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 resister 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.
- Purchase situation using the Internet

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
- Monthly expenditure on goods and

services ordered over the Internet per household

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.

Questionnaires are distributed when cooperation for the survey is requested and questionnaires of the previous month are collected. 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. 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
- 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

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

$\overline{X}$: 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 2017 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:

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

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

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

$\overline{X}$: 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:

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

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

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

Calculation of the ratio of standard error is as follows:

$$r_X = \frac{\hat{\sigma}(\overline{X})}{\overline{X}} \times 100$$

r_X : Ratio of standard error

e. Effective response rate

The effective response rate of 2017 is 70.6%.

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)

2017 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)	2.34	0.00	0.0	2.99	0.00	0.0	1.00	0.00	0.0
Number of earners per household (persons)	1.17	0.00	0.0	1.47	0.00	0.0	0.56	0.00	0.0
Age of household head (years old)	59.9	0.1	0.2	60.8	0.0	0.0	58.1	0.3	0.5
Total expenditure on specific goods and services (50 items)	76,662	693	0.9	94,009	647	0.7	40,784	1,625	4.0
01 Smartphone (cell phone, PHS) charges	10,656	44	0.4	12,990	49	0.4	5,827	72	1.2
02 Internet connection charges	3,185	13	0.4	3,753	13	0.3	2,010	31	1.5
03 Mobile telephones unit prices (cell phone, PHS)	864	25	2.9	1,028	20	1.9	524	71	13.5
04 Airplane fares	914	43	4.7	989	27	2.7	759	125	16.5
05 Accommodation services	1,793	31	1.7	2,221	33	1.5	908	58	6.4
06 Package tour costs (domestic)	2,096	39	1.9	2,528	46	1.8	1,203	72	6.0
07 Package tour costs (overseas)	1,413	71	5.0	1,615	65	4.0	993	178	17.9
08 Tuition (kindergarten-university) (public)	1,284	32	2.5	1,892	46	2.4	27	16	59.3
09 Tuition (kindergarten-university) (private)	5,538	120	2.2	8,060	159	2.0	319	119	37.3
10 Tutorial fees	1,947	33	1.7	2,800	45	1.6	183	43	23.5
11 Lesson fees, driving school	421	19	4.5	611	26	4.3	27	11	40.7
12 Rental fees for sports facilities	852	13	1.5	986	14	1.4	574	24	4.2
13 Men's suits	535	21	3.9	652	14	2.1	291	64	22.0
14 Women's one-piece dresses and suits	638	16	2.5	728	16	2.2	451	35	7.8
15 Japanese clothing (for men and women)	348	31	8.9	348	28	8.0	349	72	20.6
16 Wrist watches	253	18	7.1	287	18	6.3	181	40	22.1
17 Accessories	461	24	5.2	486	20	4.1	411	64	15.6
18 Delivery fees	109	11	10.1	160	16	10.0	3	2	66.7
19 Hospital charges (excluding delivery)	1,544	34	2.2	1,946	34	1.7	715	77	10.8
20 Chests of drawers	84	6	7.1	107	7	6.5	36	9	25.0
21 Beds	170	10	5.9	218	11	5.0	72	23	31.9
22 Quilts	351	19	5.4	399	11	2.8	252	56	22.2
23 Desks and chairs (for work or study)	145	24	16.6	128	7	5.5	180	72	40.0
24 Sideboards	90	6	6.7	111	8	7.2	45	12	26.7
25 Dining tables and chairs	121	10	8.3	141	8	5.7	78	26	33.3
26 Drawing room suites	172	10	5.8	221	14	6.3	69	16	23.2
27 Musical instruments (including parts of instruments)	157	18	11.5	175	16	9.1	120	42	35.0
28 Refrigerators	584	28	4.8	718	20	2.8	307	68	22.1
29 Vacuum cleaners	325	12	3.7	366	9	2.5	240	34	14.2
30 Washing machines	505	24	4.8	602	17	2.8	306	70	22.9
31 Air conditioners	1,048	35	3.3	1,234	37	3.0	664	79	11.9
32 Personal computers (including tablet devices, excluding peripherals and software)	654	25	3.8	810	25	3.1	333	58	17.4
33 TV	509	45	8.8	565	21	3.7	393	128	32.6
34 Video recorders (DVD or Blu-ray recorder, player, etc.)	164	11	6.7	170	6	3.5	151	33	21.9
35 Video game hardware (excluding software)	152	13	8.6	167	5	3.0	121	39	32.2
36 Cameras (including lenses only, excluding disposable cameras)	146	11	7.5	175	9	5.1	85	28	32.9
37 Video cameras	29	3	10.3	39	3	7.7	8	5	62.5
38 House-related equipping/ construction/ repair costs	5,620	199	3.5	6,611	206	3.1	3,573	493	13.8
39 Water supply and drainage construction costs	1,894	68	3.6	2,278	82	3.6	1,100	124	11.3
40 Gardens, trees and plants tending costs	512	21	4.1	532	22	4.1	471	45	9.6
41 Automobiles (new)	10,546	459	4.4	13,563	422	3.1	4,308	1,086	25.2
42 Automobiles (second-hand)	3,300	345	10.5	3,801	166	4.4	2,265	1,010	44.6
43 Automotive insurance premium (compulsion)	775	17	2.2	924	14	1.5	466	37	7.9
44 Automotive insurance premium (option)	2,733	35	1.3	3,311	32	1.0	1,537	83	5.4
45 Motorized vehicles other than automobiles	201	24	11.9	240	24	10.0	121	49	40.5
46 Automotive maintenance and repairs	3,101	52	1.7	3,618	38	1.1	2,030	139	6.8
47 Wedding ceremony and reception costs	845	83	9.8	1,133	94	8.3	247	148	59.9
48 Funeral service costs	2,933	130	4.4	3,185	121	3.8	2,412	308	12.8
49 Religion-related costs	1,500	62	4.1	1,522	60	3.9	1,454	170	11.7
50 Remittance	2,450	67	2.7	2,868	58	2.0	1,585	149	9.4

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)

(All Japan)

2017 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)	2.34	0.00	0.0	2.99	0.00	0.0	1.00	0.00	0.0
Number of earners per household (persons)	1.17	0.00	0.0	1.47	0.00	0.0	0.56	0.00	0.0
Age of household head (years old)	59.9	0.1	0.2	60.8	0.0	0.0	58.1	0.3	0.5
Total expenditure on goods and services ordered over the Internet	9,307	137	1.5	10,586	91	0.9	6,662	348	5.2
50 Gift items	398	13	3.3	470	9	1.9	250	33	13.2
For gift	8,909	135	1.5	10,116	88	0.9	6,412	345	5.4
51 Foods	887	19	2.1	1,111	19	1.7	422	34	8.1
52 Beverages	240	5	2.1	295	5	1.7	127	13	10.2
53 Deliveries	101	6	5.9	109	3	2.8	83	19	22.9
54 Home electronics	638	38	6.0	704	18	2.6	503	107	21.3
55 Furnitures	224	19	8.5	237	8	3.4	197	50	25.4
56 Men's clothings	227	9	4.0	249	6	2.4	182	21	11.5
57 Women's clothings	504	12	2.4	581	10	1.7	346	36	10.4
58 Footwears and other clothings	247	7	2.8	309	5	1.6	119	17	14.3
59 Medicines	78	3	3.8	91	2	2.2	53	7	13.2
60 Health foods	353	8	2.3	427	7	1.6	201	13	6.5
61 Cosmetics	331	7	2.1	408	5	1.2	171	17	9.9
62 Private transportation	242	20	8.3	244	12	4.9	239	52	21.8
63 Books and other reading materials	211	6	2.8	227	4	1.8	178	16	9.0
64 Software (music, video, personal computer, TV game)	339	19	5.6	285	5	1.8	451	58	12.9
65 Digital books	70	5	7.1	53	2	3.8	106	15	14.2
66 Download music, video, applications	165	20	12.1	69	2	2.9	363	61	16.8
67 Insurance	352	12	3.4	422	12	2.8	206	30	14.6
68 Accommodation services, fares, package tours (payment on the Internet)	1,372	41	3.0	1,672	43	2.6	753	103	13.7
69 Accommodation services, fares, package tours (payment on-site)	641	26	4.1	757	23	3.0	400	60	15.0
70 Tickets	393	17	4.3	425	9	2.1	328	48	14.6
71 Other goods and services	1,293	40	3.1	1,441	25	1.7	985	112	11.4

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