

Internet Survey Method in the Population Census of Japan -- Big Challenges for the 2015 Census in Japan --

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Outline of the Population Census in Japan

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- 3. Flowchart of census
- 4. Result summary of Population Census 2010
- 5. Need for changing the methodology of the Population Census



Outline of the Population Census in Japan

1. Outline of the Population Census in Japan

- The Population Census of Japan is conducted every five years (excluding 1945 because of WW2).
- First: 1920, Latest: 2010 (19th)
- Common feature through all Censuses before 2005 :
 - Taken as of 0:00 a.m., October 1.
 - Used one questionnaire form for simplicity (with about 20 items) --- no “long and short” etc.
 - Distributing and Collecting by enumerators
 - Self-enumeration (background: high literacy rate since the 19th century)



Outline of the Population Census in Japan

2. “Enumeration Districts” (EDs)

- Setting of the Population Census enumeration districts
 - In order to clarify the areas for which each population census enumerator is responsible, the entire country is divided into sections as of October 1 of the year before the census date.
 - * The areas are set in a manner so that each enumeration contains approx. 50 households, using clear topology or features such as roads, rail-roads and rivers as the boundary = about 1 million districts
- (Role)
 - Prevent duplication/omission
 - Used as a basic unit for creating small-area statistics and also as a sampling unit in sample surveys



Outline of the Population Census in Japan

2. “Enumeration Districts” (EDs)

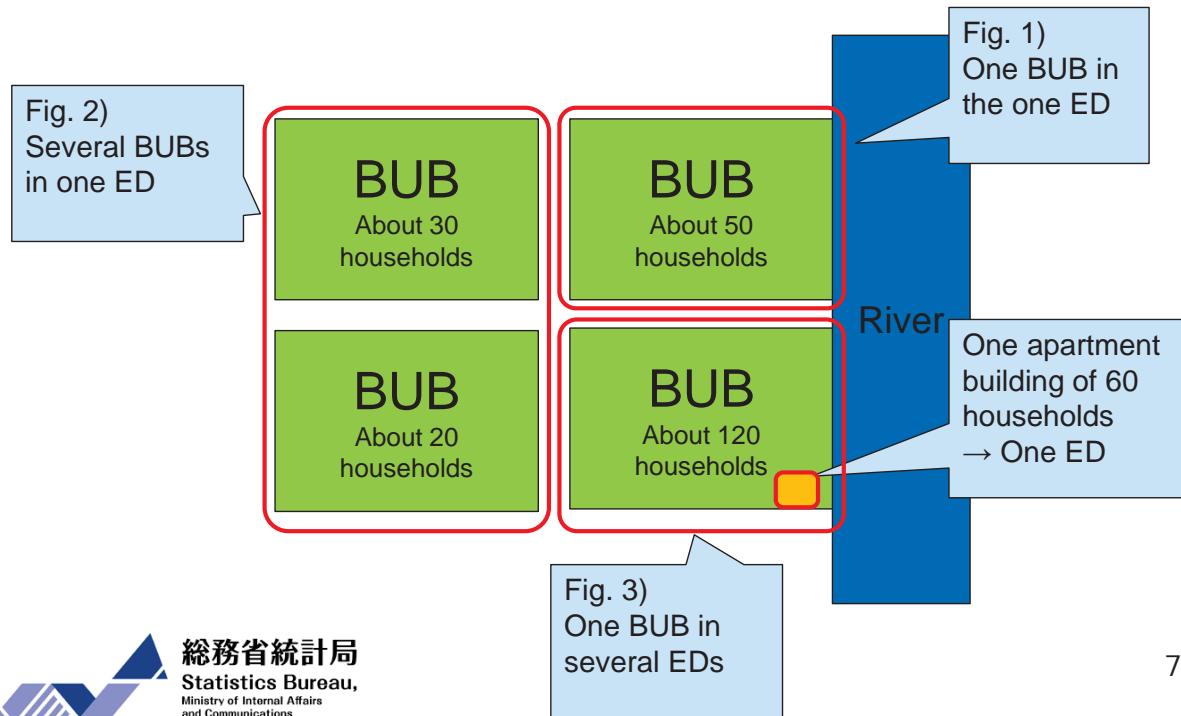
- Area Unit constituting Census enumeration districts (Basic Unit Blocks)
 - Until Population Census 1985, enumeration district was set for each population census
 - => Difficulties in chronological comparison of small-area statistics
 - Introduction of “Basic Unit Blocks”(BUBs) in Population Census 1990
 - => With the expansion of areas included in the addressing system as a background, a permanent area unit of the minimum size was set.
 - = Enabling chronological comparison of statistics for small areas and enrichment of small-area tabulation
 - => The “block” or “areas sectioned according to blocks” in the addressing system was set as the minimal unit.
 - = 25 - 30 households



Outline of the Population Census in Japan

2. “Enumeration Districts” (EDs)

- “Basic Unit Blocks” (BUBs) and “Enumeration Districts” (EDs)

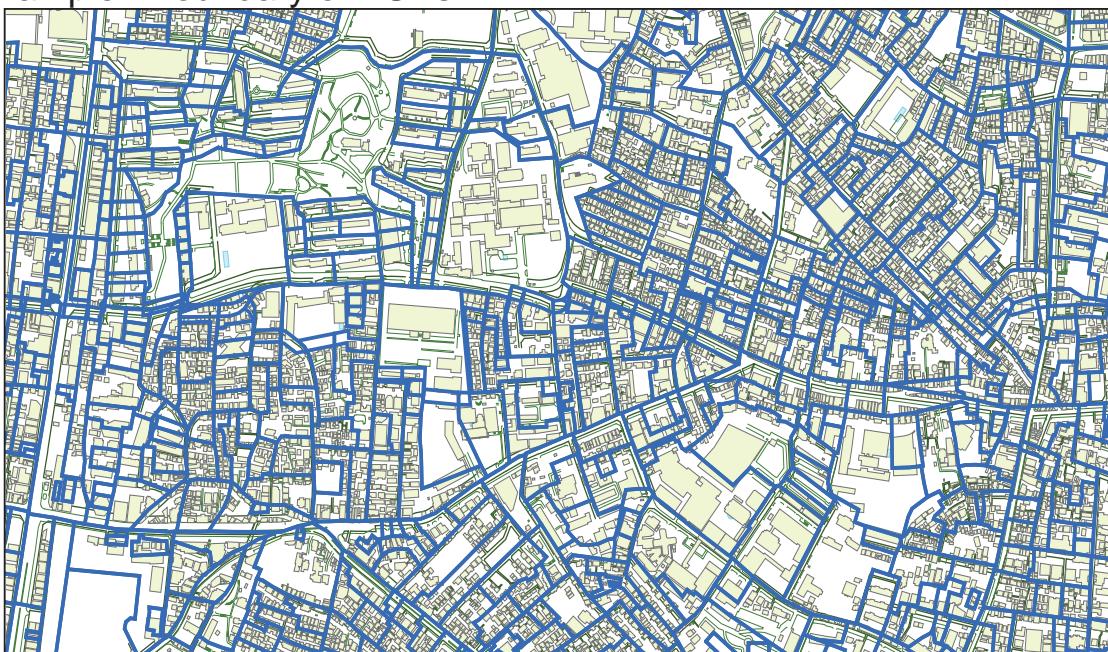


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Outline of the Population Census in Japan

2. “Enumeration Districts” (EDs)

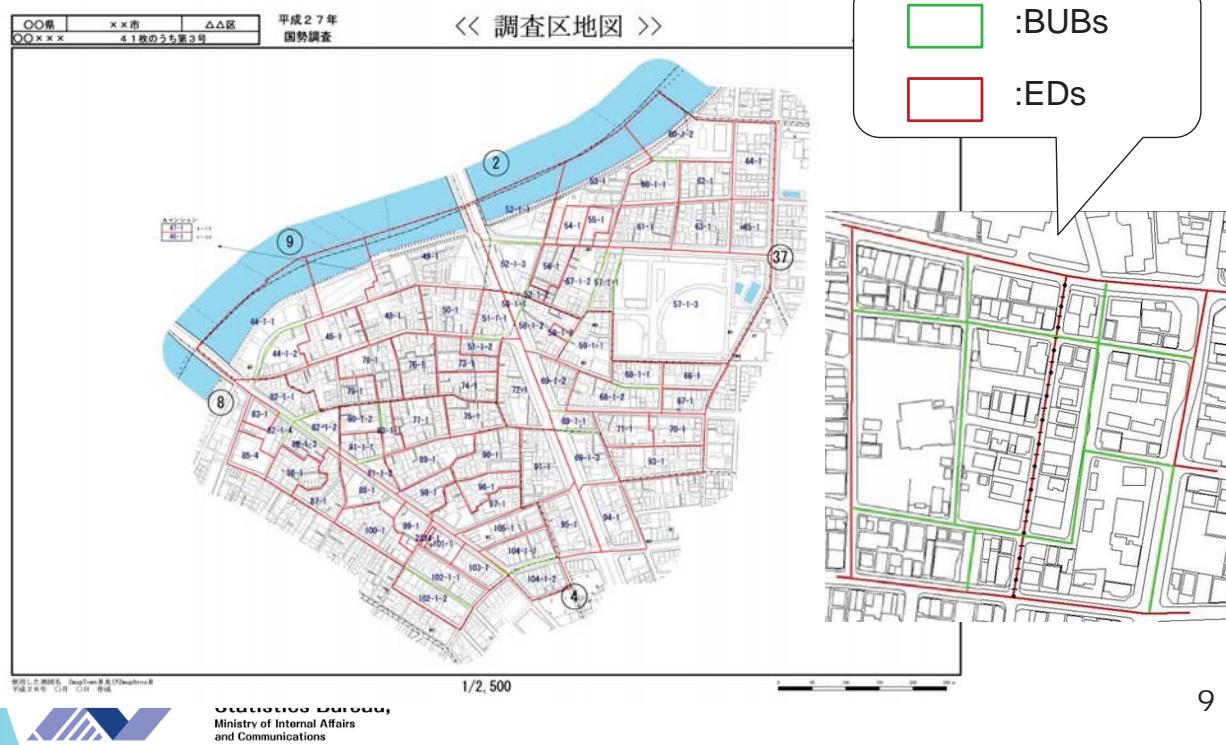
- Example : Boundary of BUBs



Outline of the Population Census in Japan

2. “Enumeration Districts” (EDs)

- Example : Boundary of BUBs and EDs

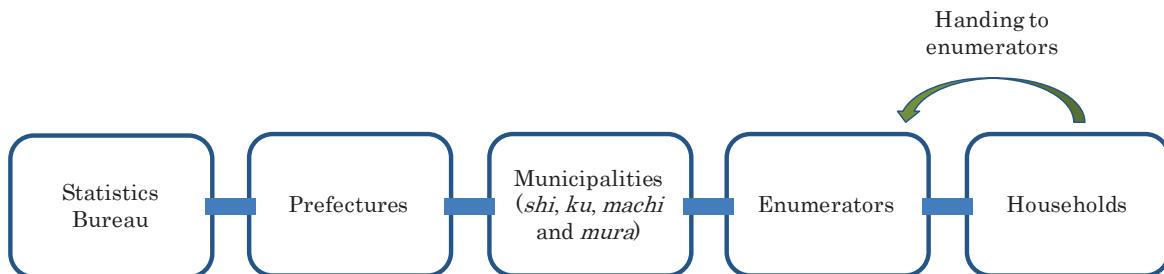


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Outline of the Population Census in Japan

3. Flowchart of census

- Common feature through all Censuses before 2005(cont'd) :
 - Conducted through the channels:



Outline of the Population Census in Japan

3. Flowchart of census

□ Field Work (Work of Enumerators)

- Making a list and a map of all the respondents they are to cover and contact in advance.
- Distributing internet IDs and questionnaires, requesting the cooperation of respondents.
- Collecting the completed questionnaires and submitting them to the local government.

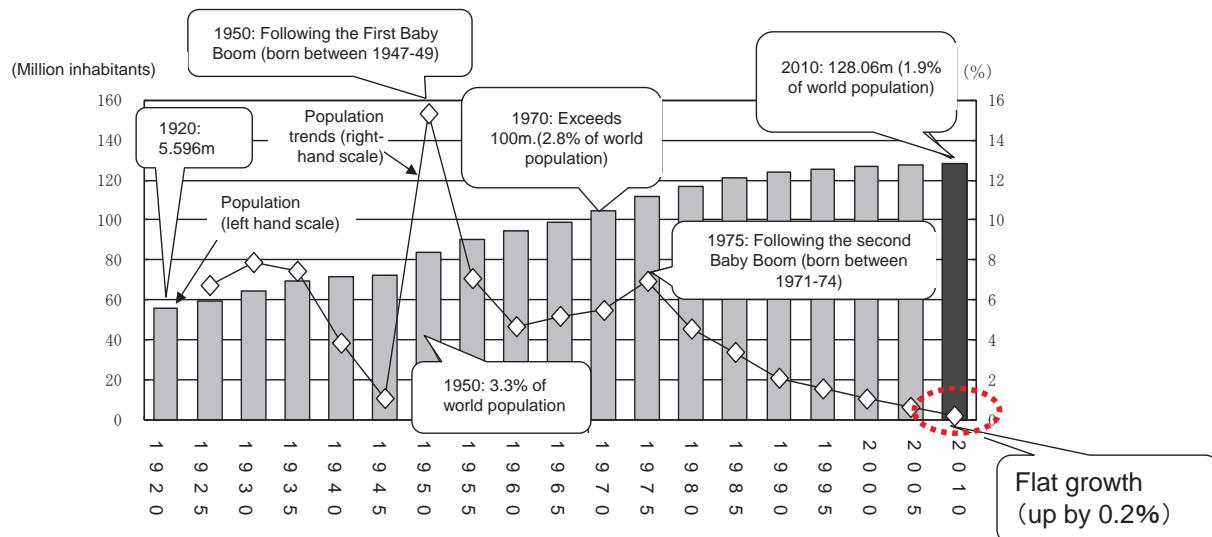


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Outline of the Population Census in Japan

4. Result summary of Population Census 2010

Change in Population—Nationwide (1920 - 2010)



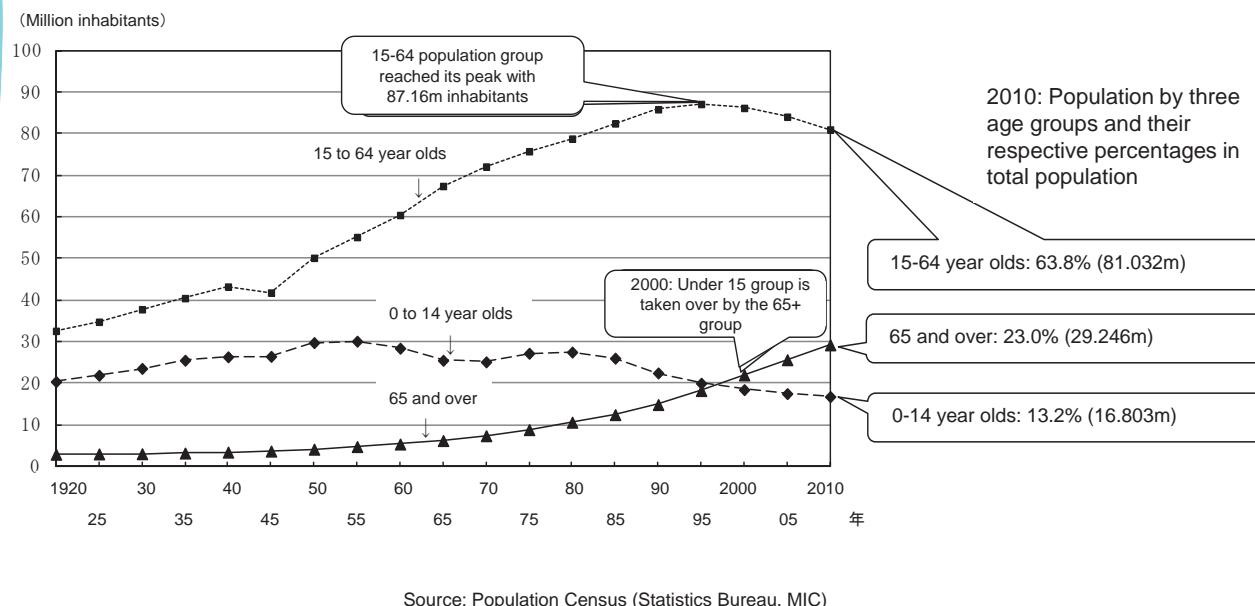
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Outline of the Population Census in Japan

4. Result summary of Population Census 2010

Change in population by three age groups—Nationwide (1920-2010)

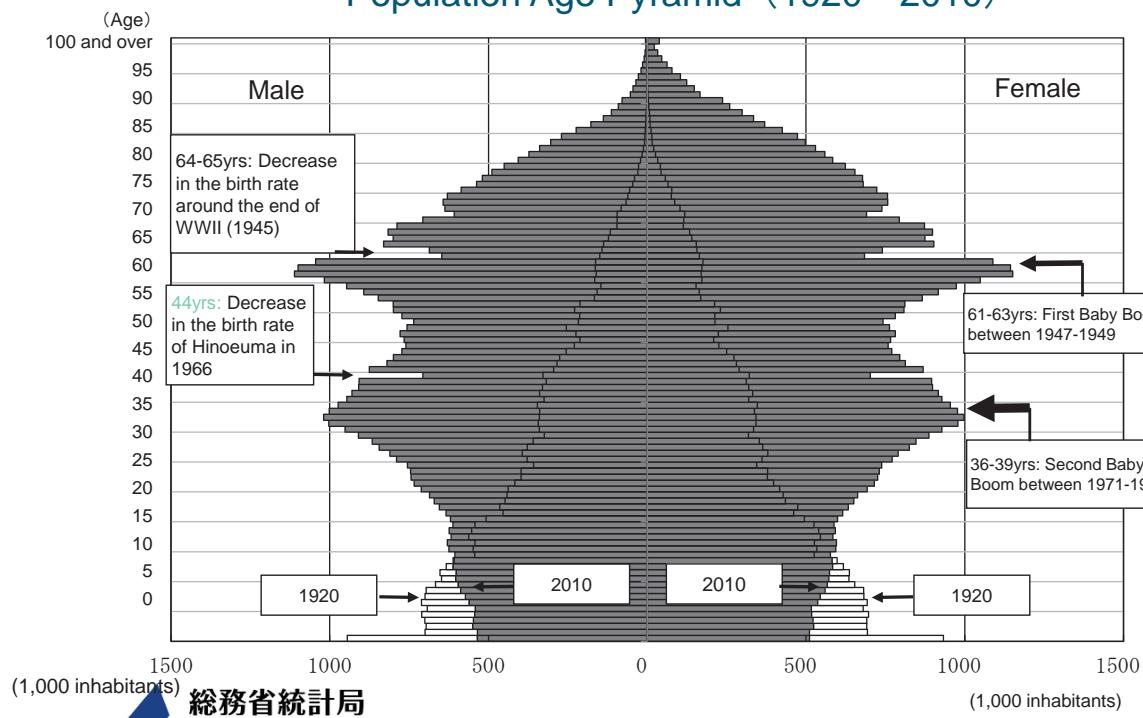


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Outline of the Population Census in Japan

4. Result summary of Population Census 2010

Population Age Pyramid (1920 · 2010)



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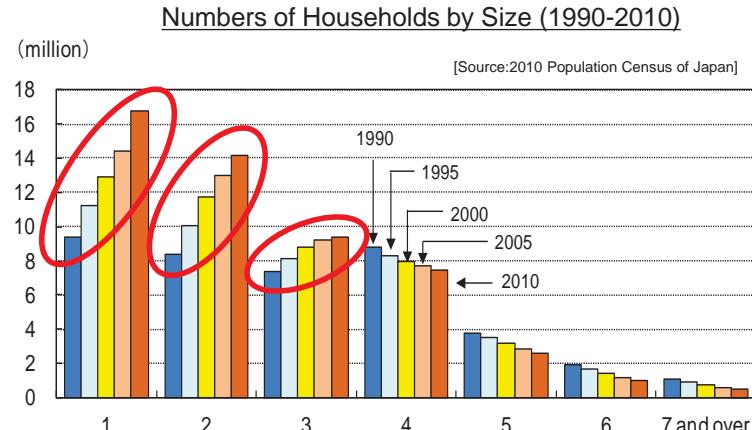
Outline of the Population Census in Japan

4. Need for changing the methodology of the Population Census

Changing environments ---

□ Increasing households which are absent during the day

- “single-person households”,
- “two-income families”,
- “nuclear families”



➤ Need for changing the methodology of the Population Census



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2010 Census Methodology

- 1. New Data Collection Methodology for the 2010 Census
- 2. Survey items of the 2010 census
- 3. Questionnaire form of the 2010 census
- 4. Picture of the internet form of the 2010 census
- 5. Online responses of the 2010 census



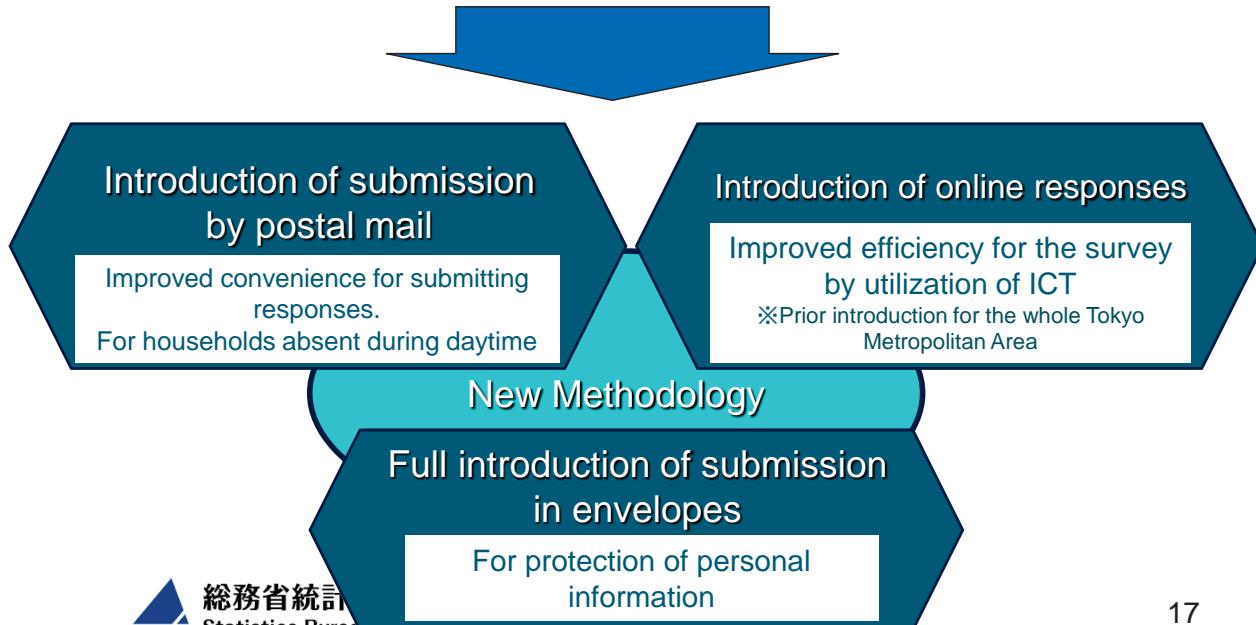
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2010 Census Methodology

1. New Data Collection Methodology for the 2010 Census

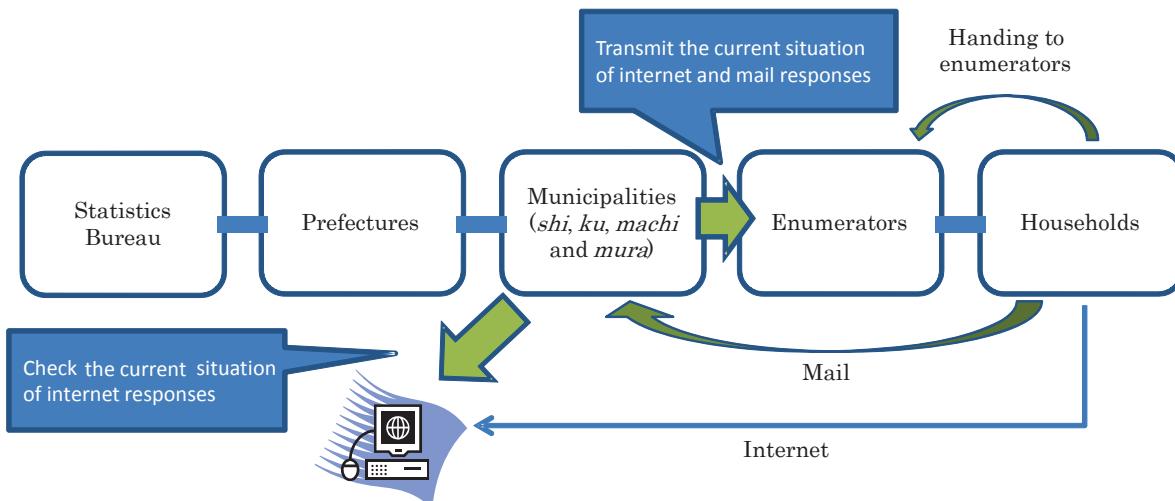
- Dealing with Absence of household members, we introduced ---



2010 Census Methodology

1. New Data Collection Methodology for the 2010 Census

- Flowchart



2010 Census Methodology

2. Survey items of the 2010 census

- Survey items were the following 20 items:

[for household members(15)]

- (1) Name
- (2) Sex
- (3) Year and month of birth
- (4) Relationship to the household head
- (5) Marital status
- (6) Nationality
- (7) Duration of residency at the current domicile
- (8) Place of 5 years previous residence
- (9) Education
- (10) Type of activity
- (11) Name of establishment and kind of business (Industry)
- (12) Kind of work (Occupation)
- (13) Employment status
- (14) Place of work or location of school
- (15) Transportation to the place of work or the location of school

[for households(5)]

- (1) Type of household
- (2) Number of household members
- (3) Type and tenure of dwelling
- (4) Area of floor space of dwelling
- (5) Type of building and number of stories



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2010 Census Methodology

3. Questionnaire form of the 2010 census

- Questionnaire form
(size: A4 paper)
 - For 4 persons (at most)
 - OCR - Recognized



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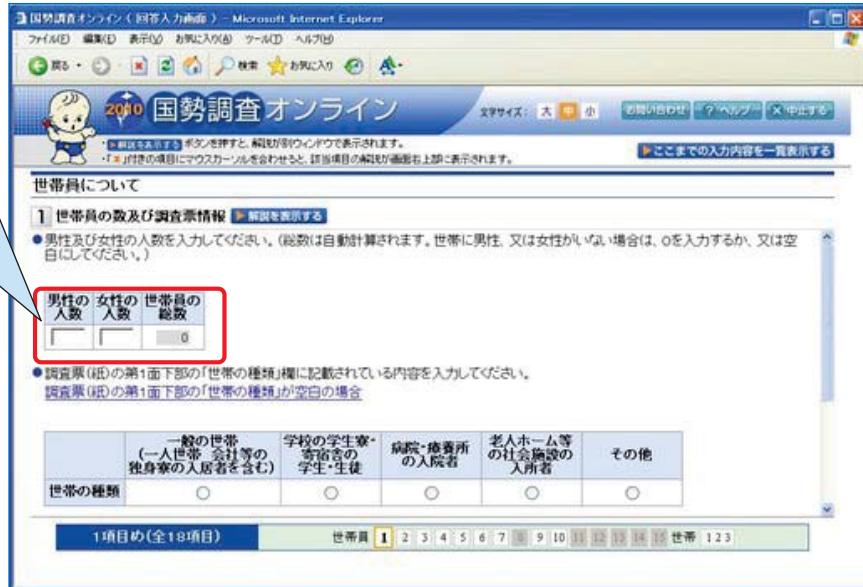
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2010 Census Methodology

4. Picture of the internet form of the 2010 census

□ Picture of internet form (1)

[Number of household members]
After typing the Male number and Female number, the total number is automatically entered.



国勢調査オンライン（回答入力画面） - Microsoft Internet Explorer

2010 国勢調査オンライン

世帯員について

1 世帯員の数及び調査票情報 解説を表示する

● 男性及び女性の人数を入力してください。（総数は自動計算されます。世帯に男性、又は女性がない場合は、0を入力するか、又は空白にしてください。）

性別	人数	合計
男性	<input type="text"/>	<input type="text"/>
女性	<input type="text"/>	<input type="text"/>
合計	<input type="text"/>	0

● 調査票（印）の第1面下部の「世帯の種類」欄に記載されている内容を入力してください。
調査票（印）の第1面下部の「世帯の種類」が空白の場合

世帯の種類	一般的の世帯 (一人世帯、会社等の 独身寮の入居者を含む)	学校の学生寮・ 寄宿舎の 学生・生徒	病院・療養所 の入院者	老人ホーム等 の社会施設の 入所者	その他
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1項目め（全18項目） 世帯員 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 世帯 123



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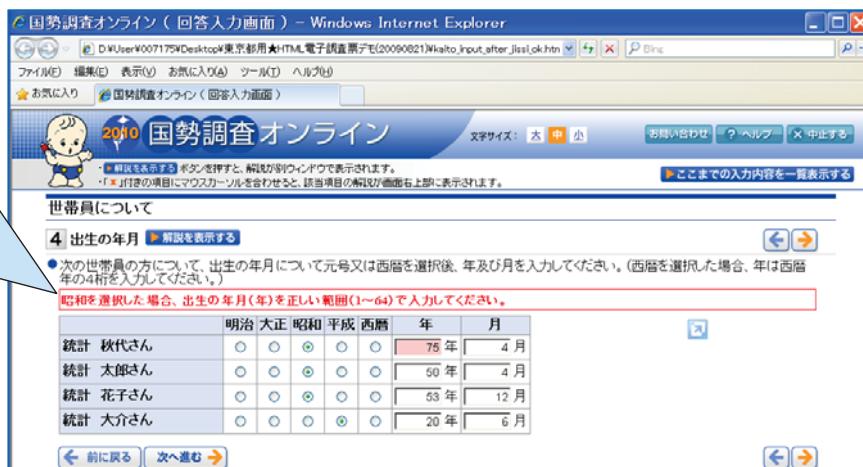
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2010 Census Methodology

4. Picture of the internet form of the 2010 census

□ Picture of internet form (2)

[Year and month of birth]
If typing by mistake, an error message appears.
(this example is the case of a range error)



国勢調査オンライン（回答入力画面） - Windows Internet Explorer

2010 国勢調査オンライン

世帯員について

4 出生の年 解説を表示する

● 次の世帯員の方について、出生の年月について元号又は西暦を選択後、年及び月を入力してください。（西暦を選択した場合、年は西暦年の4桁を入力してください。）

昭和を選択した場合、出生の年月(年)を正しい範囲(1~64)で入力してください。

	明治	大正	昭和	平成	西暦	年	月
統計 秋代さん	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	75 年	4 月
統計 太郎さん	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	50 年	4 月
統計 花子さん	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	53 年	12 月
統計 大介さん	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	20 年	6 月

◀ 前に戻る ▶ 次へ進む



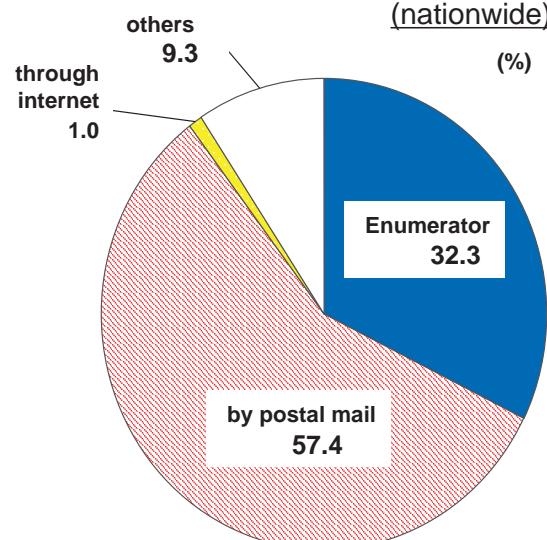
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2010 Census Methodology

5. Online responses of the 2010 census

The ratios of methods of responses (nationwide) (%)



•through internet (only Tokyo)

•The ratio of responses through internet in Tokyo is 8.3% (about 530,000 households)



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【by postal mail】

⇒ A higher proportion of mailing submission was observed in and around big cities

【by Enumerator】

⇒ Indeterminate items in the submitted questionnaires are increasing

【through internet】

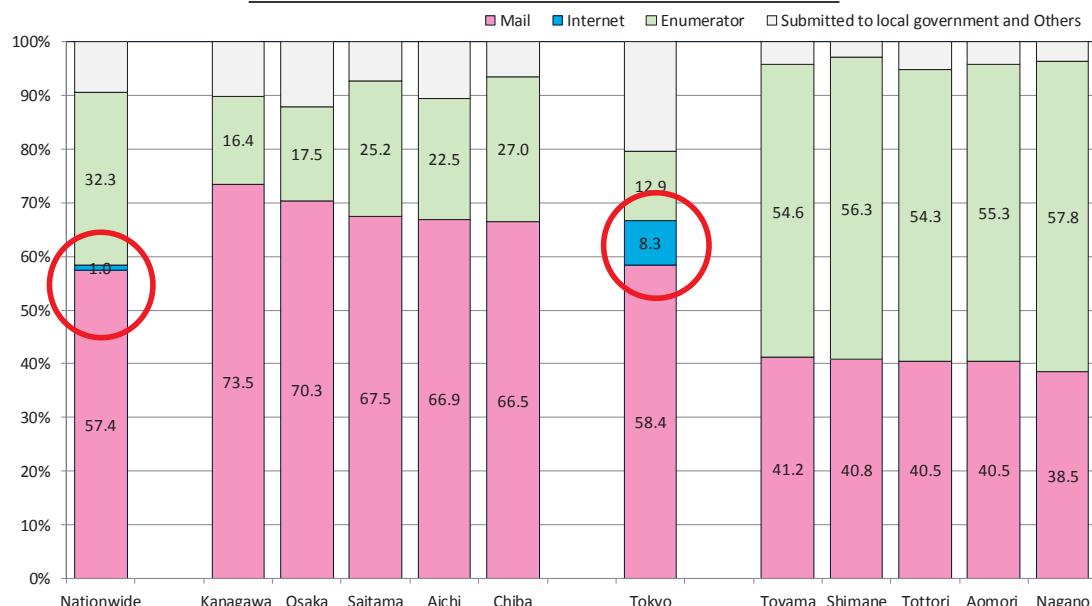
⇒ Relatively younger generation used the internet and wished to use it again (about 90%) in the next Census.

⇒ Effective in preventing omission of inputting and entry errors

2010 Census Methodology

5. Online responses of the 2010 census

Submission Status of Questionnaire



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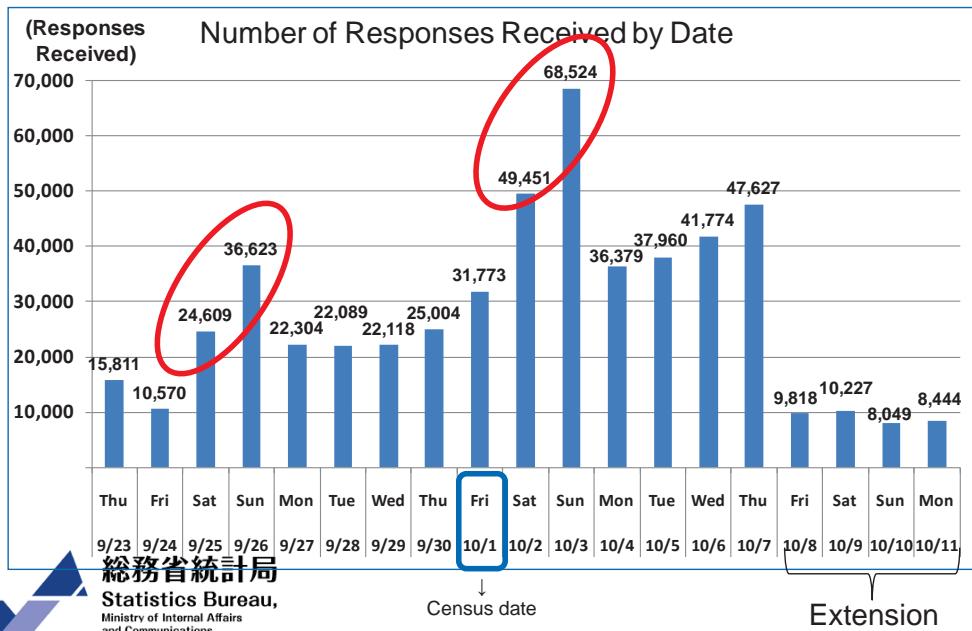
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2010 Census Methodology

5. Online responses of the 2010 census

- Responses by Internet

--- Finally, 529,154 responses (8.3% of Tokyo).



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2010 Census Methodology

5. Online responses of the 2010 census

[Advantages]

- Internet responses in Tokyo amounted to 8.3%
- Relatively younger generation used the internet and wished to use it again (about 90%) in the next Census
- Effective in preventing omission of inputting and entry errors

[Disadvantages]

- Increasing burden for clerks by duplication

Needs for

- Increasing the internet response rate more than 2010
- Constructing a Response Management System

Pilot surveys for the 2015 Census

- 1. Pilot survey of the 2015 Population Census
- 2. The First Pilot survey
- 3. The Second Pilot survey



Pilot surveys for the 2015 Census

1. Pilot survey of the 2015 Population Census

- The First Pilot survey of the 2015 Population Census was conducted in July 2012:
=> Conducting two trial internet methods (differences:
internet response period)
- The Second Pilot survey of the 2015 Population Census was conducted in June 2013:
=> Building the response management system by
Smartphone
- The Third Pilot Survey of the 2015 Population Census was conducted in June 2014: (full - dress rehearsal)



Pilot surveys for the 2015 Census

2. The First Pilot survey

- The two methods were the following:

- Step by Step method

--- Former internet response period with no questionnaire and after other response (handing over and by postal mail) period

- Parallel method (same as 2010 Census)

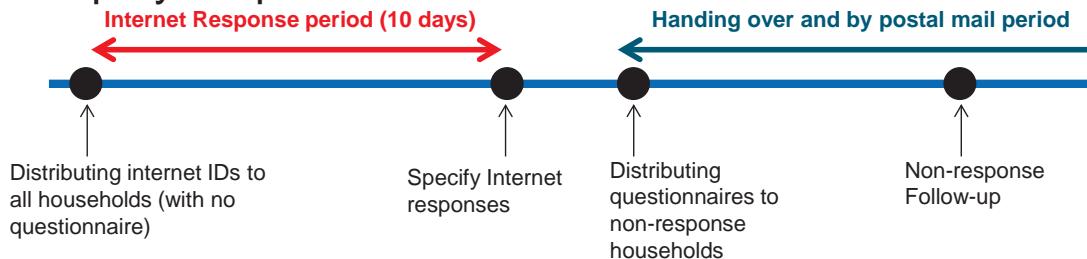
--- Distributing questionnaire with internet ID, and households can choose three methods (handing over, by postal mail and through internet) in the same period



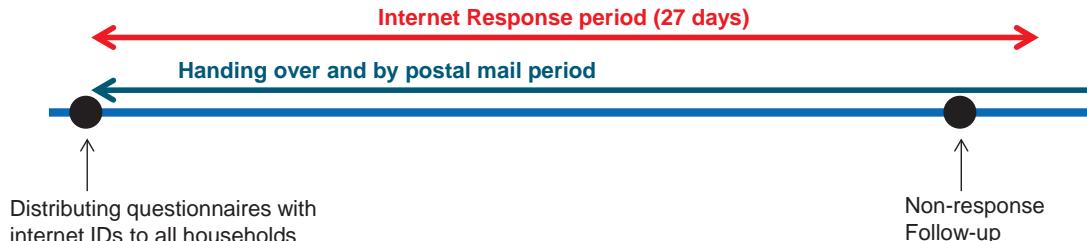
Pilot surveys for the 2015 Census

2. The First Pilot survey

- Step by Step method



- Parallel method



Pilot surveys for the 2015 Census

2. The First Pilot survey

- The 1st pilot survey's internet response rates were:

- Step by Step method : 25.3%
- Parallel method : 6.5%



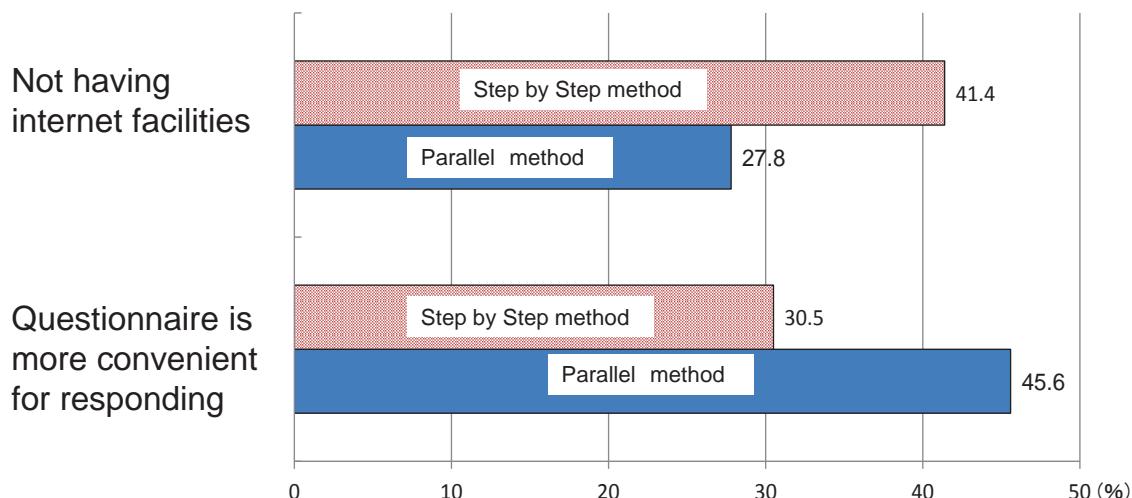
- Decided to introduce the Step by Step method
=> Leading households which are available to respond through the internet to respond through the internet



Pilot surveys for the 2015 Census

2. The First Pilot surveys

The reasons for not responding through the internet



Pilot surveys for the 2015 Census

3. The Second Pilot survey

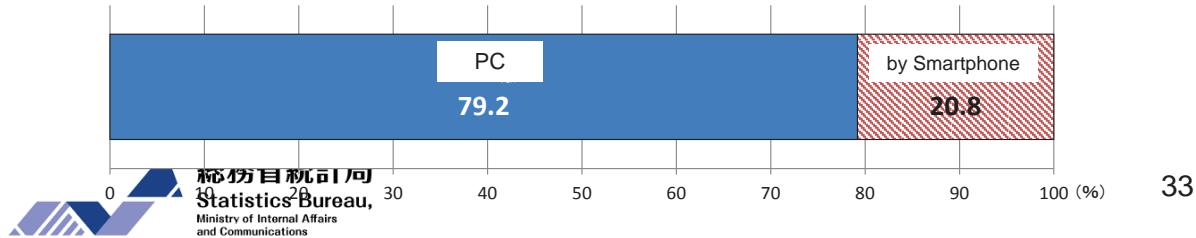
- Leading households to respond through the internet

=> Conducted only through the Step by Step method
(14 cities 8,400 households)

=> **Creating the Application for response by Smartphone**

* internet response rates (the Step by Step method)
: **23.3%**

The ratios of responses by PC and Smartphone



Preparation for the 2015 Census

- Big Challenges for the 2015 Census in Japan
- 1. New methodology of the 2015 Census
- 2. New system for the 2015 Census
- 3. Other points of the 2015 Census
- 4. The Schedule of the 2015 Census
- 5. Summary

Preparation for the 2015 Census

Big Challenges for the 2015 Census in Japan

The first Effort in Japan

Conducting an online survey all over the country

The largest online survey in the world

About 10 million households are expected to respond through the internet.

The first Methodology in Japan

Conducting an online survey antecedent to a questionnaire survey

Creating the Application for response by Smartphone

By using the advanced Japanese information and communications technology (ICT)



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Preparation for the 2015 Census

1. New methodology of the 2015 Census

Conducting an online survey all over the country

=> Providing several methods for response improves convenience for households.

The largest online survey in the world

=> About 10 million households are expected to respond through the internet.



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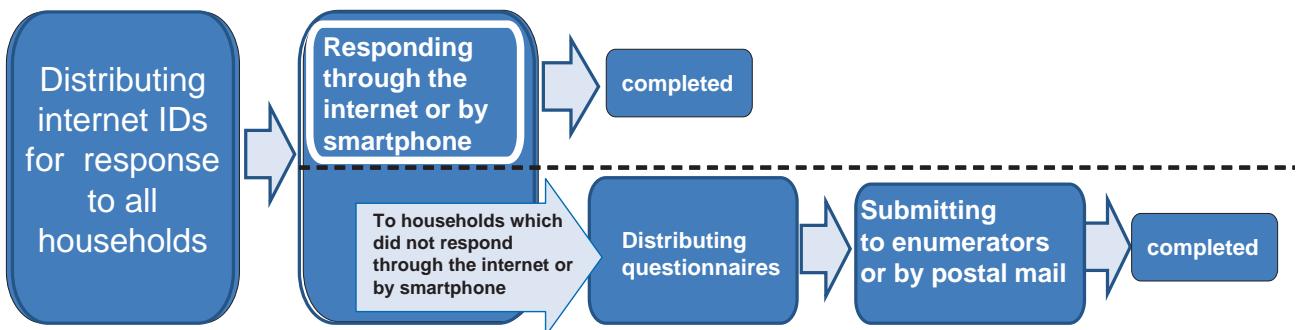
Preparation for the 2015 Census

1. New methodology of the 2015 Census

□ Encouraging Online responses

=> Conducting an online survey antecedent to a questionnaire survey by **the Step by Step method**

Creating the Application for response by Smartphone



Preparation for the 2015 Census

1. New methodology of the 2015 Census

□ Entrusting the operations of responses by postal mail to a private company

=> A QR code is printed on each return envelope for response by postal mail in advance. After submitted, by reading the QR code, we can check the current situation of response from the system.

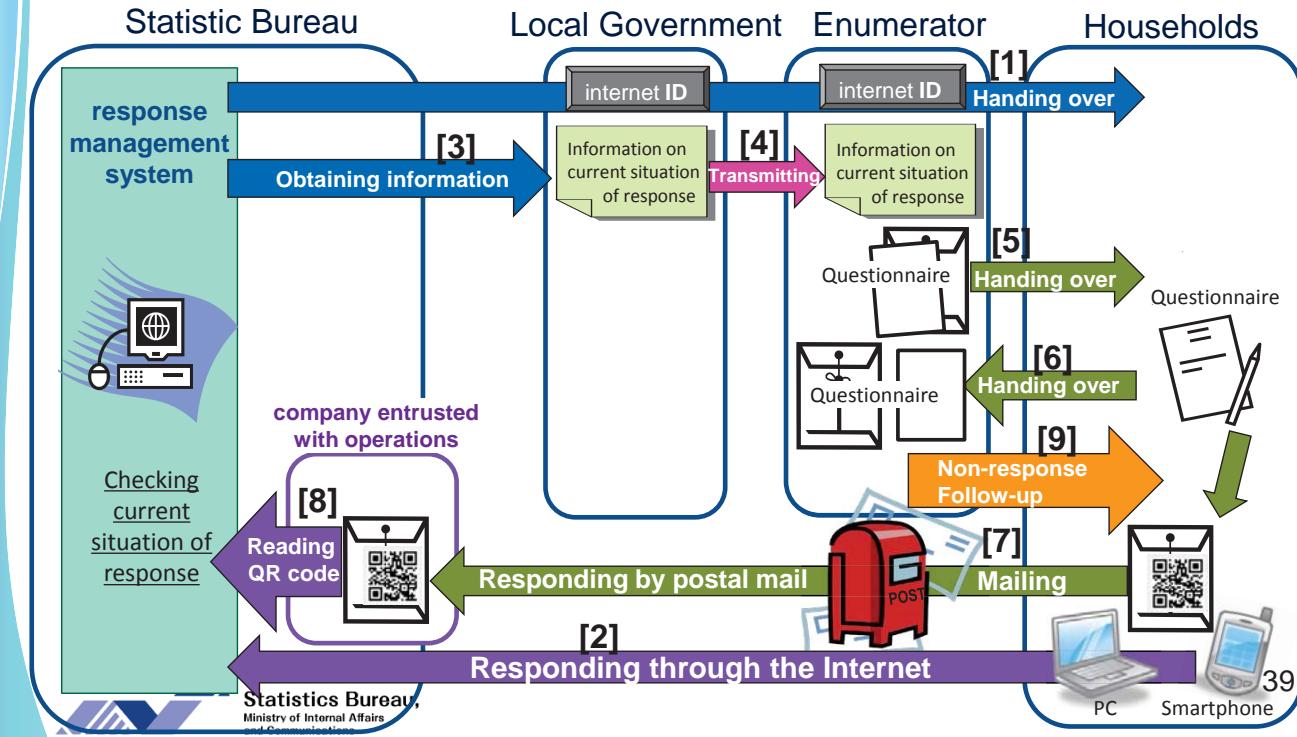
□ Building response management system

=> Checking the current situation of response.
Reducing burden for clerks by duplication.

Preparation for the 2015 Census

2. New system for the 2015 Census

□ Building response management system



Preparation for the 2015 Census

3. New system for the 2015 Census

□ Building response management system

[Through the internet] [1] Enumerators distribute internet IDs to all households.

[2] The results of the responses through the internet or by smartphone are sent to the response management system.

[Questionnaires] [3] From the system, staff members obtain the information on the current situation of responses. [4] They transmit the information to enumerators.

[5] Enumerators distribute questionnaires to households which have not responded through the internet or by smartphone.

Questionnaires are submitted [6] by handing over to enumerators

[By postal mail] [7] or by postal mail. A **QR code** is printed on each return envelope for response by postal mail in advance. [8] After questionnaires in these postal envelopes are submitted, by reading the **QR codes on these envelops**, we can check the current situation of responses from the system.

- Checking the current situation of responses.
- Reducing the burden for clerks by duplication.

=> [9] Non-response Follow-up

Preparation for the 2015 Census

3. The other points of the 2015 Census

- The effects of The Great East Japan Earthquake
=> By surveying the item “Address as of 5 years ago” added to identify the migration situation, we can understand the migration situation **of The Great East Japan Earthquake (March 11, 2011)**

- Bring forward the dissemination date
=> By reconsidering the flow of tabulation, reducing the period of processing data and Bring forward the dissemination date.



Preparation for the 2015 Census

4. The Schedule of the 2015 Census

- June 2014: The Third Pilot Survey of the 2015 Census (full - dress rehearsal)
- July 2014 to Feb 2015: The EDs for the 2015 census is demarcated
- **Oct. 1 2015: 2015 Population Census**

<Release Schedule>

- Feb. 2016: Preliminary counts of population (based on summary sheets)
- June 2016: Preliminary sample tabulation
- Oct. 2016: Basic Complete Tabulation on Population and Households
- Apr. 2017: Basic Complete Tabulation on Industries
=> 7 months earlier than the 2010 Census
- Sept. 2017: Basic Complete Tabulation on Occupations
=> 2 months earlier than the 2010 Census
- Dec. 2017: Detailed Sample Tabulation
=> 10 months earlier than the 2010 Census



- It will take 2 years and 3 months for all tabulations.
=> 10 months earlier than the 2010 Census



Preparation for the 2015 Census

5. Summary

- Introducing the Step by Step method to increase the internet response rate --- automatic checking will be done (23.3% in 2nd pilot survey)
- Available to respond by Smartphone --- for single households
- Building the Response Management System

[Advantages]

- Reducing respondent burden
- Higher Data quality is --- automatically checking
- Reducing the period of processing data (data entry, data checking, coding and so on)



Thank you for your kind attention!

