Japan's Experience with the Internet Survey Method in the 2010 Census

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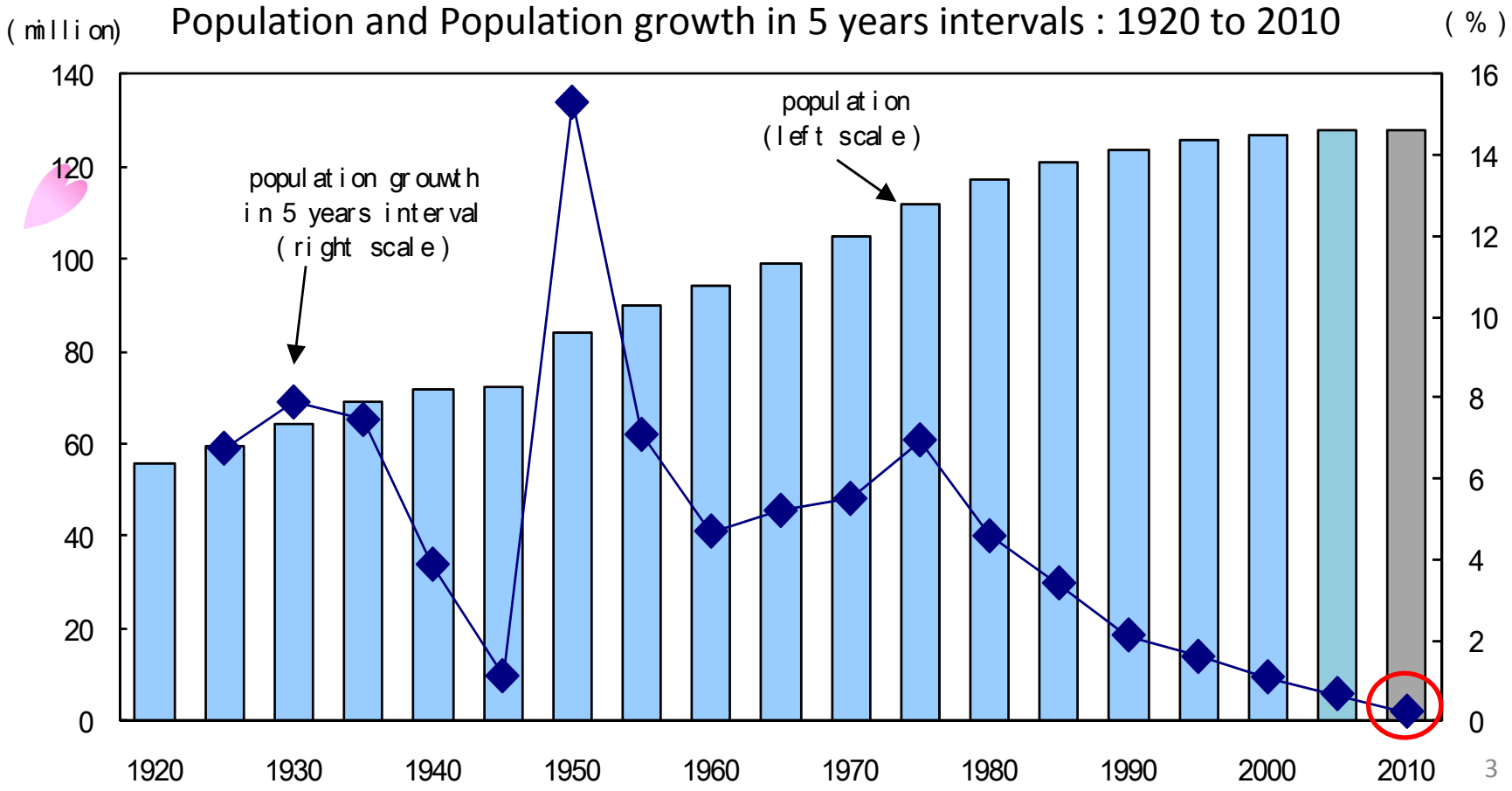
1. Introduction – The 2010 Population Census of Japan

Results of The Preliminary Counts

(1) Total Population: 128.06 million

Population and Population growth in 5 years intervals : 1920 to 2010



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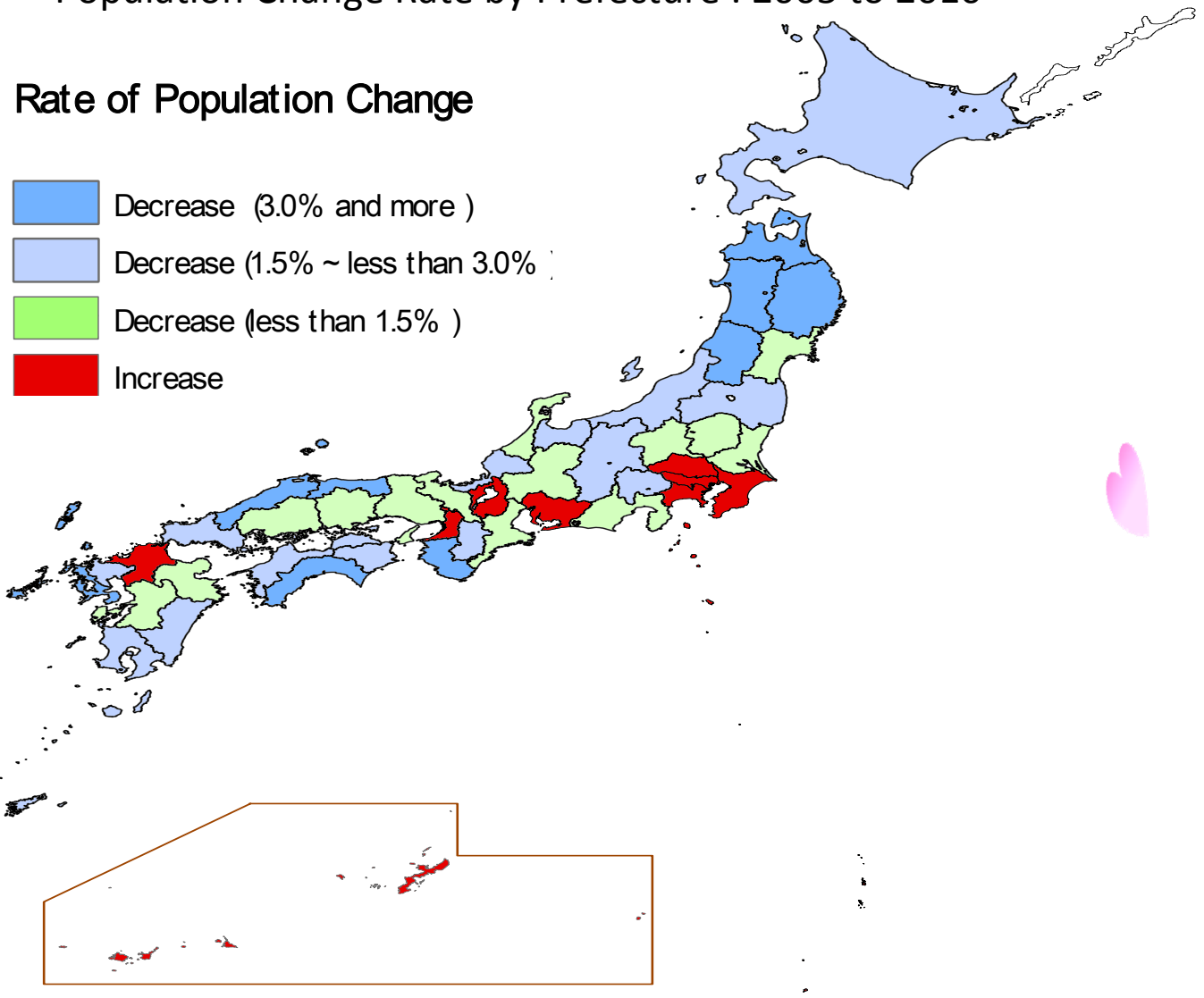
1. Introduction – The 2010 Population Census of Japan
Results of The Preliminary Counts

Population Change Rate by Prefecture : 2005 to 2010



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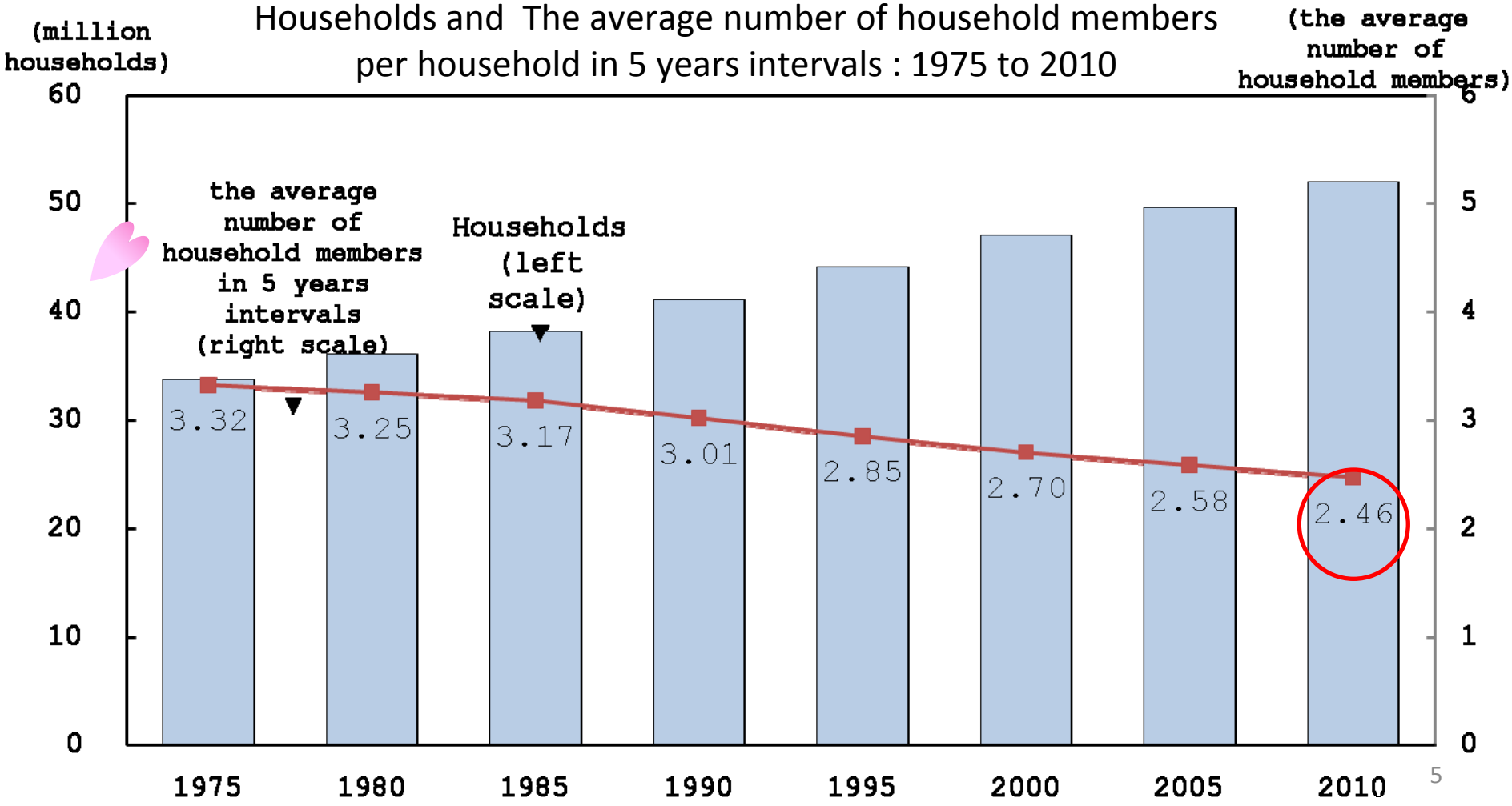
1. Introduction – The 2010 Population Census of Japan

Results of The Preliminary Counts

(2) Households: 51.95 million

Households and The average number of household members per household in 5 years intervals : 1975 to 2010



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1. Introduction – The 2010 Population Census of Japan

(1) Some Basic Facts about the Population Census of Japan

- Conducted every five years (years of “0” and “5”), as of 1 October
- The last census conducted as of 1 October 2010 (19th census since its first in 1920)
- asked to all households
- Operation undertaken in collaboration with local governments

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1. Introduction – The 2010 Population Census of Japan

(2) Strategies for the 2010 Census

The Main Goal: Provide relevant and reliable statistics for society

To achieve the main goal, we need to attain

- High Accuracy
- Respondent-Friendliness
- Efficiency

Improve Approaches

Measures Taken

- Reach the hard-to-count population (Single households, security-locked apt.)
- Use administrative information for editing and imputation
- Request supplementary information to apartment owners, etc.

- Multi-Mode return options
  - Submit to enumerators in sealed envelopes
  - Mail by return envelopes
  - Use internet (Tokyo Area only)
- Call center to answer questions from respondents
- Enhanced public relations through cooperation from media, citizens' groups, employers

- Use of ICT for internet responses and other areas of operation
- Upgrading of data capture machines (ICR) with higher performance
- Automated or computer-assisted coding for more classifications
- Simplify enumeration work, and reduce enumerators

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2. Internet Response System – Design Consideration

(1) Data Collection Method

Delivery

- Enumerators deliver questionnaires to households door-to-door to confirm existence of households

Collection

- Multi-Mode Data Collection for the convenience of respondents
  - Submit to enumerators in sealed envelopes to relieve from privacy concerns
  - Send by mail (post) to the municipal office
  - Use the Internet Response System (Tokyo Area only)

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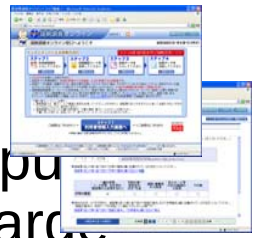
2. Internet Response System – Design Consideration

(1) Data Collection Method



Internet Response System - Why Tokyo only?

✓Introducing a new system for the whole country (popu of 127 million) is too risky, and a pilot operation of a large scale is necessary.

✓Tokyo is a miniature of Japan (13 million) covering diverse areas.

✓Population is large enough to gain experiences for future development.

✓It is easier to deal with unexpected troubles because the Statistics Bureau is in Tokyo.

✓The introduction of internet response system in Tokyo is expected to be more effective than other areas because of

i) high internet penetration rate

ii) high percentage of difficult-to-approach households

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2. Internet Response System – Design Consideration

(2) Process Flow

Enumerator's Visit

Delivery of Documents and ID

Respondent

JavaScript is down-loaded on user's PC to reduce the load on the server

All communications are protected by SSL encryption

1 Login

2 Download JavaScript

3 Send Response

4 Confirm Receipt

User Interface and User Verification

Internet Response System for 2010 Census (Response Database)

Government-Wide Survey Management System

Maximum Processing Capacity: 50,000 Responses per Hour

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2. Internet Response System – Design Consideration

(3) Security Measures for the Internet Response System

- Secure Communication
  - SSL encryption
- Prevention of Unauthorized Access
  - Each respondent change the password from the given one
  - The response information cannot be viewed again after submission for safety reason
- Monitoring of System Operation
  - 24-hour monitoring for system failure, unauthorized access, cyber attacks, etc.
  - Daily monitoring to prevent an appearance of “phishing site”
- Data protection in Data Center
  - Tight security
  - Data protection in case of large-scale disaster

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2. Internet Response System – Design Consideration

(4) User's Requirements on PC Environment

- Available Environment

	Microsoft Internet Explorer 6.02	Microsoft Internet Explorer 7.0	Microsoft Internet Explorer 8.0	Mozilla Firefox 3.x	Apple Safari 4.x	Apple Safari 5.x
Microsoft Windows XP SP2 SP3	○	○	○	○	○	○
Microsoft Windows Vista SP2	-	○	○	○	○	○
Microsoft Windows 7	-	-	○	version 3.6 or higher	version 4.0.4 or higher	○
Mac OS X 10.4.x	-	-	-	○	○	-
Mac OS X 10.5.x 10.6 x	-	-	-	○	○	○

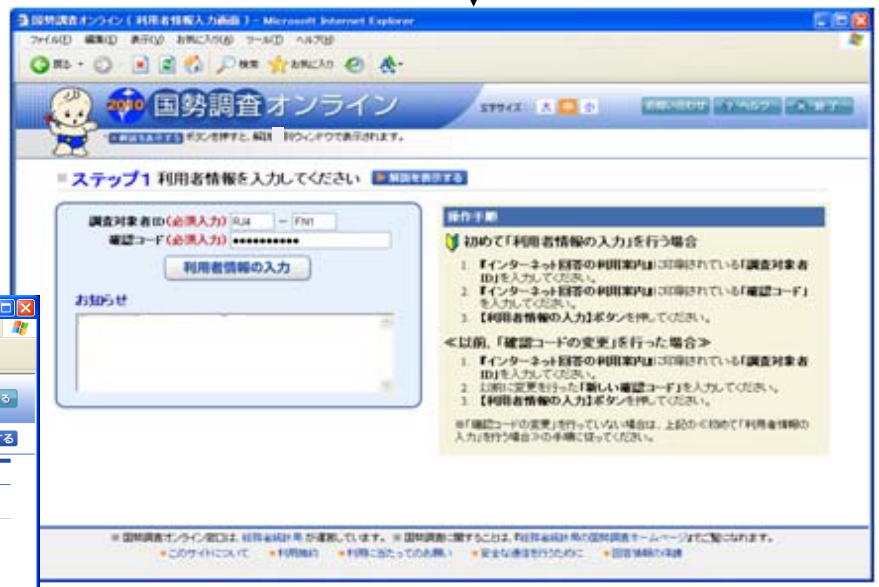
Although the tablet PC's, such as iPad, iPhone and Android, were not tested in advance, there were a number of users who succeeded in accessing and completing the electronic questionnaire.

2. Internet Response System – Design Consideration

(5) Sample of Screens

1 Initial Screen

2 Log In Screen
(Enter ID and verification code)



3 Data Entry Screen
(Place of work or schooling)

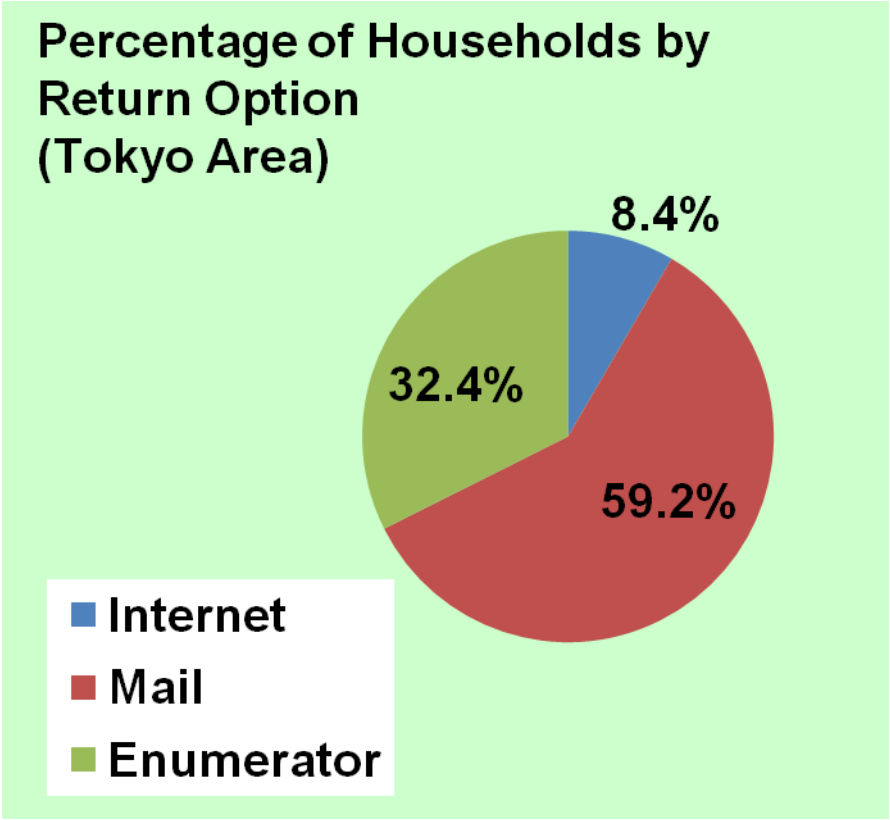
3. Internet Response System – Outcomes

(1) Internet Response Rate

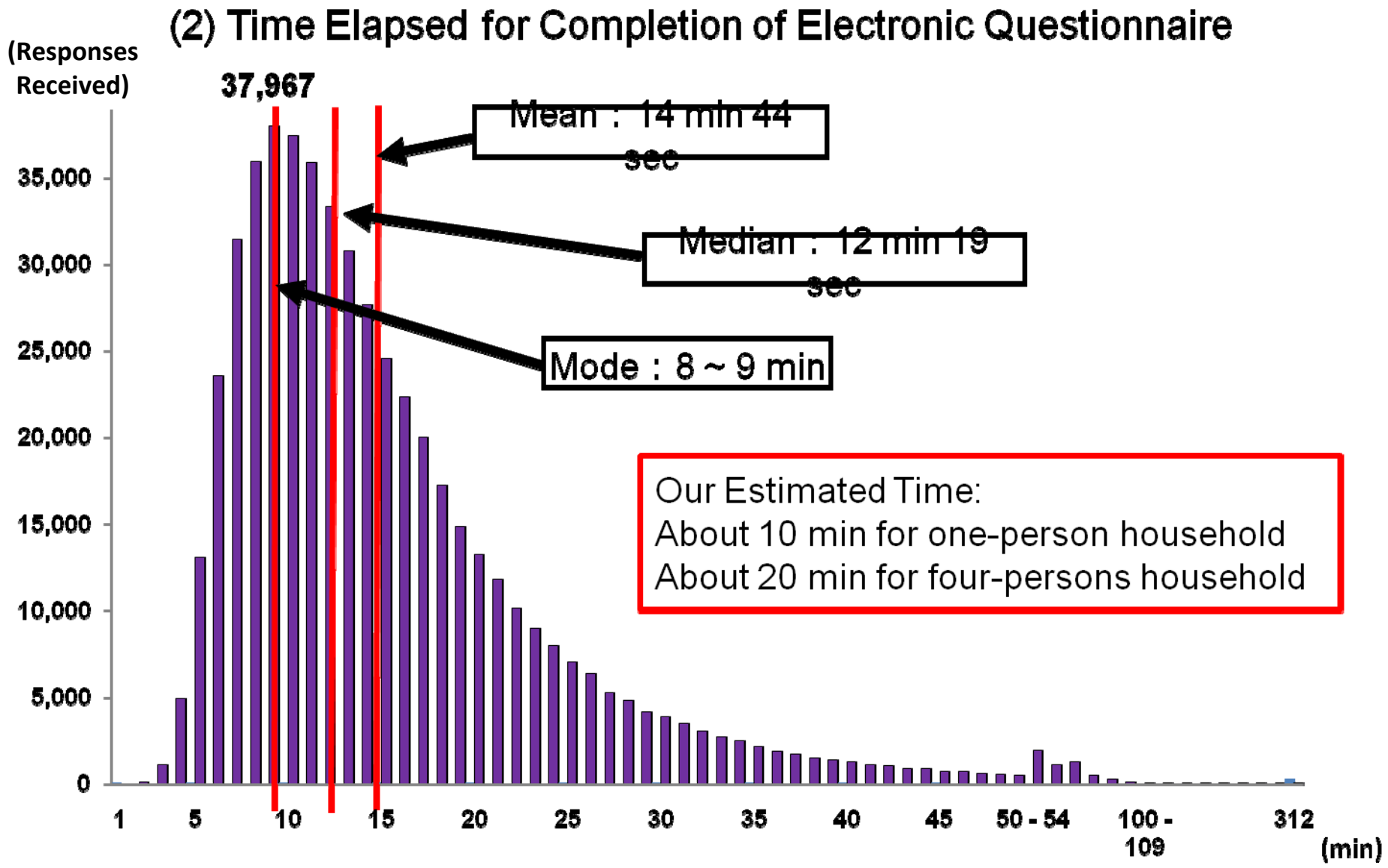
Internet Response Rate in Tokyo Area was **8.4%**
(Our Estimation was 5.0%)

Percentage of Households by Return Option (Tokyo Area)

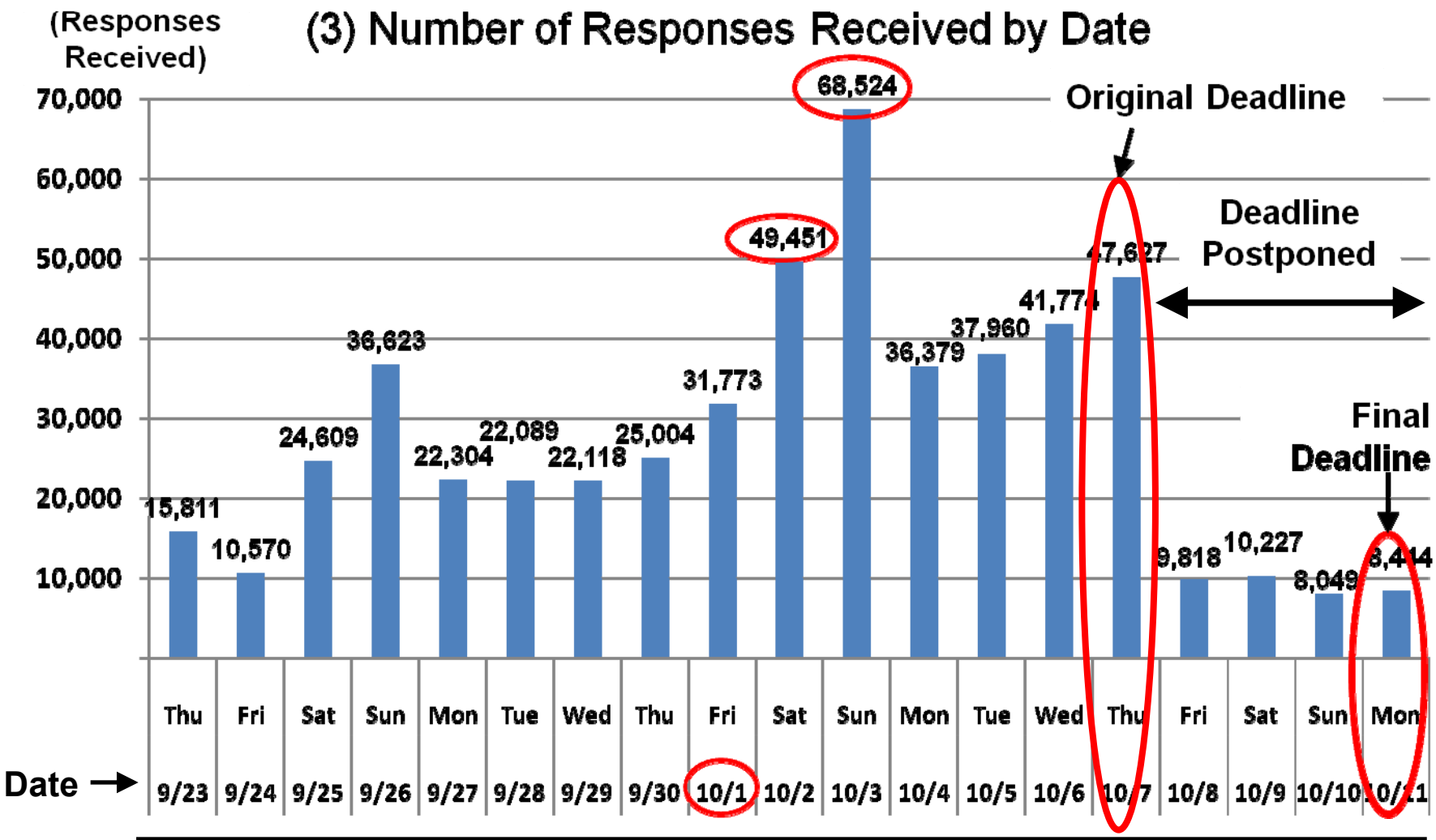
Return Option	The number of households (thousand)	Percentage
Internet	529	8.4%
Mail	3,728	59.2%
Enumerator	2,037	32.4%



3. Internet Response System – Outcomes

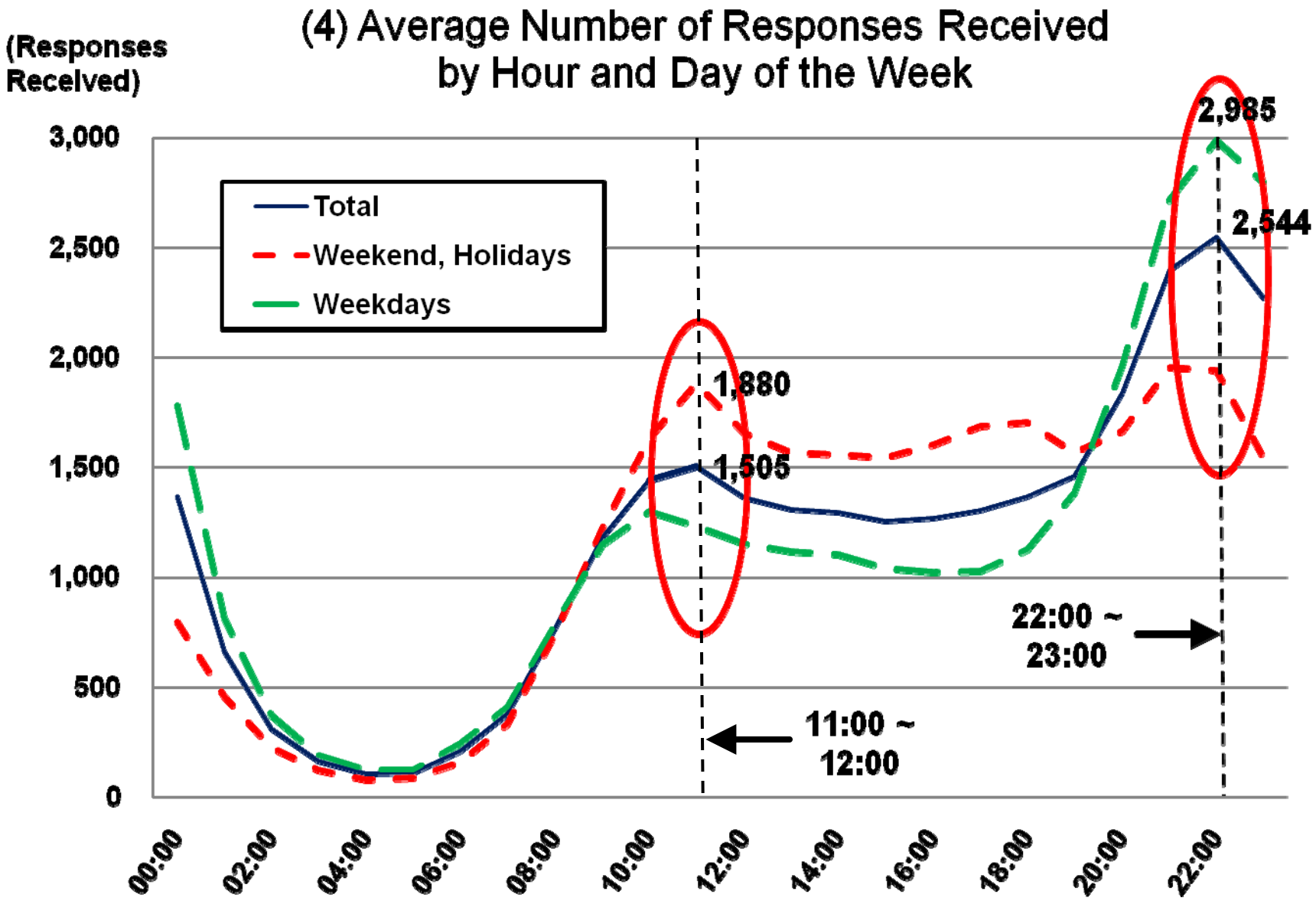


3. Internet Response System – Outcomes



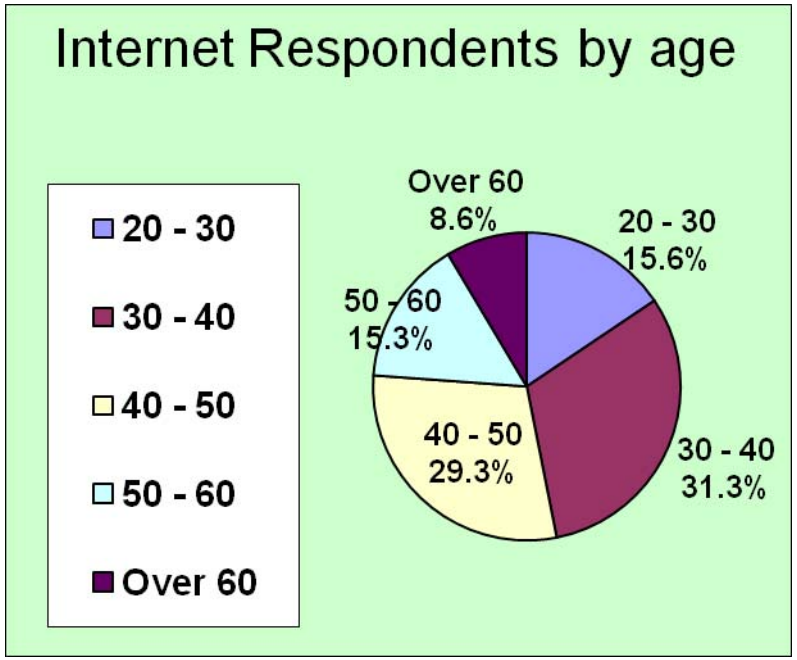
Until Wednesday 6 October, the deadline for internet response was announced as 24:00 of Sunday, 7 October. The deadline was, however, extended until Monday, 11 October to allow late submissions before the follow-up collection by enumerators begins.

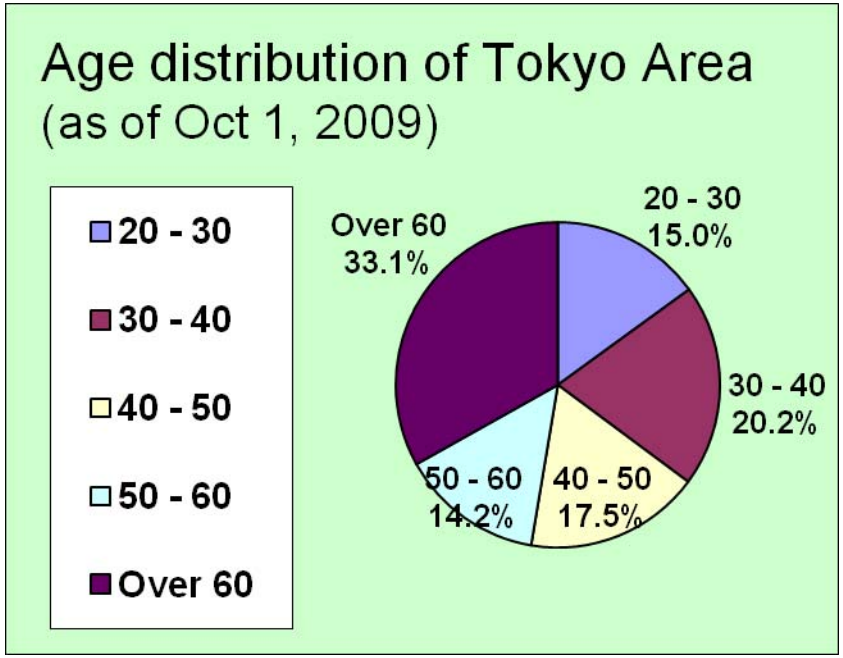
3. Internet Response System – Outcomes



3. Internet Response System – Outcomes

(5) Profiles of Internet Respondents by age (20 years old and above)

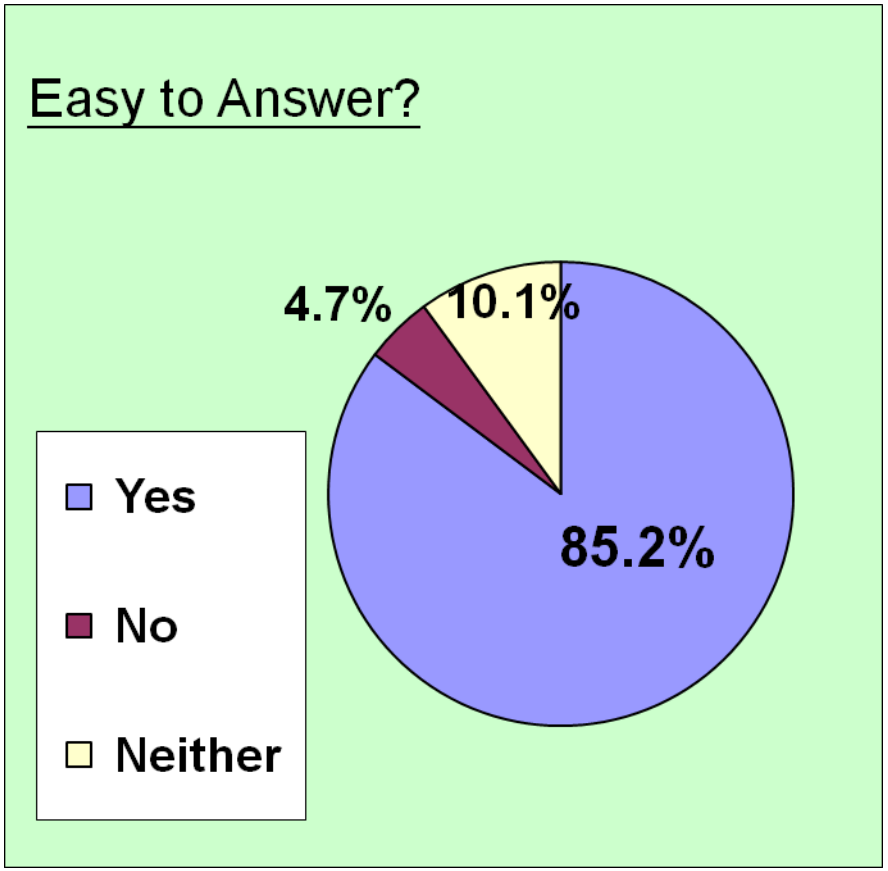


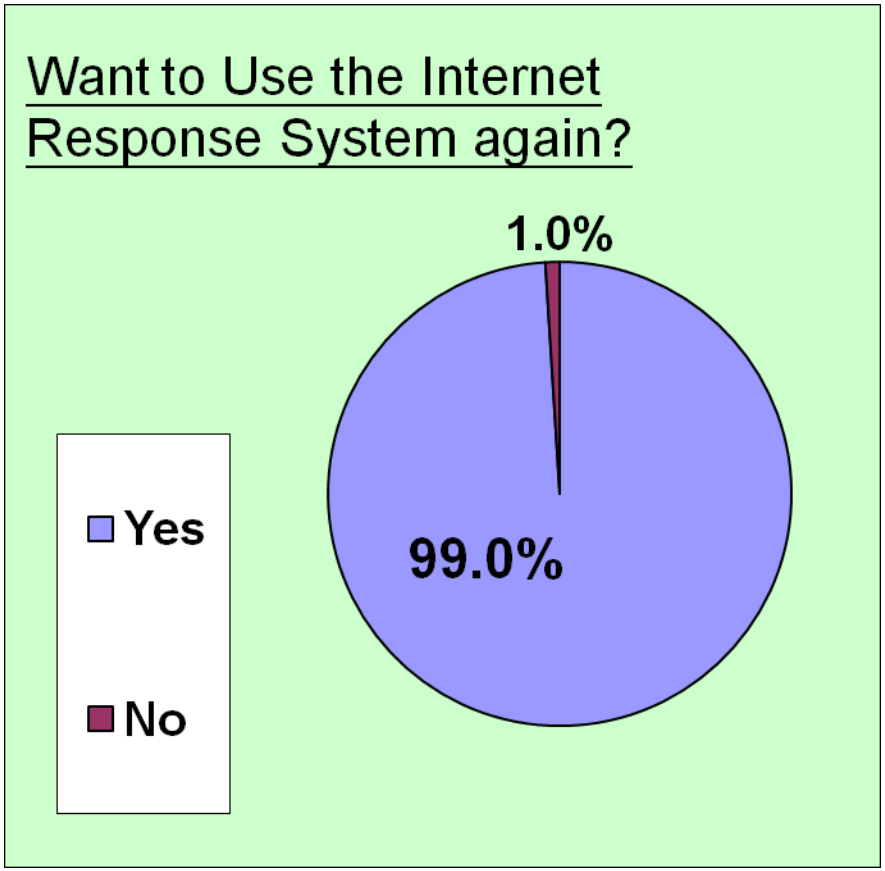


All internet respondents were asked a few questions about the internet response system. Although the responses were voluntary, more than 80% answered the questions.

3. Internet Response System – Outcomes

(6) General Opinions on the Internet Response System





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4. Conclusion and Future Tasks

- The Internet Response System for the 2010 Census was successful and very well received.
- In the 2015 Census, the Internet Response System could be extended to the wider area.
- For the 2015 Census, we have several challenges, such as:
  - Redesign the enumeration procedure (e.g., Rearrange return options)
  - Improve communication with enumerators (e.g., Sending up-to-date information to support effective follow-up collection)
  - Adapt to the new ICT environment (e.g., cloud computing, tablet PCs)

The views expressed here are the presenter's and not necessarily those of the Statistics Bureau of Japan.

(Appendix) Image of the Spiral Development Model