

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 which is based on the 2010 Population Census.

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 institution. Enumerators will leave questionnaires with target households for them to answer, which will be collected later on. (On-line submission is also used.) Questionnaires shall be collected by enumerators, mailed by households, or answered through an on-line survey system by households.

For paper questionnaires submission, as a rule, enumerators collect questionnaires in the first and sixth months of the survey and households mail private survey institution in the other months. Questionnaires are distributed when cooperation for the survey is requested and questionnaires of the previous month are collected. Also, questionnaires are collected in the beginning of the following month of the survey.

5. Survey period

The survey is conducted every month.

6. Tabulation

a. Major tabulation items

- Items related to the household
- Use state related to electronic money
- Purchase situation using the internet
- Amount paid for specific goods and services
- Total amount paid by the household
- Amount paid purchase of goods and services through the internet (internet shopping)

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

α_{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 2016 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 2016 is 64.1%.

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 (Specific goods and services)

(All Japan)

2016 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)	2.36	0.00	0.0	3.01	0.00	0.0	1.00	0.00	0.0
Number of earners per household (persons)	1.16	0.00	0.0	1.46	0.00	0.0	0.55	0.01	1.8
Age of household head (years old)	59.6	0.1	0.2	60.5	0.1	0.2	57.8	0.3	0.5
Total expenditure on specific goods and services (44 items)	62,821	513	0.8	74,181	509	0.7	38,953	1,272	3.3
01 Mobile telephone (cell phone, PHS) charges	9,816	55	0.6	12,012	70	0.6	5,204	79	1.5
02 Internet connection charges	2,907	12	0.4	3,411	13	0.4	1,848	30	1.6
03 Chests of drawers	69	9	13.0	85	6	7.1	36	26	72.2
04 Beds	215	21	9.8	260	15	5.8	121	51	42.1
05 Quilts	314	11	3.5	381	12	3.1	173	21	12.1
06 Sideboards	85	6	7.1	107	8	7.5	40	10	25.0
07 Drawing room suites	211	18	8.5	244	14	5.7	140	49	35.0
08 Musical instruments (including parts of instruments)	120	13	10.8	154	17	11.0	49	14	28.6
09 Men's suits	552	21	3.8	663	16	2.4	319	58	18.2
10 Women's one-piece dresses and suits	730	18	2.5	846	18	2.1	487	38	7.8
11 Japanese clothing (for men and women)	291	20	6.9	382	28	7.3	100	19	19.0
12 Wrist watches	299	51	17.1	267	20	7.5	364	139	38.2
13 Accessories	566	38	6.7	567	24	4.2	566	101	17.8
14 Automobiles (new)	9,255	384	4.1	11,297	389	3.4	4,958	822	16.6
15 Automobiles (second-hand)	2,683	239	8.9	3,157	143	4.5	1,687	735	43.6
16 Automotive insurance premium (compulsion)	753	12	1.6	892	12	1.3	460	30	6.5
17 Automotive insurance premium (option)	2,669	34	1.3	3,215	32	1.0	1,522	86	5.7
18 Motorized vehicles other than automobiles	298	46	15.4	256	24	9.4	384	131	34.1
19 Automotive maintenance and repairs	3,427	54	1.6	4,103	51	1.2	2,006	119	5.9
20 House-related equipping/ construction/ repair costs	6,320	189	3.0	7,572	216	2.9	3,692	371	10.0
21 Water supply and drainage construction costs	1,079	52	4.8	1,255	53	4.2	710	108	15.2
22 Gardens, trees and plants tending costs	603	42	7.0	575	21	3.7	663	127	19.2
23 Refrigerators	582	20	3.4	726	23	3.2	279	37	13.3
24 Vacuum cleaners	306	9	2.9	359	9	2.5	194	17	8.8
25 Washing machines	454	15	3.3	579	18	3.1	191	28	14.7
26 Air conditioners	1,023	34	3.3	1,220	35	2.9	608	80	13.2
27 Personal computers (excluding peripherals and softwares)	645	27	4.2	808	23	2.8	303	69	22.8
28 Mobile telephones unit prices (cell phone, PHS)	665	22	3.3	837	19	2.3	303	52	17.2
29 TV	463	21	4.5	542	20	3.7	298	50	16.8
30 Video recorders (DVD or Blu-ray recorder, player, etc.)	157	9	5.7	167	7	4.2	136	24	17.6
31 Video game hardwares (excluding softwares)	72	6	8.3	76	4	5.3	64	16	25.0
32 Cameras (excluding disposable cameras)	158	15	9.5	156	9	5.8	161	45	28.0
33 Video cameras	31	4	12.9	40	3	7.5	13	9	69.2
34 Delivery fees	89	10	11.2	132	14	10.6	-	0	-
35 Hospital charges (excluding delivery)	1,748	40	2.3	2,176	42	1.9	849	73	8.6
36 Lesson fees, driving school	397	33	8.3	503	28	5.6	172	78	45.3
37 Airplane fares	751	31	4.1	840	28	3.3	565	76	13.5
38 Accommodation services	1,775	26	1.5	2,174	27	1.2	940	59	6.3
39 Package tour costs (domestic)	2,465	43	1.7	3,006	44	1.5	1,328	90	6.8
40 Package tour costs (overseas)	1,476	73	4.9	1,658	77	4.6	1,093	165	15.1
41 Rental fees for sports facilities	934	18	1.9	1,069	17	1.6	651	39	6.0
42 Wedding ceremony and reception costs	718	74	10.3	1,040	105	10.1	40	35	87.5
43 Funeral service costs	3,015	165	5.5	2,798	121	4.3	3,473	424	12.2
44 Religion-related costs	1,639	80	4.9	1,578	67	4.2	1,768	206	11.7
(Reference) Households filling in total expenditure									
Total expenditure	273,334	909	0.3	317,155	844	0.3	180,701	1,649	0.9
Foods	71,959	223	0.3	84,036	191	0.2	46,435	257	0.6
Remittance and Money gifts	14,798	169	1.1	16,325	176	1.1	11,562	307	2.7

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

Table Standard error and Standard error ratio (Goods and Services Ordered over the Internet)(Continued)

(All Japan)

2016 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)	2.36	0.00	0.0	3.00	0.00	0.0	1.00	0.00	0.0
Number of earners per household (persons)	1.16	0.00	0.0	1.45	0.00	0.0	0.54	0.01	1.9
Age of household head (years old)	59.7	0.1	0.2	60.6	0.1	0.2	58.0	0.3	0.5
Total expenditure on goods and services ordered over the Internet	7,448	99	1.3	8,535	95	1.1	5,150	200	3.9
50 Gift items	335	9	2.7	398	8	2.0	202	19	9.4
For gift	7,113	96	1.3	8,137	93	1.1	4,948	196	4.0
51 Foods	765	15	2.0	959	15	1.6	354	29	8.2
52 Beverages	200	5	2.5	234	4	1.7	127	12	9.4
53 Deliveries	49	2	4.1	57	2	3.5	30	5	16.7
54 Home electronics	582	27	4.6	665	19	2.9	407	73	17.9
55 Furnitures	198	21	10.6	210	10	4.8	174	58	33.3
56 Men's clothings	186	8	4.3	187	6	3.2	184	23	12.5
57 Women's clothings	351	9	2.6	441	10	2.3	160	16	10.0
58 Footwears and other clothings	214	5	2.3	273	5	1.8	89	11	12.4
59 Medicines	75	5	6.7	82	2	2.4	59	11	18.6
60 Health foods	278	6	2.2	316	5	1.6	199	15	7.5
61 Cosmetics	300	6	2.0	363	6	1.7	167	12	7.2
62 Private transportation	129	7	5.4	158	8	5.1	68	13	19.1
63 Books and other reading materials	196	10	5.1	195	4	2.1	199	29	14.6
64 Software (music, video, personal computer, TV)	254	12	4.7	229	5	2.2	307	38	12.4
65 Digital books	64	4	6.3	43	2	4.7	108	12	11.1
66 Download music, video, applications	84	13	15.5	51	2	3.9	153	39	25.5
67 Insurance	322	12	3.7	380	13	3.4	198	25	12.6
68 Accommodation services, fares, package tours(payment on the Internet)	1,116	41	3.7	1,299	43	3.3	728	91	12.5
69 Accommodation services, fares, package tours(payment on-site)	468	21	4.5	573	21	3.7	245	48	19.6
70 Tickets	303	14	4.6	314	8	2.5	281	43	15.3
71 Other goods and services	981	26	2.7	1,109	23	2.1	710	59	8.3

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