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Item 5 of the provisional agenda

Internet data collection

Development of Internet Survey Method in Japan

Note by the Statistics Bureau of Japan¹

I. Introduction

1. The Population Census of Japan has been conducted every 5 years since 1920, exception of 1945, when the census could not be taken due to World War II. Survey method of the census is enumeration survey, called traditional or conventional method. However, the situation surrounding the census is now changing, such as households in which members are absent from home in the daytime and their privacy concerns is increasing in recent years (especially 2005 Population Census) due to enforcement of The Act concerning Protection of Personal Information, increase of automatically locked apartments or condominiums and other reasons.

2. Due to these reasons, 2010 Population Census of Japan was introduced following three response methods, not changed distributing method (census documents including questionnaire was carried out by enumerators).

(1) Handing over questionnaires enclosed in sealed envelopes to enumerators.

(2) Putting the questionnaires in pre-addressed envelopes and mailing them to local governments (dropping them into post boxes).

(3) Introducing internet method in Tokyo-to as a model area.

¹ Prepared by Hideki Koizumi, Population Census Division.

II. Reasons why internet method was carried out in Tokyo-to

3. There were the following three reasons why internet method was carried out in Tokyo-to.

(1)The region was expected to be higher response rate by internet than other region

(2)The region was expected to be effective as a non-response problem.

(3) The region was in the neighborhood of Statistics Bureau.

4. As detail reason of (1), internet method must be dependent on network condition (communication speed, education about ICT and other factors). In Japan, Tokyo-to was the highest percentage of those who performed action about the internet (70.8%, Survey on Time Use and Leisure Activities, 2006) and other prefectures were lower tendency comparatively Tokyo-to. Therefore prefectures excluding Tokyo-to were expected that there were not sufficiently.

5. As detail reason of (2), internet method was expected to be effective as a non-response problem so that internet method had to be introduced to regions which had been changing the situation surrounding the census. Suppose internet method was introduced to regions where automatically locked apartments or condominiums didn't exist, that was not effective as a non-response problem, and it made survey method more complicated.

6. As detail reason of (3), The Population Census of Japan has been conducted through five channels which are Statistics Bureau, Prefectures (consists of 47), Municipalities (*shi*, *ku*, *machi* and *mura*, consists of 1,719), Supervisors and Enumerators. Therefore, model area was needed to satisfy the condition that officers of Statistics Bureau could go immediately when an unexpected trouble happened concerning with internet method at the fieldwork.

7. As mentioned previously internet method was carried out for the Tokyo-to whole region because of network condition, efficiency and geographical conditions. Households in Tokyo-to is about 6,400,000 (12.3% of whole households) and population in Tokyo-to is about 13 million (10.3% of whole population) so that introducing internet method in Tokyo-to as a model area in 2010 Population Census of Japan means large sample size survey with about 1/8 sampling fraction. In addition, largest sample size survey is Housing and Large Survey (conducted every 5 years and sample fraction is about 1/15) in Japan so that this program is the largest scale achievement.

III. Status of implementation of internet method

8. Internet method was carried out by the questionnaire of HTML form with automatically check program such as range check of year and month of birth (Japanese often use Japanese calendar besides A.D. and the calendar is tend to more complicated), compatibility check of a male and female number (between survey item "Number of household members by sex" and total number of "Sex" by household members), entry check, etc. described in JavaScript Language. In addition, unless all errors were canceled, households could not send their response.

Figure 1

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

文字サイズ: 太 中 小 お問い合わせ ヘルプ 中止する

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、又は女性がいずれもない場合は、0を入力するか、又は空白にしてください。)

男性の人数	女性の人数	世帯員の総数
<input type="text"/>	<input type="text"/>	0

● 調査票(紙)の第1面下部の「世帯の種類」調査票(紙)の第1面下部の「世帯の種類」

世帯の種類	一般の世帯 (一人世帯、会社等の 単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
世帯の種類	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

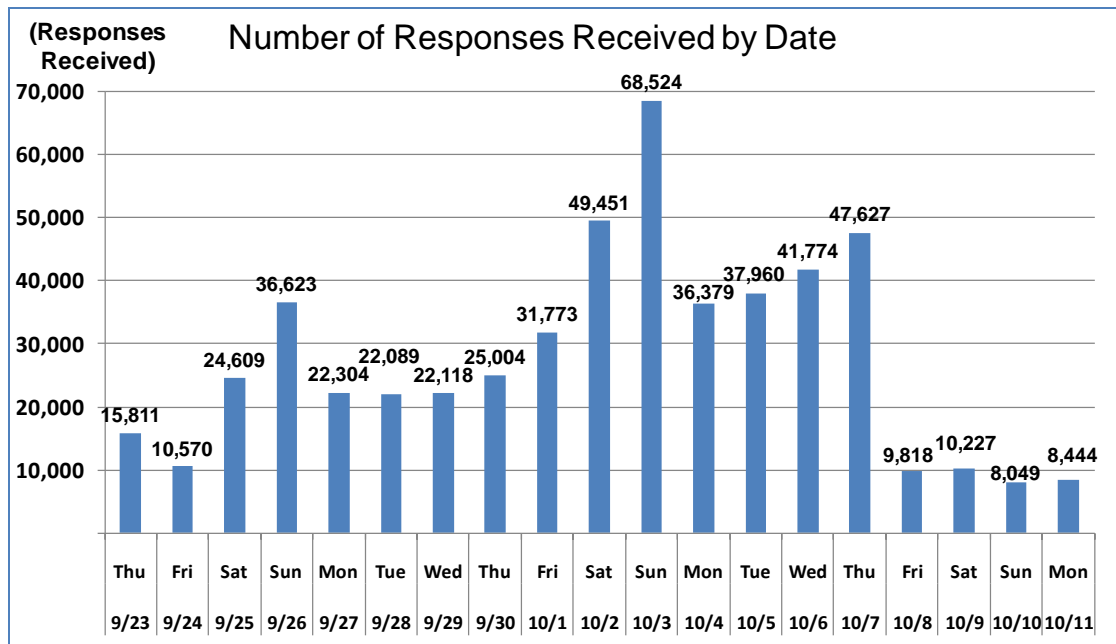
1項目め(全18項目)

世帯員 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 世帯 123

9. Moreover, households could not preserve their keying data temporarily because of consideration of that someone with malice who tried to see personal information using another household's ID might exist. This was concluded by the examination survey results by two kinds of questionnaires, one was questionnaire of PDF form and the other was of HTML form. Using HTML form was remarkably higher response rate than PDF in the examination survey in spite of existence of defect with temporary preservation.

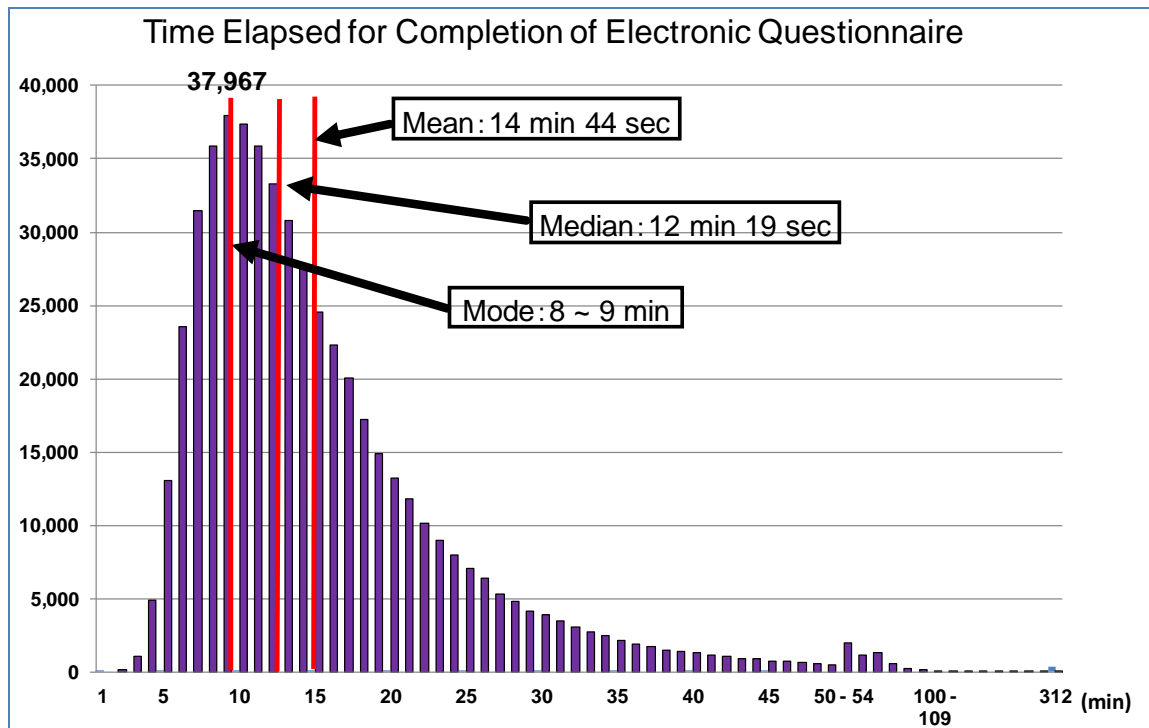
10. 2010 Population Census of Japan was taken as of midnight on October 1, 2010 and internet response period was taken as from September 23 to October 11. Response numbers by day are shown by Figure 2 and total response number is 529,154 (8.3% of Tokyo-to). There is a tendency that response number increases to Saturday and Sunday (holiday effect) and there is a gap between number of October 4 and of October 5 because October 4 was original deadline.

Figure 2



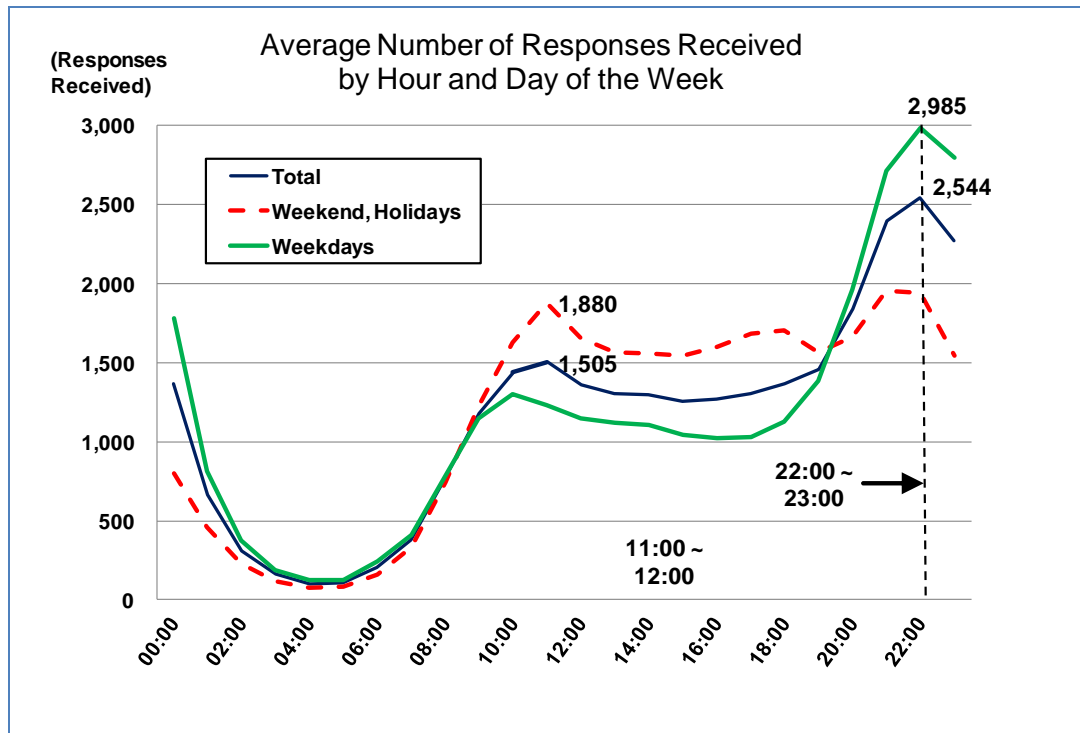
11. Average to fill questionnaire is 14 minutes and 44 seconds, the median is 12 minutes and 19 seconds, mode is 8 to 9 minutes, and approximately most households ended their response less than 20 minutes.

Figure 3



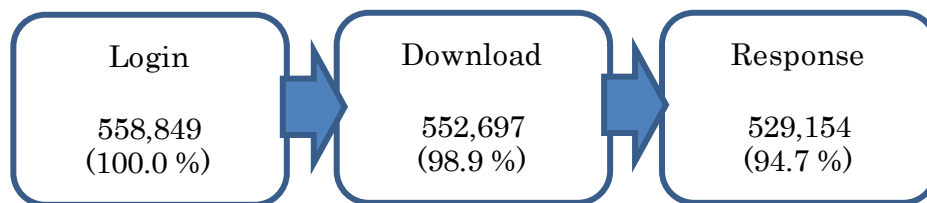
12. The following Figure shows that during 22:00 to 23:00 and 11:00 to 12:30 is concentrated responses.

Figure 4



13. Furthermore, the numbers of status by system situation were obtained by analyzing login information. 98.9% of whole households which could login to a system could download the questionnaire, and 94.7% of them were able to response.

Figure 5



IV. Evaluation

14. It was assumed to be 5% response rate of internet method because of following two reasons.

- (1) Before 2010 Population Census in Japan, two examination surveys were conducted with internet method and the response rate was 2.4% and 5.5%.
- (2) Publicity Activities was restricted so that Internet method was restricted to Tokyo-to.

15. In addition, voluntary questionnaire (not obligation to report) was carried out after the internet response. Number of response of voluntary questionnaire was 438,000 (82.9% of respondents), and responded to the questionnaire. Items are the followings.

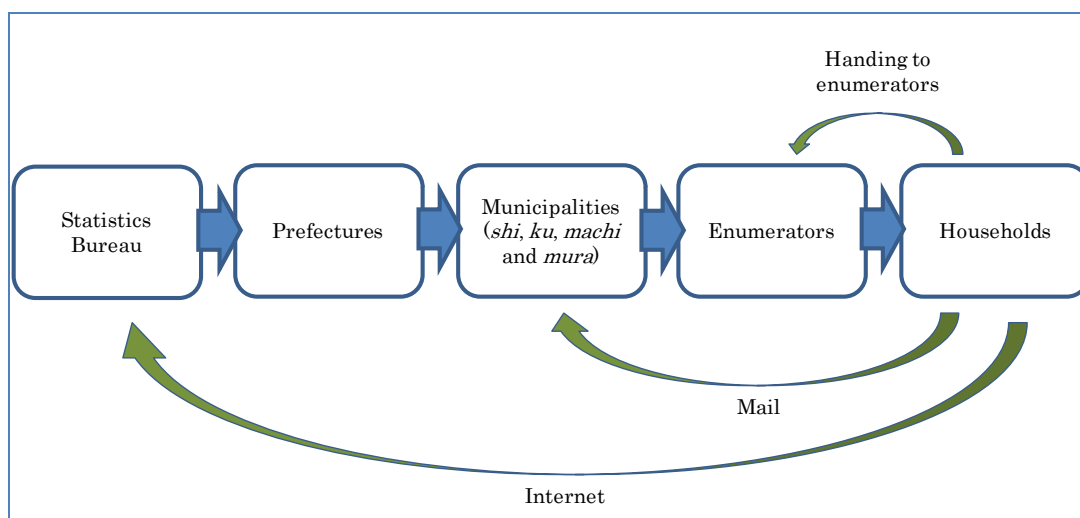
- (1) Ease to respond
- (2) Used call center or not
- (3) Would you like to response on the Internet next Population Census also?
- (4) Age and sex of Respondent

From the voluntary questionnaire result, 85.2% of respondents feel easily to response, and 2.2% of respondents used the call center. Furthermore, it is answered that he (or she) would like to answer 99.0% on the internet next Population Census also. These results imply that to continuing internet method can increase response rate and reduce respondent burden and decrease verify procedure in all channels (Statistics Bureau, Prefectures, Municipalities, Supervisors and Enumerators) through check program.

V. Examination Survey in this fiscal year

16. As mentioned previously, the Population Census of Japan is conducted every 5 years, and next Population Census will be conducted in 2015. To preparation of next Population Census, examination survey will be conducted in July 2012 for the purpose of promotion of internet method. (Sample size is 14 municipalities and about 19 thousand households)

17. There is a notice to promote internet method in Japan that the Population Census is conducted through five channels, therefore it is important to cooperation with prefectures, municipalities and enumerators more than former Population Census. Especially, while the response by internet method is transmitted to the Statistics Bureau directly, it is necessary to manage a response status in prefectures, municipalities and enumerators to follow-up approach if needed.

Figure 6

18. Therefore, examination survey is conducted two methods. One method is that it is separated with former internet response period and after other response (i.e. handing to enumerators or mail) period called step by step method. This method is expected to transmit information more efficient and effective, and also expected to lead internet method for households which can answer by internet and other methods, because that households cannot answer by other methods in former internet response period so that enumerators does not have questionnaire (document) , but only have document of internet guidance.

19. The other method is the same method of 2010 Population Census, which is, enumerators distribute questionnaire (document), and households answer by one of three methods (handing to enumerators, mail or internet method). To compare these two methods, areas of this examination survey are divided into two areas.

V. Conclusion and Future Plans

20. As mentioned previously, study to the next Population Census has been started and it is to promote internet method. In addition, this examination survey result will show internet method effect to non-response problem, which is, rate of number of households who answer by internet method and enumerator cannot contact per number of households which enumerator cannot contact.

21. Furthermore, various study of internet method will be taken in Japan because of large population (ranked tenth in the world), influence of expansion of internet response region, cooperation with local governments, and other factors.
