

Outline of the Survey of Household Economy

1. Survey Objectives

This survey is intended to grasp conditions surrounding consumption in terms of a) IT-related products, which have shown major increases in recent years, and b) expensive products and services with low frequency of consumption, in order to gain a more accurate understanding of personal consumption trends.

2. Universe and sampling

The survey unit is nationwide households in Japan, and sample households are selected based on the stratified two-stage random sampling.

a. Sampling of survey points

The entire country is stratified into districts and urban areas, and a total of approximately 3,000 survey points (enumeration districts of the Population Census) are selected from the sampled municipalities.

b. Sampling of households

Ten households are selected from each survey point, making a total of some 30,000 households.

One of the 10 selected households is a one-person household.

3. Survey items

The following items are surveyed:

a. Items related to the household conditions

(Questionnaire A)

- Items related to the household
- Ownership and utilization of equipments and services related to information technology (IT)
- Utilization of the Internet
- Utilization of electronic money etc.

b. Items related to consumption of specific goods and services each month

(Questionnaire B)

- Items related to the household (changes from previous month)
- Total purchase price over one month for specific goods and services
- Total expenditure of the household
- Use of the Internet in terms of consumption

4. Survey method

The survey is entrusted to a private survey agency. Questionnaires are delivered to the households by enumerators. Either collection by enumerators or mail-in by the households is used to collect the questionnaires.

From January 2002 to March 2006, enumerators collected the questionnaires of the first month, the 4th, the 8th and the 12th of the survey period, respectively. From April 2006 to May 2008, enumerators collected the questionnaires of the first month, the 6th and 11th of the survey period, respectively. From June 2008, enumerators collect the questionnaires of the first and 6th month of the survey period, respectively.

5. Survey period

The survey is conducted every month.

6. Rotation of sample households

The sample households are continuously surveyed for one year, and then substituted with other households.

All sample households are divided into 12 groups, which are rotated periodically. Accordingly, each group is replaced to another group after one year. Each group is made up of 2,500 households, which are one-twelfth of all sample households. The survey is conducted for one new group every month.

Any household that cannot continue with the survey due to moving or some other reason and for which the remaining survey period is one month or more is replaced by the substitute household for the remaining month(s).

Some households for which the survey had been started between May 2006 and March 2007, however, were surveyed for two years.

7. Tabulation

a. Major tabulation items

- Items related to the household
- Items related to ownership and utilization of equipments and services on information technology (IT)
- Items related to utilization of the Internet
- Items related to utilization of electronic money etc.
- Item related to monthly expenditure for specific goods and service per household

b. Process for tabulation

The data of questionnaires collected are tabulated at the National Statistics Center.

number of members in household members k and household p (one-person households by sex and age)

c. Estimate formula

The national and regional averages are estimated as follows. There are differences in the sampling ratios of the covered households by stratum. Therefore, the reciprocals of the sampling ratios are used as the multiplication ratios (linear multiplication ratios) for the tabulation of the items used for the estimation of the household ratios. Using these ratios, the correction coefficients are obtained from the results of the Labour Force Survey. The results are estimated using these two multiplication ratios namely the linear multiplication ratios and the correction coefficients.

However, in the case of single-person households, "1" was used for the linear multiplication ratio.

The quarterly and annual averages were obtained by calculating the simple mean values from the monthly findings

Monthly average values are estimated in the following formula.

- The number of households

$$N = \sum_i \sum_j \sum_k \alpha_{ij} C_{ik}$$

N : Number of households

α_{ij} : Linear multiplication ratio of districts i and city group j

C_{ik} : Correction coefficient by districts i and household members k (one-person households by sex and age)

- The total expenditure of monthly average

$$\bar{X} = \frac{\sum_i \sum_j \sum_k \sum_p X_{ijkp} \alpha_{ij} C_{ik}}{N}$$

\bar{X} : Total expenditure

X_{ijkp} : Sum of expenditure on given item by districts i, city group j,

d. Sampling error of estimate

The result of estimation of the sampling error for 2008 annual average by using monthly tabulated data is shown in the following table titled "Standard error and ratio of standard error".

The estimation method of the standard error is as follows.

i) The monthly standard error

The sample was calculated per month by the following formula, regard as it was compared of 12 sub-samples by the beginning month of survey.

$$\hat{\sigma}(\bar{X}) = \sqrt{\frac{1}{12 \times (12-1)} \sum_{w=1}^{12} (\hat{X}_w - \bar{X})^2}$$

$\hat{\sigma}(\bar{X})$: The monthly standard error

\hat{X}_w : Estimation value by w sub-sample

\bar{X} : Estimation value by all samples

ii) Standard error of yearly average

It was calculated by the following formula using the standard error of the monthly average.

$$\hat{\sigma}_{year}(\bar{X}) = \sqrt{\frac{\sum_{m=1}^{12} \hat{\sigma}(\bar{X})_m^2}{(12)^2}}$$

$\hat{\sigma}_{year}(\bar{X})$: Standard error of yearly average

$\hat{\sigma}(\bar{X})_m$: Standard error of m month

Calculation of the ratio of standard error is as follows.

Standard error ratio

$$r_X = \hat{\sigma}(\bar{X}) \div \bar{X} \times 100$$

e. Effective response rate

The effective response rate of 2008 is 65.1%.

8. Utilization of the results

The results of this survey are utilized as basic data for the Quarterly Estimation of GDP and estimation of Composite Index of Consumption Expenditure for the Family Income and Expenditure Survey.

9. Notes

The survey was conducted as a collection of statistical reports in compliance with the Statistical Reports Coordination Law (Law No. 148, 1952) in 2008.