

# Outline of the Survey of Household Economy

## I Outline of the Survey

### 1. Objectives

This survey is intended to grasp conditions surrounding consumption in terms of a) products related to information and communication technology, and b) expensive products and services with low frequency of consumption.

### 2. Universe and sampling

The survey unit is a household in Japan except institutional households. The sample households are selected as follows based on the 2010 Population Census:

#### a. Sampling Unit

The sample households are selected based on the two-stage stratified sampling method. The sampling units at two stages are namely, primarily the survey unit area composed of the Enumeration District (abbreviated as ED hereinafter) of the 2010 Population Census, and secondly the household.

#### b. Stratification and Allocation of Survey Unit Areas to Strata

i) Households in Japan are stratified by 9 districts and 4 city groups. The number of strata is 35 because there is no city corresponding to Major cities in the Shikoku district. The criteria of the districts and the city groups are as follows:

##### a) Districts

Hokkaido: Hokkaido;

Tohoku: Aomori-ken, Iwate-ken, Miyagi-ken, Akita-ken, Yamagata-ken and Fukushima-ken;

Kanto: Ibaraki-ken, Tochigi-ken, Gumma-ken, Saitama-ken, Chiba-ken, Tokyo-to, Kanagawa-ken, Yamanashi-ken and Nagano-ken;

Hokuriku: Niigata-ken, Toyama-ken, Ishikawa-ken and Fukui-ken;

Tokai: Gifu-ken, Shizuoka-ken, Aichi-ken and Mie-ken;

Kinki: Shiga-ken, Kyoto-fu, Osaka-fu, Hyogo-ken, Nara-ken and Wakayama-ken;

Chugoku: Tottori-ken, Shimane-ken, Okayama-ken, Hiroshima-ken and Yamaguchi-ken;

Shikoku: Tokushima-ken, Kagawa-ken, Ehime-ken and Kochi-ken;

Kyushu and Okinawa: Fukuoka-ken, Saga-ken, Nagasaki-ken, Kumamoto-ken, Oita-ken, Miyazaki-ken, Kagoshima-ken and Okinawa-ken

#### b) City groups

Major cities: designated cities under the article 252-19 of the Local Autonomy Law and Ku-areas (ward) of Tokyo;

Middle cities: cities with population of 150,000 or more, excluding Major cities;

Small cities A: cities with population of 50,000 more but less than 150,000;

Small cities B and Towns and villages: cities with population of less than 50,000, towns and villages

ii) The number of the survey unit areas is 3,000. The survey unit areas are allocated to each stratum in proportion to the number of households in the stratum.

#### c. Sampling the Survey Unit Areas

i) The same number of EDs are randomly selected from each stratum (abbreviated as standard area hereinafter) as a quarter of the number of survey unit areas allocated in b. The municipalities with selected standard areas are selected municipalities.

ii) When the standard area in a selected municipality is only one, the selected municipality is a survey block, which is the area one enumerator covers. When two or more, the selected municipality is divided into the same number of survey blocks as the number of the standard areas so that each block contains nearly equal number of households. The number of the survey blocks reaches 750 in Japan.

iii) Since the survey is conducted for five years in a survey block, the EDs contained in the blocks are divided into five areas, for each survey year so that each area contains nearly equal number of households.

iv) A divided survey block in iii) is divided again into four areas. An enumerator covers four survey unit areas in which the beginning month of the survey differs.

d. Sampling the Households

When sample households are selected from a survey unit area, the list of the households in a survey unit area is prepared from the basic resident register or the electoral roll. Ten households (of the two-or-more-person household is nine, one-person household is one) are randomly sampled from this list. As a result, 30,000 households in total are selected from 3,000 survey unit areas nationwide in Japan.

e. Rotation of sample

The sample households are continuously surveyed for 12 months, and then substituted with other households in another region divided in c. iii) and c. iv).

The sample households are divided into 12 groups. As a rule, one of the groups is replaced every month. Each group is composed of 2,500 households which are one-twelfth of all sample households.

Any household unable to continue with the survey due to moving or some other reasons is replaced by a substitute household for the remaining survey period if it is 3 months or more.

### 3. Survey items

The following items are surveyed:

- a. Items related to the household conditions (Questionnaire A)
  - Items related to the household
  - 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 the previous month)
  - Expenditure 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.

Enumerators collect the questionnaires of the first, 6th and 10th months of the survey period after January 2013, and collected in the first and 6th months from April 2008 to December 2012.

### 5. Survey period

The survey is conducted every month.

### 6. Tabulation

- a. Major tabulation items
  - Items related to the household
  - Items related to utilization of electronic money etc.
  - Item related to monthly expenditure for specific goods and services per household
  - Total expenditure using the Internet

- b. Process for tabulation

The data are tabulated at the National Statistics Center, Japan.

- 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.

In case of one-person households, the linear multiplication ratio is fixed at one.

The quarterly and annual averages are obtained by the simple mean of monthly averages.

Monthly averages 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

$\alpha_{ij}$  : Linear multiplication ratio of district  $i$  and city group  $j$

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

- The 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

$X_{ijkp}$  : Expenditure on given item by districts  $i$ , city group  $j$ , household members  $k$  and household  $p$  (one-person households by sex and age)

#### d. Sampling error of estimate

The result of the sampling error for 2013 annual average by using monthly tabulated data is shown in the table at the end titled “Standard error and standard error ratio”.

The estimation method of the standard errors is as follows:

##### i) Standard error of monthly average

Standard error of monthly average is calculated by the following formula, regarding as the sample was composed of 12 sub-samples by the beginning month of the survey:

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

$\hat{\sigma}(\bar{X})$  : Standard error of monthly average

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

$\bar{X}$  : Estimation value by all samples

##### ii) Standard error of annual average

Standard error of annual average is calculated by the following formula using the standard errors of 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 annual average

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

Calculation of the ratio of standard error is as follows:

$$r_x = \frac{\hat{\sigma}(\bar{X})}{\bar{X}} \times 100$$

$r_x$  : Ratio of standard error

#### e. Effective response rate

The effective response rate of 2013 is 71.5%.

## 7. Utilization of the results

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

## 8. Notes

The survey was conducted as a general statistical survey in compliance with the Statistics Act (Act No. 53, 2007).

Table Standard error and Standard error ratio

(All Japan)

2013 Average	All Households			Two-or-more-person Households			One-person Households		
	Expenditure (In Yen)	Standard error (In Yen)	Standard error ratio (%)	Expenditure (In Yen)	Standard error (In Yen)	Standard error ratio (%)	Expenditure (In Yen)	Standard error (In Yen)	Standard error ratio (%)
Number of persons per household (persons)	2.45	0.01	0.4	3.07	0.01	0.3	1.00	0.00	0.0
Number of earners per household (persons)	1.20	0.00	0.0	1.48	0.00	0.0	0.52	0.00	0.0
Age of household head (years old)	58.9	0.1	0.2	59.6	0.1	0.2	57.2	0.3	0.5
01 Mobile telephone (cell phone, PHS) charges	9,033	43	0.5	11,022	52	0.5	4,387	62	1.4
02 Telephone charges	2,420	10	0.4	2,724	9	0.3	1,708	19	1.1
03 Internet connection charges	1,868	10	0.5	2,119	8	0.4	1,280	26	2.0
04 CATV licence fees (viewing and internet connection)	809	7	0.9	982	7	0.7	407	13	3.2
05 CATV licence fees (viewing only)	424	5	1.2	460	4	0.9	341	13	3.8
06 Digital satellite broadcast viewing fees	281	4	1.4	317	3	0.9	195	9	4.6
07 Chests of drawers	123	9	7.3	150	11	7.3	58	16	27.6
08 Beds	252	15	6.0	271	14	5.2	208	43	20.7
09 Quilts	430	20	4.7	498	15	3.0	272	59	21.7
10 Desks and chairs (for work or study)	165	7	4.2	202	8	4.0	78	18	23.1
11 Sideboards	132	9	6.8	160	10	6.3	67	18	26.9
12 Drawing room suites	219	13	5.9	290	19	6.6	52	14	26.9
13 Musical instruments (including parts of instruments)	171	20	11.7	212	25	11.8	73	22	30.1
14 Men's suits	662	17	2.6	818	18	2.2	296	38	12.8
15 Women's one-piece dresses and suits	1,027	23	2.2	1,128	20	1.8	791	57	7.2
16 Japanese clothing (for men and women)	499	38	7.6	566	35	6.2	343	93	27.1
17 Wrist watches	309	37	12.0	340	20	5.9	236	114	48.3
18 Accessories	848	42	5.0	837	29	3.5	870	138	15.9
19 Automobiles (new)	11,916	461	3.9	14,720	431	2.9	5,375	1,245	23.2
20 Automobiles (second-hand)	3,109	227	7.3	3,565	165	4.6	2,038	583	28.6
21 Automotive insurance premium (compulsion)	971	15	1.5	1,166	15	1.3	514	36	7.0
22 Automotive insurance premium (option)	3,030	29	1.0	3,668	28	0.8	1,541	73	4.7
23 Motorized vehicles other than automobiles	329	33	10.0	383	32	8.4	205	82	40.0
24 Automotive maintenance and repairs	3,972	59	1.5	4,755	51	1.1	2,140	131	6.1
25 House-related equipping/ construction/ repair costs (interior)	3,506	160	4.6	4,224	175	4.1	1,831	364	19.9
26 House-related equipping/ construction/ repair costs (exterior)	5,079	188	3.7	5,994	180	3.0	2,946	417	14.2
27 Water supply and drainage construction costs	1,639	63	3.8	1,834	62	3.4	1,183	167	14.1
28 Gardens, trees and plants tending costs	757	24	3.2	799	27	3.4	661	56	8.5
29 Rents for dwelling	10,613	118	1.1	8,372	94	1.1	15,847	263	1.7
30 Rents for land	542	18	3.3	633	19	3.0	328	33	10.1
31 Refrigerators	699	21	3.0	833	23	2.8	388	48	12.4
32 Washing machines	511	24	4.7	575	15	2.6	361	69	19.1
33 Air conditioners	1,208	31	2.6	1,473	37	2.5	587	65	11.1
34 Sewing machines	63	5	7.9	70	5	7.1	47	13	27.7
35 Stereo phonograph sets	55	11	20.0	47	4	8.5	74	36	48.6
36 Personal computers	939	41	4.4	1,012	25	2.5	768	129	16.8
37 Personal computer peripherals and softwares	249	11	4.4	239	5	2.1	273	33	12.1
38 Mobile telephones (cell phone, PHS unit prices and entry fees)	448	14	3.1	540	13	2.4	231	37	16.0
39 Fax	50	2	4.0	61	2	3.3	23	5	21.7
40 TV	479	26	5.4	518	17	3.3	385	74	19.2
41 Digital broadcast tuner and antenna	33	3	9.1	32	2	6.3	35	9	25.7
42 Video recorders (DVD recorder, player, etc. are included)	188	10	5.3	208	7	3.4	142	27	19.0
43 Video games, hardwares & softwares	199	9	4.5	192	5	2.6	216	27	12.5
44 Cameras (excluding disposable cameras)	288	27	9.4	286	9	3.1	292	82	28.1
45 Video cameras	72	5	6.9	94	5	5.3	20	8	40.0
46 Car navigation systems	126	8	6.3	156	9	5.8	57	14	24.6
47 Dental treatment	1,865	37	2.0	2,262	45	2.0	936	65	6.9
48 Medical treatment (excluding dental)	4,605	31	0.7	5,552	33	0.6	2,393	50	2.1
49 Delivery fees	109	12	11.0	156	17	10.9	-	0	-
50 Hospital charges (excluding delivery)	1,676	37	2.2	2,125	46	2.2	626	66	10.5
51 Tuition (kindergarten-university) (public)	1,869	45	2.4	2,572	58	2.3	226	84	37.2
52 Tuition (kindergarten-university) (private)	7,050	150	2.1	9,795	203	2.1	634	141	22.2
53 Tutorial fees	2,667	36	1.3	3,735	51	1.4	171	21	12.3
54 Highway fares (using ETC)	968	10	1.0	1,209	10	0.8	404	19	4.7
55 Highway fares (excluding ETC)	101	3	3.0	119	2	1.7	59	6	10.2
56 Lesson fees, driving school	450	21	4.7	623	29	4.7	43	18	41.9
57 Airplane fares	965	31	3.2	1,115	33	3.0	613	61	10.0
58 Accommodation services	2,018	26	1.3	2,420	31	1.3	1,081	55	5.1
59 Package tour costs (domestic)	3,085	42	1.4	3,650	47	1.3	1,768	82	4.6
60 Package tour costs (overseas)	2,129	74	3.5	2,598	83	3.2	1,032	159	15.4
61 Rental fees for sports facilities	1,082	14	1.3	1,243	13	1.0	707	29	4.1
62 Wedding ceremony and reception costs	1,259	89	7.1	1,737	124	7.1	145	91	62.8
63 Funeral service costs	3,000	127	4.2	3,449	139	4.0	1,950	296	15.2
64 Religion-related costs	2,186	76	3.5	2,277	74	3.2	1,974	202	10.2
(Reference) Households filling in total expenditure									
Total expenditure	287,024	911	0.3	332,675	869	0.3	178,331	1,634	0.9
Remittance	4,249	80	1.9	4,926	76	1.5	2,641	213	8.1
Money gifts	8,335	120	1.4	9,169	125	1.4	6,351	254	4.0
Total expenditure on goods and services ordered over the Internet	5,256	74	1.4	5,801	49	0.8	3,963	208	5.2

Monthly expenditure per household by All Japan (including agricultural, forestry, and fisheries households)