities-2013	Statistical Observations of Municipalities-2013	×	495	330	66.7%	Total number	
10 Watarai town	12 Watarai town	8,692	2,425	27.9	4	Former small area	As of present July 1, 2013	Comprehensive Mr./Ms. Okada 20130703	×	1,957	1,515	77.4%	Total number	
11 Handa city	13 Handa city	116,883	28,460	24.3	13	Elementary school district	End of April 2013	Townhall HP	×	9,825	7,028	71.5%	2003 Follow-up + New addition of 65-74 year olds	Phase 2 (10/22-11/11)
12 Northern Chita Extended Association	14 Tokai city	111,875	21,901	19.6	12	Elementary school district	End of May 2013	Townhall HP	×	4,420	3,095	70.0%		
	15 Obu city	87,836	16,512	18.8	9	Elementary school district	End of March 2013	Townhall HP	×	3,362	2,485	73.9%	Subjects of 2010 + New addition of 65-67-year-olds (Approximately 1/4)	
	16 Chita city	84,768	17,454	20.6	10	Elementary school district	Statistical Observations of Municipalities-2013	Statistical Observations of Municipalities-2013	×	4,019	3,070	76.4%		
	17 Higashiura town	50,194	10,859	21.6	6	Elementary school district	End of May 2013	Local government HP	×	2,122	1,533	72.2%		
13 Hekinan city	18 Hekinan city	72,018	14,457	20.1	7	Elementary school district	Statistical Observations of Municipalities-2013	Statistical Observations of Municipalities-2013	×	5,099	3,717	72.9%	Subjects of 2010 + 65-67-year-olds	
14 Nishio city	19 Nishio city	169,786	37,393	22.0	14	Elementary school district	End of May 2013	Townhall HP	×	16,130	11,990	74.3%	Subjects of 2010 + 65-67-year-olds	
15 Towada city	20 Towada city	64,743	17,059	26.3	16	Elementary school district	As of present July 1, 2013	Mr. Kazuo Sasaki	×	6,528	4,401	67.4%	Subjects of 2010 + 65-67-year-olds	
16 Toyohashi city	21 Toyohashi city	379,678	81,751	21.5	52	Elementary school district	As of present April 1, 2013	Townhall HP	×	5,181	3,957	76.4%	100 surveys *50 school districts	
17 Tahara city	22 Tahara city	65,386	15,084	23.1	20	Elementary school district	End of March 2013	Townhall HP	×	1,989	1,379	69.3%	100 surveys *20 school districts	
18 Marugame city	23 Marugame city	113,618	27,034	23.8	18	Elementary school district	Provided by Area Comprehensive Support Center 2013	Provided by Area Comprehensive Support Center	×	5,985	4,307	72.0%	Approximately 1/4 randomly selected	
19 Mifune town	24 Mifune town	17,888	4,953	27.7	6	Elementary school district	Statistical Observations of Municipalities-2013	Statistical Observations of Municipalities-2013	×	2,000	1,432	71.6%	Approximately 1/2 randomly selected	
20 Kashiwa city	25 Kashiwa city	402,337	87,960	21.9	20 & 7	Comprehensive & Daily life area	End of March 2013	Division of the Support for Older Adults	×	6,000	4,356	72.6%	Subjects of 2011 + 65-66-year-olds (New Addition 4)	Phase 3 (11/12-12/2)
		Kashiwanoha Campus area							×	1,263	829	65.6%	Total number 5)	
21 Nagoya city	26 Nagoya city	2,269,049	505,400	22.3	29	Comprehensive	As of present May 1, 2013	Townhall HP	×	26,401	18,231	69.1%	Valid responders of 2011 survey + new sample of non-respondents of 2011 survey + 65-66-year-olds	
22 Kobe city	27 Kobe city	1,553,454	377,152	24.3	78	Comprehensive	End of May 2013	Townhall HP	×	15,705	11,819	75.3%		
23 Yokohama city	28 Yokohama city	3,697,035	787,128	21.3	136	Care plaza	As of present January 1, 2013	Townhall HP	×	12,010	7,722	64.3%	Random selection	
24 Iwanuma city	29 Iwanuma city	44,187	8,723	19.7	4	Elementary school district	Statistical Observations of Municipalities-2013		○	7,407	5,643	76.2%	Entire study population surveyed (by visiting and collecting)	Phase 2
25 Niigata city	30 Niigata city	806,880	199,617	24.7	58	Middle school district	End of May 2013	Townhall HP	×	8,000	4,983	62.3%	Random sampling	Phase 3 (11/12-12/2)
Total number distributed, number collected, and response rate										193,694	137,736	71.1%		
<p>1) Based on the website of each city, district, town, or village, or on the Statistical Observations of Municipalities in 2013.</p> <p>2) Matsuura city are before amalgamation. Kobe and Yokohama cities are daily living spheres. Kashiwa and Nagoya cities are comprehensive areas.</p> <p>3) The Towada city sample with new additions was oversampled in elementary school districts with low populations or surveys that were sent to the whole study population to ensure a sufficient sample size for community diagnosis.</p> <p>4) For the Kashiwa city sample with new additions, extra surveys were distributed in districts with relatively low distribution numbers on subjects of the 2011 follow-up + people aged 65-66 years to make the 6,000 sample distribution for the Commitment Form possible.</p> <p>5) The whole study population was surveyed in the Kashiwanoha Campus Area (a part of the Tanaka Elementary School district).</p> <p>The number of surveys distributed by version are based on materials from new information (sheets 2-4). However, the number of surveys distributed in Iwanuma city was calculated based on the participant log survey form number. Furthermore, the reason the number of surveys collected in the final version of the JAGES 2013 Distributed and Collected Number is that it is 6,442 in the final version because it included individuals who were certified with a long-term care need.</p> <p>7) The number collected by version is based on SPSS JAGES2013ver0 (low data before cleaning).</p> <p>8) 59 surveys from the Taisetsu Extended Association for which the town could not be identified when the ID was disassociated at the time of collection were not included in the above.</p> <p>9) Data on Niigata city additionally received from Professor Shobugawa (20140526).</p> <p>10) Number collected for Mikage kita, Kobe city added (20140910).</p> <p>11) Kashiwanoha data was removed from the number distributed and number collected for the insurers'.</p> <p>Indicated on the report:  Total number distributed 193,694-1,263=192,431  Number collected 138,565-829=137,736  Response rate: 71.1%</p>														

Table II-5a 2013 Survey: Number collected and response rate by city, town, or village and by version (as of November 10, 2014)

Number of surveys distributed and collected and the response rate by JAGES 2013 Version			Total number distributed	Total number collected	Total response rate	A: number distributed	A: number collected	A: response rate	B: number distributed	B: number collected	B: response rate	C: number distributed	C: number collected	C: response rate	D: number distributed	D: response rate	D: response rate	E: number distributed	E: number collected	E: response rate
1) Mailing date																				
2) Survey period																				
1) 9/30	Taisetsu Region Extended Association	Higashikawa town	1770	1217	68.8%	354	236	66.7%	356	251	70.5%	353	248	70.3%	352	242	68.8%	355	240	67.6%
2) 10/1-10/21		Higashikagura town	1678	1179	70.3%	336	243	72.3%	336	236	70.2%	336	232	69.0%	334	231	69.2%	336	237	70.5%
		Biei town	2791	1816	65.1%	559	371	66.4%	559	351	62.8%	557	360	64.6%	558	359	64.3%	558	375	67.2%
		Tokoname city	11603	8398	72.4%	2321	1665	71.7%	2321	1701	73.3%	2321	1682	72.5%	2320	1672	72.1%	2320	1678	72.3%
		Taketoyo town	7901	6157	77.9%	1583	1218	76.9%	1580	1219	77.2%	1580	1225	77.5%	1580	1254	79.4%	1578	1241	78.6%
		Mihama town	4826	3666	76.0%	969	743	76.7%	966	730	75.6%	967	739	76.4%	964	725	75.2%	960	729	75.9%
		Minamichita town	5043	3443	68.3%	1012	692	68.4%	1009	703	69.7%	1011	672	66.5%	1007	692	68.7%	1004	684	68.1%
		Matsuura city	5962	3459	58.0%	1193	698	58.5%	1193	708	59.3%	1192	693	58.1%	1192	685	57.5%	1192	675	56.6%
		Chuo city	5147	3789	73.6%	1029	761	74.0%	1030	765	74.3%	1030	762	74.0%	1029	738	71.7%	1029	763	74.1%
		Totsukawa village	1075	790	73.5%	215	155	72.1%	215	157	73.0%	215	154	71.6%	215	155	72.1%	215	169	78.6%
	Hayakawa town	495	330	66.7%	99	65	65.7%	99	63	63.6%	99	69	69.7%	99	71	71.7%	99	62	62.6%	
1) 9/30	Northern Chita Extended Association	Tokai city	4420	3095	70.0%	884	605	68.4%	884	615	69.6%	884	620	70.1%	884	624	70.6%	884	631	71.4%
2) 10/1-10/21		Obu city	3362	2485	73.9%	672	491	73.1%	672	483	71.9%	673	513	76.2%	673	496	73.7%	672	502	74.7%
		Chita city	4019	3070	76.4%	804	611	76.0%	804	609	75.7%	804	635	79.0%	803	610	76.0%	804	605	75.2%
		Higashiura town	2122	1533	72.2%	425	293	68.9%	425	309	72.7%	424	309	72.9%	424	310	73.1%	424	312	73.6%
		Hekinan city	5099	3717	72.9%	1020	745	73.0%	1019	762	74.8%	1020	738	72.4%	1020	753	73.8%	1020	719	70.5%
		Nishio city	16130	11990	74.3%	3224	2369	73.5%	3227	2408	74.6%	3232	2383	73.7%	3222	2418	75.0%	3225	2412	74.8%
		Mifune town	2000	1432	71.6%	400	277	69.3%	400	286	71.5%	400	287	71.8%	400	274	68.5%	400	308	77.0%
		Towada city	6528	4401	67.4%	1306	894	68.5%	1303	863	66.2%	1306	903	69.1%	1306	853	65.3%	1307	888	67.9%
		Watarai town	1957	1515	77.4%	392	306	78.1%	392	304	77.6%	391	298	76.2%	391	302	77.2%	391	305	78.0%
		Toyohashi city	5181	3957	76.4%	1036	791	76.4%	1035	786	75.9%	1038	774	74.6%	1033	813	78.7%	1039	793	76.3%
		Tahara city	1989	1379	69.3%	398	274	68.8%	397	271	68.3%	398	260	65.3%	398	298	74.9%	398	276	69.3%
		Handa city	9825	7028	71.5%	1965	1389	70.7%	1965	1399	71.2%	1965	1420	72.3%	1965	1396	71.0%	1965	1424	72.5%
		Marugame city	5985	4307	72.0%	1198	883	73.7%	1192	828	69.5%	1198	845	70.5%	1200	894	74.5%	1197	857	71.6%
1) 11/11 (11/12 Kobe)			Kashiwa city (exc)	6000	4356	72.6%	1453	1036	71.3%	1453	1046	72.0%	1453	1018	70.1%	1452	1053	72.5%	1452	1032
2) 11/12-12/2		Kashiwanoha	1263	829	65.6%															
		Nagoya city	26401	18231	69.1%	5281	3608	68.3%	5282	3658	69.3%	5279	3688	69.9%	5282	3656	69.2%	5277	3621	68.6%
		Kobe city	15705	11819	75.3%	3144	2350	74.7%	3142	2344	74.6%	3142	2367	75.3%	3138	2405	76.6%	3139	2353	75.0%
		Yokohama city	12010	7722	64.3%	2402	1552	64.6%	2402	1544	64.3%	2402	1529	63.7%	2402	1553	64.7%	2402	1544	64.3%
		Iwanuma city	7407	5643	76.2%	1482	1144	77.2%	1473	1108	75.2%	1467	1136	77.4%	1481	1124	75.9%	1504	1131	75.2%
		Niigata city	8000	4983	62.3%	1600	949	59.3%	1600	1018	63.6%	1600	993	62.1%	1600	1028	64.3%	1600	995	62.2%
<b>Total number distributed, number collected, response rate</b>			193694	137736	71.1%	38756	27414	70.7%	38731	27525	71.1%	38737	27552	71.1%	38724	27684	71.5%	38746	27561	71.1%

The number of issues distributed by version are based on materials from new information (sheets 2-4). However, the number of issues distributed in Iwanuma city was calculated based on the participant log survey form number. Furthermore, the reason why the number of surveys collected in the final version of the JAGES 2013 Distributed and Collected Number is 6,442 in the final version because it included individuals who were certified with a need for long-term care.

The number collected by version based on SPSS JAGES2013 ver0 (low data before cleaning)

The 59 surveys for which the town could not be identified when the ID was disassociated at the time of collection are not included in the above.

Niigata city is not yet included (as of 05/09/2014).

Data on Niigata city additionally received from Professor Shobugawa (05/26/2014).

Number collected for Mikage kita, Kobe city added (09/10/2014).

The number collected in Kashiwa and Kashiwanoha by version is unknown. Only the total number distributed and number collected could be distinguished. In this table, the numbers by version include numbers for Kashiwa and Kashiwanoha.

Kashiwanoha data was removed from number distributed and number collected for the report for insurers.

Indicated on the report:

Total number distributed 193694-1263=192431

Number collected 138565-829=137736

Response rate: 71.1%

**Table II-6 2016 Survey: Number collected and response rate by city, town, or village (As of May 12, 2017)**

Insurer name	Municipality name	Population <sup>1)</sup>	Older adults population <sup>1)</sup>	Aging rate <sup>1)</sup>	Data at the time of <sup>1)</sup>	Inhabitable land <sup>2)</sup> Population density (/sq km)	Urban <sup>3)</sup>	Number of areas analyzed	Area analyzed	Number distributed to individuals requiring support and long-term care	Number distributed <sup>4)</sup>	Number distributed to individuals requiring support and long-term care <sup>4)</sup>	Number collected <sup>5)</sup>	response rate	Survey method	Survey period
Taisetsu Region 1 Extended Association	1 Higashikawa town	8,031	2567	31.96%	On 4/1/2016	107.83		4	Small area	x	1,999					
	2 Higashikagura town	10,379	2490	23.99%	On 4/1/2016	192.42		4	Small area	x	1,870	0	4,432	66.5%	Total number	
	3 Biei town	10,423	3780	36.27%	On 4/1/2016	33.17		5	Small area	x	2,795					
2 Otofuke town	4	45,197	11826	26.17%	On 4/1/2016	133.72		5	Middle school district		4,983	278	3,540	71.0%	Sampling	Phase 1 (10/3-)
3 Yoichi town	5	19,655	7216	36.71%	On 4/1/2016	497.09		4	Small area	x	5,288	0	3,043	57.5%	Total number	
4 Tomamae town	6	3,261	1335	40.94%	On 4/1/2016	36.23		2	Small area		1,070	94	680	63.6%	Total number	
5 Towada city	7	63,444	18702	29.48%	On 1/1/2016	309.39		16	Small area		5,000	294	3,654	73.1%	Sampling	
6 Mashiko town	8	23,952	6346	26.49%	On 4/1/2016	477.51		4	Small area		2,773	115	2,068	74.6%	Sampling	
7 Nagara town	9	7,348	2553	34.74%	On 4/1/2016	284.15		3	Small area		2,167	45	1,453	67.1%	Total number	
8 Chuo city	10	30,888	6914	22.38%	On 4/1/2016	1180.28		6	Small area	x	6,012	0	3,963	65.9%	Total number	
9 Havakawa town	11	1,115	562	50.40%	On 4/1/2016	70.88		2	Small area	x	435	0	308	70.8%	Total number	
10 Mori town	12	18,988	5867	30.90%	On 4/1/2016	486.87		5, 6	Small area, Neighborhood association		2,000	62	1,516	75.8%	Sampling	
11 Oyama town	13	18,987	5286	27.84%	On 4/1/2016	429.05		5	Small area		2,000	51	1,358	67.9%	Sampling	
12 Minamichita town	14	18,838	6483	34.41%	On 4/1/2016	682.78		6	Small area	x	5,198	0	3,147	60.5%	Total number	
13 Mihama town	15	22,757	6402	28.13%	On 1/1/2016	655.25		6	Small area	x	5,382	0	3,757	69.8%	Total number	
14 Taketoyo town	16	43,042	10203	23.70%	On 1/1/2016	1855.26		4	Small area	x	8,714	0	6,430	73.8%	Total number	
15 Watarai town	17	8,546	2642	30.92%	On 4/1/2016	411.66		4	Small area	x	2,141	0	1,530	71.5%	Total number	
16 Matsuura city	18	23,911	7907	33.07%	On 4/1/2016	350.29		7	Small area	x	6,311	0	3,785	60.0%	Total number	
17 Matsumoto city	19	241,796	64505	26.68%	On 1/1/2016	991.94		35	District		7,000	393	4,888	69.8%	Sampling	Phase 2 (10/24-)
18 Handa city	20	118,722	27673	23.31%	On 4/1/2016	2577.55		13	Small area	x	11,421	0	9,199	80.5%	Sampling	
19 Hekinan city	21	71,789	16295	22.70%	On 4/1/2016	2001.92		7	Small area	x	5,000	0	3,821	76.4%	Sampling	
20 Nishio city	22	170,869	41048	24.02%	On 4/1/2016	1256.39		26	Small area	x	16,000	0	11,029	68.9%	Sampling	
21 Tokoname city	23	58,355	14690	25.17%	On 4/1/2016	1139.75		9	Small area	x	12,004	0	8,211	68.4%		
Northern Chita 22 Extended Association	24 Tokai city	113,727	24065	21.16%	On 4/1/2016	2647.89		12	Small area		5,491	204	3,922	71.4%		
	25 Obu city	90,160	18696	20.74%	On 4/1/2016	2768.19		9	Small area		4,074	135	2,974	73.0%	Sampling	
	26 Chita city	86,025	21834	25.38%	On 4/1/2016	1983.06		10	Small area		4,824	189	3,584	74.3%		
	27 Higashiura town	50,238	12070	24.03%	On 4/1/2016	1702.98		7	Small area		2,538	85	1,844	72.7%		
23 Kashiwa city	28	410,033	100478	24.50%	On 4/1/2016	4059.73	Urban	7, 20	Large region, community district		6,000	166	4,557	76.0%	Sampling	
24 Matsudo city	29	490,773	120125	24.48%	On 4/1/2016	8266.35	Urban	14	Spheres of daily life	x	8,032	0	4,474	55.7%	Sampling	
25 Funabashi city	30	627,816	144690	23.05%	On 4/1/2016	7768.08	Urban	54	Small area		9,177	500	5,806	63.3%	Sampling	
26 Hachioji city	31	562,019	141820	25.23%	On 3/31/2016	5276.68	Urban	21	Comprehensive		8,400	468	5,772	68.7%	Sampling	
27 Yokohama city	32	3,725,042	871200	23.39%	On 4/1/2016	9326.36	Urban	138	Comprehensive		20,700	967	15,052	72.7%	Sampling	
28 Niigata city	33	795,224	218065	27.42%	On 5/1/2016	1186.05		56	Middle school district	x	9,972	0	7,138	71.6%	Sampling	
29 Nagoya city	34	2,294,952	548592	23.90%	On 3/31/2016	7284.41	Urban	16, 266	Administrative district, small area	x	24,959	0	18,854	75.5%	Sampling	
30 Fukuoka city	35	1,502,647	307904	20.49%	On 4/1/2016	6484.47	Urban	143	Small area		23,986	1,436	15,909	66.3%	Sampling	
31 Iwanuma city	36	44,242	10452	23.62%	On 1/31/2016	946.76		4	Small area		9,954	1,604	7,421	74.6%	Total number	
32 Mifune town	37	17,705	5649	31.91%	On 4/1/2016	409.55		10	Small area		4,821	206	3,104	64.4%	Total number	
33 Kobe city	38	1,544,671	410750	26.59%	On 4/1/2016	4658.52	Urban	76	Comprehensive	x	15,978	0	12,107	75.8%	Sampling	Phase 3 (11/21-)
34 Takahama town	39	10,692	3236	30.27%	On 4/1/2016	561.55		4	Small area		3,192	583	2,108	66.0%	Total number	Phase 4 (1/10-)
Total number distributed, number collected, and response rate											279,661	7,875	196,438	70.2%		

1) Data received from each municipality. However, accurate data could not be received from Towada city, Mihama town, Taketoyo town, and Matsumoto city, therefore, it was created based on the "Ministry of Internal Affairs and Communications Basic Resident Register (Including Aliens)"  
2) Based on the website of each municipality, or the Statistical Observations of Municipalities in 2016.  
3) Urban=inhabitable area population density 4000/sq. km or higher.  
4) Based on the 5/4/2017 New Information Report.  
5) The collected number was created as the final number, which included blank surveys and surveys for which the city, town or village was unknown (surveys from Taisetsu returned with the ID portion cut off).

**Table II-6a 2016 Survey: Number collected and response rate by city, town, or village (As of May 12, 2017)**

Insurer name	Municipality name	Number distributed <sup>1)</sup>	Number distributed to individuals requiring support and long-term care <sup>1)</sup>	Number collected <sup>2)</sup>	Response rate	Ver0 (3/30) <sup>3)</sup>	Ver0 Created-- Additional number of interim reports	Interim Report Form (3/31) Collected number <sup>4)</sup>	Interim Report Form (3/31) Aggregate number <sup>5)</sup>	Interim Report Form Created-- Additional number for final delivery	Blank survey	Final delivery(4/6) <sup>6)</sup>
1 Taisetsu Region Extended Association	1 Higashikawa town	1,999	0	4432 (including 74 surveys from unknown towns)	66.5%	1,356	0	1,356	1,284	0	5	1,356
	2 Higashikagura town	1,870						1,227	1,181			1,227
	3 Biei town	2,795						1,770	1,691			1,770
2 Otofuke town	4 Otofuke town	4,983	278	3,540	71.0%	3,347	0	3,539	3,404	0	1	3,539
3 Yoichi town	5 Yoichi town	5,288	0	3,043	57.5%	3,037	0	3,037	2,947	2	4	3,039
4 Tomamae town	6 Tomamae town	1,070	94	680	63.6%	609	0	678	660	0	2	678
5 Towada city	7 Towada city	5,000	294	3,654	73.1%	3,490	0	3,649	3,485	0	5	3,649
6 Mashiko town	8 Mashiko town	2,773	115	2,068	74.6%	1,987	0	2,067	1,967	0	1	2,067
7 Nagara town	9 Nagara town	2,167	45	1,453	67.1%	1,425	0	1,453	1,337	0	0	1,453
8 Chuo city	10 Chuo city	6,012	0	3,963	65.9%	3,957	0	3,957	3,770	0	6	3,957
9 Hayakawa town	11 Hayakawa town	435	0	308	70.8%	308	0	308	280	0	0	308
10 Mori town	12 Mori town	2,000	62	1,516	75.8%	1,463	0	1,510	1,413	1	5	1,511
11 Oyama town	13 Oyama town	2,000	51	1,358	67.9%	1,329	0	1,358	1,289	0	0	1,358
12 Minamichita town	14 Minamichita town	5,198	0	3,147	60.5%	3,142	0	3,142	2,970	2	3	3,144
13 Mihama town	15 Mihama town	5,382	0	3,757	69.8%	3,755	0	3,755	3,602	0	2	3,755
14 Taketoyo town	16 Taketoyo town	8,714	0	6,430	73.8%	6,412	0	6,412	6,161	7	11	6,419
15 Watarai town	17 Watarai town	2,141	0	1,530	71.5%	1,528	0	1,528	1,464	0	2	1,528
16 Matsuura city	18 Matsuura city	6,311	0	3,785	60.0%	3,777	0	3,777	3,542	3	5	3,780
17 Matsumoto city	19 Matsumoto city	7,000	393	4,888	69.8%	4,821	0	4,881	4,706	6	1	4,887
18 Handa city	20 Handa city	11,421	0	9,199	80.5%	9,182	0	9,182	8,778	5	12	9,187
19 Hekinan city	21 Hekinan city	5,000	0	3,821	76.4%	3,815	0	3,815	3,643	0	6	3,815
20 Nishio city	22 Nishio city	16,000	0	11,029	68.9%	11,021	0	11,021	10,557	3	5	11,024
21 Tokoname city	23 Tokoname city	12,004	0	8,211	68.4%	8,200	2	8,202	7,879	2	7	8,204
22 Northern Chita Extended Association	24 Tokai city	5,491	204	3,922	71.4%	3,777	1	3,911	3,772	9	2	3,920
	25 Obu city	4,074	135	2,974	73.0%	2,863	0	2,966	2,852	6	2	2,972
	26 Chita city	4,824	189	3,584	74.3%	3,452	0	3,583	3,466	0	1	3,583
	27 Higashiura town	2,538	85	1,844	72.7%	1,785	0	1,841	1,779	0	3	1,841
23 Kashiwa city	28 Kashiwa city	6,000	166	4,557	76.0%	4,439	0	4,550	4,402	2	5	4,552
24 Matsudo city	29 Matsudo city	8,032	0	4,474	55.7%	4,469	0	4,469	4,330	2	3	4,471
25 Funabashi city	30 Funabashi city	9,177	500	5,806	63.3%	5,502	0	5,801	5,589	2	3	5,803
26 Hachioji city	31 Hachioji city	8,400	468	5,772	68.7%	5,448	0	5,758	5,569	9	5	5,767
27 Yokohama city	32 Yokohama city	20,700	967	15,052	72.7%	14,372	0	15,036	14,573	6	10	15,042
28 Niigata city	33 Niigata city	9,972	0	7,138	71.6%	7,134	0	7,134	6,845	2	2	7,136
29 Nagoya city	34 Nagoya city	24,959	0	18,854	75.5%	18,840	0	18,840	18,180	7	7	18,847
30 Fukuoka city	35 Fukuoka city	23,986	1,436	15,909	66.3%	14,986	0	15,882	15,322	11	16	15,893
31 Iwanuma city	36 Iwanuma city	9,954	1,604	7,421	74.6%	6,432	0	7,387	7,048	8	26	7,395
32 Mifune town	37 Mifune town	4,821	206	3,104	64.4%	2,994	0	3,097	2,920	1	6	3,098
33 Kobe city	38 Kobe city	15,978	0	12,107	75.8%	12,088	0	12,088	11,677	12	7	12,100
34 Takahama town	39 Takahama town	3,192	583	2,108	66.0%	-	-	-	-	-	2	2,016
Total number distributed, number recovered, and response rate		279,661	7,875	196,438		189,413		193,967			183	196,091

1) The number distributed was determined based on the 4/5/2017 New Information Report.

2) The collected number was created as the final, which included blank surveys and surveys for which the city, town, or village was unknown (surveys sent with the ID portion cut off).

3) "2016 Cross-sectional data\_v0" created for analysis for the Insurer Joint Study Group held in June and July. Subjects who required support or long-term care were excluded.

4) Created as the collected number as of the creation of the interim report (New Information Center) for insurers delivered on 3/31.

5) Created as the collected number as of the creation of the interim report (New Information Center) for insurers delivered on 3/31.

The aggregate number is the number of surveys with missing data for age and respondents under the age of 65 years subtracted from the collected number.

6) Created based on the final delivered data received from the New Information Center

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**Table II-6b 2016 Survey: Number collected according to questionnaire version (As of Aug, 2018)**

Version	Number distributed	Number collected (eligible)
A	34567	24147
B	34570	24209
C	34571	24313
D	34566	24260
E	34549	24184
F	34555	24407
G	34548	24249
H	34544	24306
Total	276470	194075

\*Please contact the Data Administration Office about detailed numbers by municipalities.

**Important information (added March 9, 2012)**

Symbols and numbers are assigned to each insurer to ensure the anonymity of the participating surveyed areas in the “*Kenkou kakusa shakai*” [*Validating Health in Unequal Society*] (Igakushoin, 2007) summarizing the 2003 cross-sectional data. See the fourth column of Table II-2 for a list of numbers used for actual insurers used in “*Kenshou...*”

**Important information (Added February 2013)**

JAGES2010 Provisional Data distributed between Fall 2011 and September 2012 contained many elements that required cleaning. The Administration Office determined rules considered to be the minimal requirements for data users to integrate for a study group. Based on these rules, the SPSS Syntax and Stata do-file were created (**JAGES2010 Provisional Version Cleaning Guide for Users**). The complete version of the JAGES that was distributed starting October 11, 2012 is the data set that has been cleaned by the Administration Office. See the explanation form attached with the distributed document (**JAGES2010 Complete Version Data Explanation Form**).

**Important Information (Added June 2014)**

Some of the Okinawa region surveys used different forms: The Nakijin village version and Nanjo city version questionnaire booklets were used for the 2010 Nakijin village survey and the 2001 Nanjo city



survey. The same questionnaire booklet as the 2011 Nanjo City version was used for survey participants in Wakugawa region of Nakijin village, since an additional survey was conducted in 2011. Since there has been a delay in obtaining data on the certification of long-term care need from Nakijin village, the data set for distributed analysis included subjects who were certified with long-term care need (as of June 16, 2016).

#### **Important Information (Added November 2014)**

Since we obtained data on the certification of long-term care need in Nakajin village, individuals certified with long-term care need have been excluded from the 2010v3 data and onwards, which was distributed starting October 2014. Furthermore, data from Mitsui Fudosan in the Kashiwanoha area was excluded from the 2010v3 data and onwards. \*The sampling method for the Kashiwanoha Campus area (one part of the Tanaka Community Area) was different from all other Kashiwa city areas because they are working on a “Town-building for better older adults health” project, so all older adults non-certified people with a long-term care need were surveyed.

#### **Numbers distributed by area (added February 2018)**

The JAGES2013 survey includes data on distributed numbers by scode. The JAGES2016 survey does not have data coded by scode but includes data on distributed numbers by elementary school district. These data are stored by the Chiba Administrative Office. Please contact the Chiba Administrative Office at [chibaadmin.ml@jages.net](mailto:chibaadmin.ml@jages.net) for this data.

#### **Reference: Outline on cleaning**

The principles for common cleaning of all data sets consist of 1) deleting samples with invalid ages, 2) deleting samples with invalid sex, 3) partial revision of the number of residents per household<sup>9</sup> (partial adjustment for residence responses of “living alone” and “couple alone” households, and nullifying households with 15 or more residents.

For Northern Chita, Tokoname, Agui, Taketoyo, Minama, and Minamichita in Aichi prefecture, subjects’ ages and sexes can be found by viewing the 2003 survey participant log. Therefore, we attempted to take maximal advantage of the sample by using the subjects’ ages and sexes as recorded in the participant log for the 03\_07 Cohort data and 03\_06 Panel data. However, cases in which there is more than a four-year difference between the subject’s age in the survey participant log (age) and self-reported age in the survey (age\_yrw4), or if there is a discrepancy between the sex in the participant log (sex) and self-reported sex in the survey (sex\_2\_4; sex\_2\_7) were excluded as invalid

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<sup>9</sup> Selecting the number of residents per household from answer choices is considered to be more reliable results than free writing. Therefore, for analysis of individuals living alone, we recommend considering respondents who only selected “living alone” among answer choices for the number of residents per household, rather than respondents who answered that there is one person in the household.

responses, assuming that the reliability of whether the survey was filled by the respondent him/herself was questionable. A participant log was not provided by the surveyed municipality for the 2006 survey. Therefore, data cleaning will be performed on the 03\_06 panel with the 2003 survey participant log age and sex data as baseline.

**Reference) Age and sex variables to be used in analysis**

	ages2003	ages2006	jages2010	cohort03_07	panel03_06
Age variables	age_yrw4	age_ysl7	age_ysl10	age	age
Sex variables	sex_2_4	sex_2_7	sex_2_10	sex	sex

**Table II-7 2003 • 2006 • 2010 Cross-sectional data set table of city, town, and village code numbers<sup>10</sup>**

Insurer names <sup>11</sup>	Name of city, town, or village	ages2003	ages2006	jages2010	
		munif_4	new_muni	Mcode (city, town, or village)	Icode (Insurer)
Northern Chita Association	Tokai city	1		23222	239178
	Obu city			23223	
	Chita city			23224	
	Higashiura town			23442	
	Handa city	2	2	23205	232058
	Tokoname city	3	3	23216	232165
	Agui town	4	4	23441	234419
	Taketoyo town	5	5	23447	234476
	Mihama town	6	6	23446	234468
	Minamichita	7	7	23445	234450
	Higashi Kagawa	8			
	Ayauta town	9			
	Onohara town	10			
	Nankoku town	11	11		
	Susaki city	12	12		
	Totsukawa		14	29449	234496
Taisetsu Region Extended Association	Biei			1459	18325
	Higashikawa			1458	
	Higashikagura			1453	
	Towada city			2206	22061
	Iwanuma city			4211	42119
	Kashiwa city			12217	122176
	Chuo city			19214	192146
	Hawakawa city			19364	193649
	Nagoya city			23100	231101
	Hekinan city			23209	232090
	Nishio city <sup>12</sup>			23213	232132
	Isshiki town <sup>6</sup>			23481	234815
	Kira town <sup>6</sup>			23482	234823
	Hazu town <sup>6</sup>			23483	234831
	Watarai town			24470	244707
	Kobe city			28100	281006
	Takaha city			33209	332098
	Matsuura city			42208	442089
Okinawa Prefecture Extended Association for Nursing-care Insurance <sup>13</sup>	Nanjo city			47215	478446
	Nakijin			47306	

<sup>10</sup> The distinguished variable name for prefectures in the AGES2003 is pref4\_4. There is no distinguished variable name for prefectures in AGES2006. See the “AGES deta no shikibetsu hensuu kodo bukku [AGES Data Distinguished Variables Code Book]” (September 17, 2012) by EBP for JAGES2010 community data codes.

<sup>11</sup> Apart from the Northern Chita Extended Association, the Taisetsu Extended Association, and Okinawa Prefecture Extended Association for Nursing-care Insurance, there is one insurer for each city, town, or village.

<sup>12</sup> One insurer per city since April 1, 2011

<sup>13</sup>The Okinawa Prefecture Extended Association for Nursing-care Insurance differs from the Northern Chita Extended Association and the Taisetsu Region Extended Association in that only one city and one village of the 28 member cities, towns, and villages were surveyed.

**Table II-8 2003 • 2006 • 2010 Cross-sectional data set area type by city, town or village**

(J)AGES has classified cities, towns, and villages with an inhabitable area population density (population per 1 sq. km of inhabitable space) of 1500 or above as “urban,” 1,000-1,499 as “semi-urban,” and less than 1000 as “rural.” See pp. 4-5 of “*Kenkou kakusa shakai*” [Validating Health in an Unequal Society] (Igakushoin, 2007)

**Participant cities and towns from the 2003 survey**

munif 4	Prefecture name	Name of city, town, or village	Total population	Area of inhabitable land	Inhabitable area population density	Level of urbanness
1	Aichi prefecture	Chita city				Urban areas
1	Aichi prefecture	Tokai city				Urban areas
1	Aichi prefecture	Obu city				Urban areas
1	Aichi prefecture	Higashiura town				Urban
2	Aichi prefecture	Handa city				Urban
3	Aichi prefecture	Tokoname city				Semi-urban
4	Aichi prefecture	Agui town				Semi-urban
5	Aichi prefecture	Taketoyo town				Urban
6	Aichi prefecture	Mihama town				Rural
7	Aichi prefecture	Minamichita town				Rural
8	Kagawa prefecture	Higashi Kagawa city				Rural
9	Kagawa prefecture	Ayauta town				Rural
10	Kagawa prefecture	Onohara town				Rural
11	Kochi prefecture	Nankoku city				Rural
12	Kochi prefecture	Susaki city				Rural

(The total population and population density of inhabitable areas in 2003 cannot be obtained at present. Classification after calculating population density is indicated in pp. 4-5 of “*Kenkou kakusa shakai*” [Validating Health in an Unequal Society] (Igakushoin, 2007) )

**Participant cities and towns of the 2006 survey**

new_ muni	Prefecture name	Name of city, town or village	Total population	Area of inhabitable land	Inhabitable area population density	Level of urbanness
2	Aichi prefecture	Handa city	115,845	45.68	2536.0	Urban
3	Aichi prefecture	Tokoname city	51,265	50.53	1014.5	Semi-urban
4	Aichi prefecture	Agui town	24,577	22.28	1103.1	Semi-urban
5	Aichi prefecture	Taketoyo town	40,981	23.03	1779.5	Urban
6	Aichi prefecture	Mihama town	26,294	34.78	756.0	Rural
7	Aichi prefecture	Minamichita town	21,909	27.42	799.0	Rural
11	Kochi prefecture	Nankoku city	50,758	64.67	784.9	Rural
12	Kochi prefecture	Susaki city	26,039	35.66	730.2	Rural
14	Nara prefecture	Totsukawa village	4,390	27.82	157.8	Rural

(Data on total populations and inhabitable areas of cities, towns, and villages from Statistical Observations of Municipalities in 2007.)

<http://www.e->

[stat.go.jp/SG1/estat/GL08020103.do?\\_toGL08020103\\_&tclassID=000001008799&cycleCode=0&requestSender=search](http://www.e-stat.go.jp/SG1/estat/GL08020103.do?_toGL08020103_&tclassID=000001008799&cycleCode=0&requestSender=search))

**Participant city, town or village of the 2010 survey**

mcode	Prefecture name	Name of city, town or, village	Total population	Area of inhabitable land	Inhabitable area population density	3-type classification of urbanness (2003 version)	3-type classification of urbanness (2010 version)	4-type classification of urbanness (2010 version)
23222	Aichi prefecture	Tokai city	104,339	42.48	2456.2	Urban	Suburban	Urban
23223	Aichi prefecture	Obu city	80,262	32.52	2468.1	Urban	Suburban	Urban
23224	Aichi prefecture	Chita city	83,373	42.81	1947.5	Urban	Suburban	Urban
23442	Aichi prefecture	Higashiura town	48,046	29.37	1635.9	Urban	Suburban	Urban
23205	Aichi prefecture	Handa city	115,845	45.68	2536.0	Urban	Suburban	Urban
23216	Aichi prefecture	Tokoname city	51,265	50.54	1014.3	Semi-urban	Suburban	Semi-urban
23441	Aichi prefecture	Agui town	24,577	22.28	1103.1	Semi-urban	Suburban	Semi-urban
23447	Aichi prefecture	Taketoyo town	40,981	23.03	1779.5	Urban	Suburban	Urban
23446	Aichi prefecture	Mihama town	26,294	34.79	755.8	Rural	Rural	Rural
23445	Aichi prefecture	Minamichita town	21,909	27.42	799.0	Rural	Rural	Rural
23209	Aichi prefecture	Hekinan city	71,408	35.86	1991.3	Urban	Suburban	Urban
23213	Aichi prefecture	Nishio city	104,321	73.28	1423.6	Semi-urban	Suburban	Semi-urban
23481	Aichi prefecture	Isshiki town	24,068	21.96	1096.0	Semi-urban	Suburban	Semi-urban
23482	Aichi prefecture	Kira town	22,041	27.94	788.9	Rural	Rural	Rural
23483	Aichi prefecture	Hazu town	12,802	11.90	1075.8	Semi-urban	Suburban	Semi-urban
23100	Aichi prefecture	Nagoya city	2,215,062	314.31	7047.4	Urban	Urban	Metropolitan
1459	Hokkaido	Biei town	11,628	308.95	37.6	Rural	Rural	Rural
1458	Hokkaido	Higashikawa town	7,701	73.63	104.6	Rural	Rural	Rural
1453	Hokkaido	Higashikagura town	9,194	53.94	170.4	Rural	Rural	Rural
2206	Aomori prefecture	Towada city	68,359	203.06	336.6	Rural	Rural	Rural
4211	Miyagi prefecture	Iwanuma city	43,921	46.95	935.5	Rural	Rural	Rural
12217	Chiba prefecture	Kashiwa city	380,963	100.80	3779.4	Urban	Suburban	Urban
19214	Yamanashi prefecture	Chuo city	31,650	26.29	1203.9	Semi-urban	Suburban	Semi-urban
19364	Yamanashi prefecture	Hayakawa town	1,534	15.63	98.1	Rural	Rural	Rural
24470	Mie prefecture	Watarai town	9,057	20.79	435.6	Rural	Rural	Rural
29449	Nara prefecture	Totsukawa village	4,390	27.82	157.8	Rural	Rural	Rural
33209	Okayama prefecture	Takaha city	38,799	112.93	343.6	Rural	Rural	Rural
28100	Hyogo prefecture	Kobe city	1,525,393	319.54	4773.7	Urban	Urban	Metropolitan
42208	Nagasaki prefecture	Matsuura city	26,993	68.80	392.3	Rural	Rural	Rural
47306	Okinawa prefecture	Nakijin village	9,476	26.72	354.6	Rural	Rural	Rural
47215	Okinawa prefecture	Nanjo city	39,651	40.96	968.0	Rural	Rural	Rural

(Data on total populations and inhabitable areas of cities, towns, and villages from Statistical Observations of Municipalities in 2010.)

<http://www.e-stat.go.jp/SG1/estat/List.do?bid=000001026833&cycode=0>

Kayo Suzuki attempted to categorize urbanness level based on the population density of inhabitable areas in the 2010 survey at the December 2012 study group meeting. The findings from that attempt revealed that an (1) inhabitable area population density of 1000/sq. km appears to be a cut-off point above and below which various variables of areas seem to have dividing trends. (2) With regard to the financial index, the metropolises of Nagoya and Kobe seemed to have characteristics that were different from other municipalities. The following discussions were held in the study group meeting.

- ① The best way to prevent academic disagreement is to adjust the level of urbanness through continuous variables using the inhabitable area population density and its square or logarithms.
- ② However, when urbanness is treated as a covariates, simpler methods of adjustment may be preferable, depending on the academic discipline. In such case, use the 3-type or 4-type classification of urbanness at the discretion of the data user.