

# 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 2015 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 2015 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 2015 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
- Use state related to electronic money
- 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
- Expenditure over one month for goods

and services through the internet

### 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

$\alpha_{ij}$  : 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 2019 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 2019 is 71.3%.

## 7. Utilization of the results

The results of this survey are utilized as basic data for the Quarterly Estimates of GDP and the Household Consumption Trend Index 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)

2019 Average	Total 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)	2.31	0.00	0.0	2.98	0.00	0.0	1.00	0.00	0.0
Number of earners per household (persons)	1.18	0.00	0.0	1.49	0.00	0.0	0.55	0.00	0.0
Age of household head (years old)	59.6	0.1	0.2	60.5	0.1	0.2	57.7	0.2	0.3
Total expenditure on specific goods and services (50 items)	79,944	762	1.0	98,936	738	0.7	42,547	1,702	4.0
01 Smartphone (cell phone, PHS) charges	10,704	38	0.4	13,243	44	0.3	5,707	59	1.0
02 Internet connection charges	3,437	16	0.5	4,038	14	0.3	2,255	31	1.4
03 Mobile telephones unit prices (cell phone, PHS)	1,062	32	3.0	1,294	27	2.1	607	71	11.7
04 Airplane fares	1,076	35	3.3	1,307	36	2.8	623	81	13.0
05 Accommodation services	2,218	33	1.5	2,702	35	1.3	1,266	72	5.7
06 Package tour costs (domestic)	2,026	38	1.9	2,444	43	1.8	1,202	66	5.5
07 Package tour costs (overseas)	1,576	75	4.8	1,925	87	4.5	888	152	17.1
08 Tuition (kindergarten-university) (public)	1,387	27	1.9	2,071	38	1.8	42	20	47.6
09 Tuition (kindergarten-university) (private)	5,489	115	2.1	8,065	174	2.2	409	96	23.5
10 Tutorial fees	2,357	35	1.5	3,471	45	1.3	168	49	29.2
11 Lesson fees, driving school	428	37	8.6	574	29	5.1	142	91	64.1
12 Rental fees for sports facilities	1,002	19	1.9	1,117	15	1.3	776	51	6.6
13 Men's suits	560	19	3.4	698	17	2.4	286	46	16.1
14 Women's one-piece dresses and suits	660	16	2.4	776	16	2.1	431	32	7.4
15 Japanese clothing (for men and women)	226	18	8.0	262	20	7.6	155	37	23.9
16 Wrist watches	438	68	15.5	363	24	6.6	585	200	34.2
17 Accessories	602	36	6.0	586	26	4.4	633	85	13.4
18 Delivery fees	103	11	10.7	153	16	10.5	5	6	120.0
19 Hospital charges (excluding delivery)	1,667	36	2.2	2,111	41	1.9	793	72	9.1
20 Chests of drawers	80	6	7.5	99	6	6.1	41	12	29.3
21 Beds	222	14	6.3	270	14	5.2	128	34	26.6
22 Quilts	317	15	4.7	378	12	3.2	197	39	19.8
23 Desks and chairs (for work or study)	115	8	7.0	141	7	5.0	66	17	25.8
24 Sideboards	89	8	9.0	111	7	6.3	46	19	41.3
25 Dining tables and chairs	122	8	6.6	167	11	6.6	35	7	20.0
26 Drawing room suites	205	24	11.7	239	14	5.9	140	67	47.9
27 Musical instruments (including parts of instruments)	147	18	12.2	176	16	9.1	89	47	52.8
28 Refrigerators	698	23	3.3	908	27	3.0	286	42	14.7
29 Vacuum cleaners	302	8	2.6	364	8	2.2	179	16	8.9
30 Washing machines	619	29	4.7	739	24	3.2	383	77	20.1
31 Air conditioners	1,227	32	2.6	1,548	36	2.3	596	63	10.6
32 Personal computers (including tablet devices, excluding peripherals and software)	912	51	5.6	1,035	24	2.3	672	147	21.9
33 TV	663	28	4.2	767	25	3.3	461	73	15.8
34 Video recorders (DVD or Blu-ray recorder, player, etc.)	155	7	4.5	181	7	3.9	103	15	14.6
35 Video game hardware (excluding software)	114	10	8.8	116	4	3.4	110	28	25.5
36 Cameras (including lenses only, excluding disposable cameras)	179	33	18.4	165	11	6.7	205	91	44.4
37 Video cameras	28	7	25.0	31	3	9.7	23	18	78.3
38 House-related equipping/ construction/ repair costs	6,416	243	3.8	7,953	267	3.4	3,405	407	12.0
39 Water supply and drainage construction costs	1,709	66	3.9	2,162	80	3.7	821	130	15.8
40 Gardens, trees and plants tending costs	506	27	5.3	521	22	4.2	478	71	14.9
41 Automobiles (new)	10,887	593	5.4	13,862	468	3.4	4,996	1,417	28.4
42 Automobiles (second-hand)	3,148	200	6.4	4,011	170	4.2	1,448	547	37.8
43 Automotive insurance premium (compulsion)	693	13	1.9	855	12	1.4	374	32	8.6
44 Automotive insurance premium (option)	2,527	30	1.2	3,162	33	1.0	1,277	63	4.9
45 Motorized vehicles other than automobiles	234	34	14.5	286	26	9.1	132	97	73.5
46 Automotive maintenance and repairs	2,877	55	1.9	3,522	45	1.3	1,610	132	8.2
47 Wedding ceremony and reception costs	748	75	10.0	1,053	109	10.4	146	62	42.5
48 Funeral service costs	3,261	171	5.2	2,974	129	4.3	3,827	417	10.9
49 Religion-related costs	1,443	82	5.7	1,326	64	4.8	1,676	202	12.1
50 Remittance	2,283	60	2.6	2,618	50	1.9	1,624	123	7.6

Table Standard error and Standard error ratio (Goods and services ordered over the Internet)

(All Japan)

2019 Average	Total 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 (%)
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Number of earners per household (persons)	1.18	0.00	0.0	1.49	0.00	0.0	0.55	0.00	0.0
Age of household head (years old)	59.6	0.1	0.2	60.5	0.1	0.2	57.7	0.2	0.3
Total expenditure on goods and services ordered over the Internet	12,683	127	1.0	14,332	106	0.7	9,441	294	3.1
51 Gift items	495	18	3.6	574	10	1.7	343	46	13.4
For home	12,187	127	1.0	13,758	105	0.8	9,099	293	3.2
52 Foods	1,135	16	1.4	1,411	19	1.3	592	27	4.6
53 Beverages	360	8	2.2	395	5	1.3	289	19	6.6
54 Deliveries	165	6	3.6	180	4	2.2	136	15	11.0
55 Home electronics	853	38	4.5	934	21	2.2	694	101	14.6
56 Furniture	267	9	3.4	317	8	2.5	169	20	11.8
57 Men's clothing	344	11	3.2	377	6	1.6	280	29	10.4
58 Women's clothing	666	14	2.1	780	10	1.3	441	35	7.9
59 Footwear and other clothing	329	7	2.1	402	5	1.2	185	19	10.3
60 Medicines	120	5	4.2	128	3	2.3	104	13	12.5
61 Health foods	473	9	1.9	542	7	1.3	338	22	6.5
62 Cosmetics	456	9	2.0	547	7	1.3	278	20	7.2
63 Private transportation	250	10	4.0	322	14	4.3	106	18	17.0
64 Books and other reading materials	266	6	2.3	284	4	1.4	231	15	6.5
65 Software (music, video, personal computer, TV game)	424	27	6.4	331	5	1.5	609	81	13.3
66 Digital books	104	4	3.8	91	2	2.2	131	11	8.4
67 Download music, video, applications	159	11	6.9	118	3	2.5	240	32	13.3
68 Insurance	513	17	3.3	581	15	2.6	378	38	10.1
69 Accommodation services, fares, package tours(payment on the Internet)	2,055	47	2.3	2,428	55	2.3	1,319	94	7.1
70 Accommodation services, fares, package tours(payment on-site)	834	45	5.4	979	25	2.6	551	114	20.7
71 Tickets	613	14	2.3	684	10	1.5	472	39	8.3
72 Other goods and services	1,801	48	2.7	1,925	24	1.2	1,556	135	8.7

Monthly Expenditure per Household by All Japan