

# 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 2021 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 2021 is 72.8%.

## 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)

2021 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)	2.25	0.00	0.0	2.94	0.00	0.0	1.00	0.00	0.0
Number of earners per household (persons)	1.19	0.00	0.0	1.51	0.00	0.0	0.59	0.00	0.0
Age of household head (years old)	59.2	0.1	0.2	60.2	0.1	0.2	57.4	0.2	0.3
Total expenditure on specific goods and services (50 items)	73,365	590	0.8	91,340	656	0.7	40,580	1,204	3.0
01 Mobile telephones charges	10,245	38	0.4	12,748	35	0.3	5,679	52	0.9
02 Internet connection charges	3,734	15	0.4	4,417	14	0.3	2,488	29	1.2
03 Mobile telephones unit prices	1,371	42	3.1	1,609	33	2.1	937	98	10.5
04 Airplane fares	301	16	5.3	324	14	4.3	259	35	13.5
05 Accommodation services	1,211	26	2.1	1,512	22	1.5	665	56	8.4
06 Package tour costs (domestic)	500	19	3.8	603	20	3.3	314	41	13.1
07 Package tour costs (overseas)	3	1	33.3	4	2	50.0	0	0	-
08 Tuition (kindergarten-university) (public)	1,312	52	4.0	1,895	43	2.3	246	116	47.2
09 Tuition (kindergarten-university) (private)	5,373	119	2.2	8,112	184	2.3	377	141	37.4
10 Tutorial fees	2,488	37	1.5	3,721	49	1.3	241	41	17.0
11 Lesson fees, driving school	481	34	7.1	662	29	4.4	150	90	60.0
12 Rental fees for sports facilities	872	14	1.6	1,021	13	1.3	600	27	4.5
13 Men's suits	423	19	4.5	494	14	2.8	293	45	15.4
14 Women's one-piece dresses and suits	457	14	3.1	525	12	2.3	332	30	9.0
15 Japanese clothing	166	16	9.6	201	18	9.0	104	28	26.9
16 Wrist watches	249	17	6.8	308	20	6.5	142	31	21.8
17 Accessories	466	40	8.6	507	23	4.5	390	105	26.9
18 Delivery fees	166	13	7.8	257	20	7.8	1	1	100.0
19 Hospital charges (excluding delivery)	1,495	36	2.4	1,810	40	2.2	919	68	7.4
20 Chests of drawers	95	8	8.4	116	7	6.0	56	19	33.9
21 Beds	203	11	5.4	273	13	4.8	74	16	21.6
22 Quilts	327	11	3.4	394	12	3.0	206	26	12.6
23 Desks and chairs (for work or study)	161	10	6.2	194	8	4.1	100	26	26.0
24 Sideboards	87	7	8.0	111	8	7.2	42	14	33.3
25 Dining tables and chairs	131	7	5.3	168	9	5.4	62	14	22.6
26 Drawing room suites	169	11	6.5	232	15	6.5	53	11	20.8
27 Musical instruments (including parts of instruments)	139	14	10.1	166	14	8.4	90	33	36.7
28 Refrigerators	661	24	3.6	819	25	3.1	373	51	13.7
29 Vacuum cleaners	322	9	2.8	386	8	2.1	207	20	9.7
30 Washing machines	589	17	2.9	786	22	2.8	229	29	12.7
31 Air conditioners	1,138	44	3.9	1,430	33	2.3	604	104	17.2
32 Personal computers (including tablet devices, excluding peripherals and software)	953	31	3.3	1,196	31	2.6	509	67	13.2
33 TV	725	23	3.2	885	24	2.7	433	55	12.7
34 Video recorders (DVD or Blu-ray recorder, player, etc.)	154	9	5.8	180	7	3.9	106	23	21.7
35 Video game hardware (excluding software)	170	16	9.4	155	6	3.9	199	40	20.1
36 Cameras (including lenses only, excluding disposable cameras)	133	20	15.0	143	9	6.3	113	53	46.9
37 Video cameras	17	2	11.8	22	3	13.6	8	4	50.0
38 House-related equipping/ construction/ repair costs	6,220	208	3.3	7,249	254	3.5	4,350	442	10.2
39 Water supply and drainage construction costs	1,869	69	3.7	2,262	73	3.2	1,152	130	11.3
40 Gardens, trees and plants tending costs	526	24	4.6	537	21	3.9	505	53	10.5
41 Automobiles (new)	10,472	366	3.5	13,494	380	2.8	4,955	760	15.3
42 Automobiles (second-hand)	3,481	247	7.1	4,383	184	4.2	1,836	562	30.6
43 Automotive insurance premium (compulsion)	591	9	1.5	724	10	1.4	348	19	5.5
44 Automotive insurance premium (option)	2,853	33	1.2	3,495	29	0.8	1,683	80	4.8
45 Motorized vehicles other than automobiles	289	32	11.1	354	28	7.9	171	72	42.1
46 Automotive maintenance and repairs	3,027	46	1.5	3,691	47	1.3	1,814	103	5.7
47 Wedding ceremony and reception costs	504	55	10.9	699	78	11.2	152	64	42.1
48 Funeral service costs	2,540	154	6.1	2,328	107	4.6	2,927	374	12.8
49 Religion-related costs	1,316	73	5.5	1,293	66	5.1	1,356	176	13.0
50 Remittance	2,195	54	2.5	2,448	42	1.7	1,733	134	7.7

Monthly Expenditure per Household

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

(All Japan)

2021Average	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)	2.25	0.00	0.0	2.94	0.00	0.0	1.00	0.00	0.0
Number of earners per household (persons)	1.19	0.00	0.0	1.51	0.00	0.0	0.59	0.00	0.0
Age of household head (years old)	59.2	0.1	0.2	60.2	0.1	0.2	57.4	0.2	0.3
Total expenditure on goods and services ordered over the Internet	16,034	162	1.0	18,727	137	0.7	11,129	287	2.6
51 Gift items	819	25	3.1	951	14	1.5	581	69	11.9
Total expenditure for home	15,215	156	1.0	17,776	134	0.8	10,548	276	2.6
52 Foods	2,302	31	1.3	2,929	33	1.1	1,160	48	4.1
53 Beverages	644	10	1.6	767	8	1.0	421	21	5.0
54 Deliveries	497	11	2.2	526	7	1.3	444	27	6.1
55 Home electronics	1,209	41	3.4	1,413	27	1.9	836	92	11.0
56 Furniture	431	17	3.9	511	12	2.3	287	40	13.9
57 Men's clothing	491	17	3.5	541	10	1.8	400	44	11.0
58 Women's clothing	902	16	1.8	1,104	12	1.1	535	34	6.4
59 Footwear and other clothing	448	9	2.0	573	8	1.4	219	19	8.7
60 Medicines	197	5	2.5	234	4	1.7	131	11	8.4
61 Health foods	638	10	1.6	738	8	1.1	455	21	4.6
62 Cosmetics	616	8	1.3	768	7	0.9	339	16	4.7
63 Private transportation	372	15	4.0	456	12	2.6	219	35	16.0
64 Books and other reading materials	395	9	2.3	438	5	1.1	316	22	7.0
65 Software (music, video, personal computer, TV game)	473	14	3.0	439	7	1.6	533	37	6.9
66 Digital books	246	12	4.9	184	3	1.6	358	35	9.8
67 Download music, video, applications	331	20	6.0	239	4	1.7	499	56	11.2
68 Insurance	704	16	2.3	891	17	1.9	362	27	7.5
69 Accommodation services, fares, package tours(payment on the Internet)	853	27	3.2	1,040	24	2.3	512	64	12.5
70 Accommodation services, fares, package tours(payment on-site)	413	17	4.1	501	15	3.0	253	37	14.6
71 Tickets	401	12	3.0	455	9	2.0	305	29	9.5
72 Other goods and services	2,652	46	1.7	3,029	39	1.3	1,964	93	4.7

Note : Monthly Expenditure per Household