

Survey Design of Japanese Panel Study of Employment Dynamics

1. Outline of the Survey

Purpose of the Survey	Reveal dynamics and variation of employment and non-employment all over the country
Items surveyed	Status of employment, Living dynamics, Status of initial and previous employment, Attribute of individual person of the Previous one year
Survey volume	about 100 questions Survey 2017: 99 questions

2. Period of the Survey

Survey period	Survey period is fixed as every January January 13 ~ January 31, 2017
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3. Coverage of the Survey

Survey districts	All over the country
Conditions of persons	Male and female 15 years old and over to be surveyed
Exclusion conditions	None (no condition on occupation/survey cooperation records)

4. Method of the Survey

Survey technique	Internet monitoring survey (Sample survey)
Sampling method	Extract persons satisfied the conditions by the monitor (Mighty monitor) possessed by Intage Inc.
Sample design	Based on “Labour force survey” data of Statistics Bureau, Ministry of Internal Affairs and Communications, allocation was implemented by gender, stratified age group, type of employment, district block, education background. The allocation was set to reflect the population. However, as for 10s of non-labour force, and 65 years old and over, the allocation was adjusted less than actual count of persons.
Effective collection count/effective collection rate	<p>Survey 2017: 48,763 samples</p> <p>* From Survey 2017 onwards, each survey consists of 2 sample types, continued (continuous answerers since last year), additional (new answerers of the year).</p> <ul style="list-style-type: none"> • Continued samples (continuous answerers since last year): 34,796 persons Persons requested: 46,283 Effective collection rate: 75.2% • Additional samples (new answerers, this year): 13,967 persons Persons requested: 23,931 Effective collection rate: 58.4% <p>* 14 samples out of the above continued samples are excluded from aggregating subjects due to overseas emigration</p>

5. Aggregation Method

Weighted sampling aggregation	Weighted sampling aggregation is necessary to implement aggregation according to the population construction since the collection was conducted with less allocation than actual count of persons for 10s of non-labour force, and 65 years old and over.
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1. Outline of the Survey

In Japanese Panel Study of Employment Dynamics, following items were questioned in survey 2017 for the purpose of grasping status of employment, living dynamics, etc. during the previous one year prior to the survey (in case of survey 2017, one year period of 2016).

Attribute		Status of the Previous One Year	
Q1	Gender	Q47	Level of happiness
Q2	Age	Q48	Life satisfaction
Q3	Birth month and year	Q49	Annual events and living
Q4	Present residential place	Q50	Annual occupational events (1)
Q5	Final educational background	Q51	Annual occupational events (2)
Q6	Graduated faculty	Q52	Self-development activities
Q7	Present school year	Q53	Holiday acquisition condition
Q8	Dropout experience	Q54	Rate of taking paid leaves
Q9	Marital status	Q55	Stress
Q10	With or without a child/children	Q56	Income source of living expenses
Q11	Number of children	Q57	How to cover the living expenses
Q12	Age of the eldest child	Q58	Job upskilling
Q12	Age of the youngest child	Q59	On-the-Job-Training opportunity
Q13	Type of residence	Q60	Off-the-Job-Training opportunity
Q14	Cohabiter	Q61	With or without self-development
Q15	Principal household income earner	Q62	Work place status
Q16-1	Labour force status of January 2016~April 2016	Q63	Nature of work
Q16-2	Labour force status of May 2016~August 2016	Q64	Job satisfaction
Q16-3	Labour force status of September 2016~November 2016	Q65	Stress of taking balance of work and family life
Q17	Labour force status of December 2016	Q66	Reasons of stress
Status as in Last December		Status of Second Job	
Q18	Type of working	Q67	With or without taking second job
Q19	Type of employment	Q68	Type of working, content of work, number of jobs of the highest income second jobs
Q20	Reasons of being engaged in work as in December	Q69	Type of working, content of work of the second highest income second jobs
Q21	Reasons of absence from work	Q70	Working hours per week of the second jobs
Q22	Could be engaged in work upon availability?	Status of Initial Employment	
Q23	Desire to work	Q71	Type of working of initial employment
Q24	Degree of desire to work	Q72	Industry of initial employment
Q25	With or without job seeking	Q73	Number of employees of initial employment
Q26	Reasons of seeking no job	Q74	Occupation of initial employment
Q27	Reasons of unemployment	Status of Previous Employment	
Q28	The reason of no desire to work	Q75	Type of working of previous employment
Q29	Industry	Q76	Industry of initial employment
Q30	Number of employees	Q77	Number of employees of previous employment
Q31	Occupation	Q78	Occupation of previous employment
Q32	Position title	Q79	Number of working days/hours in previous employment
Q33	With or without employment contract term	Q80	Annual income of previous employment
Q34	Employment contract term	Q81	Channels to find current place of work
Q35	Status of employment (unemployment) insurance coverage	Q82	Order of timing between the last resignation and adoption of current employment
Q36	Working days and hours per week	Q83	Reasons of the resignation
Q37	Salary payment method	Status around the Delivery of the Youngest Child	
Q38	Hourly rate	Q84・Q86	Working status before and after the birth of your youngest child / child of currently one year old
Q39	Commuting methods	Q85・Q87	Social system used at the birth of your youngest child / child of currently one year old
Q40	Work flexibility	Others	
Q41	Working place	Q88	Residential place
Q42-1	Time for living (1)Sleep	Q89	Academic achievement at the last junior high school year
Q42-2	Time for living (2)Housework, childcare	Q90	Month and year of school graduation, month and year of entry to and resignation from the initial employment, month and year of entry to and resignation from the previous employment, month and year of entry to the current employment
Q42-3	Time for living (3)Commutation	Q91	Annual income of the previous year (main job, second job, non-occupational)
Q42-4	Time for living (4)Work	Q92	Type of working of the spouse
Q42-5	Time for living (5)Free time	Q93	Annual income of the spouse
Q43	Time allocation of work	Q94	Savings per household, Amount of security holdings per household
Q44	Time for telework	Q95	Desire for changing or hunting job
Q45	Status of telework system introduction and adoption	Q96	Approach taken related to future career plan in the past one year
Q46	Number of resignation times in the past	Q97	Desired future plan after graduation
		Q98	Decision of occupation after graduation
		Q99	Job-hunting experience

2. Period of the Survey

As the purpose is to grasp the status of the previous one year prior to the survey period, the survey period is fixed as every January. The survey 2017 was actually implemented from January 13 to January 31, 2017.

3. Coverage of the Survey

The subjected persons are male and female of 15 years old and over, and without upper age limit. The survey was implemented not as a complete census but sample survey. (Refer to “4. Method of the Survey”)

4. Method of the Survey

Internet monitoring survey was used as the technique of survey by asking the monitors for the survey after extracting male and female of 15 years old and over. The survey applied the system to receive answers on internet screens.

When monitors are surveyed, discrepancy would be seen in age and occupation construction between monitors and the population subject to survey. In order to conduct the survey with representativeness reflecting the population as much as possible, necessary sample numbers were calculated by gender, stratified age group, type of employment, district block and education background, then collected answers aiming these numbers (allocation).

On this stage, if the samples are allocated according to the population construction, total volume of unworking groups of 10s and 65 years old and over increases and results decrease of sample numbers of working people groups on the target for the desired close analysis. Therefore, the survey was designed to obtain larger number of working people samples by allocating less figures to non-labour force of 10s, and 65 years old and over.

(Refer to Reference (1) “Production method of population value data and allocation by gender, stratified age group, type of employment, district block and education background”)

In survey 2017, at first we asked all the people (49,131 persons) who could be requested out of the answerers of survey 2016, to answer the survey. 46,283 persons could be requested for the survey as they remained in the monitor. 34,796 persons answered out of the above number. In the next stage, new answerers were extracted from the monitor and asked for the survey, imagining deficient cells to be filled up for the allocation. Out of the requested 23,931 persons, answers were obtained from 13,967 persons. In survey 2017, total number of effective samples was 48,763.

(Refer to “Reference (2) Allocation and collection count”)

5. Aggregation Method

Weighted sampling aggregation is necessary to implement aggregation according to the population construction so that the number of the samples can get near to the population value calculated in the stage of sample design in “4. Method of the Survey”, since less figures than actual count of persons were allocated to 10s of non-labour force, and 65 years old and over.

(Refer to “Reference (3) Calculation method of weighted values”)

It is verified that big bias can be eliminated from the survey results even compared with official statistics by allocation with smaller segmentation under consideration of the representativeness in the stage of sample design, then making correction by weighted aggregation.

(Refer to “Reference (4) Comparison of the survey results and official statistics”)

Reference (1) Production method of population value data and allocation by gender, stratified age group, type of employment, district block and education background

<Data production procedures>

- I. Produce population data: Produce population data using multiple official data adapting to the targeted allocation cells
- II. Correct population data for allocation: Adjust number of persons in the population
- III. Produce allocation: Make allocation adapting to the population data construction after correction

<Data production procedures in detail>

I. Produce population data:

Produce population data using multiple official data adapting to the targeted cells for allocation

I-i. Produce basic data

<Data used>

“Table II Population aged 15 years old and over by status of employment, position of employment, type of employment, marital status, and age group” from 2015 version “Labour Force Survey (Basic Tabulation) by Region” issued by Statistics Bureau, Ministry of Internal Affairs and Communications

- Extract number of persons of self-employed workers, family workers, executives of company or corporation, regular employees, non-regular employees, unemployment and non-labour force by gender age group (divided by 10s) for each area of whole Japan (divided by 11 areas), from “Table II Population aged 15 years old and over by status of employment, position of employment, type of employment, marital status, and age group” of 2015 version “Labour Force Survey (Basic Tabulation) by Region”
 - * The latest yearly data are used
- Data are produced by following cells x 11 areas

		Labour force						Non-labour force
		Self employed worker	Family worker	Executive of company or corporation	Regular employee	Non-regular employee	Unemployment	
Male	15 - 24 years old							
	25 - 34 years old							
	35 - 44 years old							
	45 - 54 years old							
	55 - 64 years old							
	65 years old and over							
Female	15 - 24 years old							
	25 - 34 years old							
	35 - 44 years old							
	45 - 54 years old							
	55 - 64 years old							
	65 years old and over							

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I-ii. Age group division change (by 5 from 10 years)

<Data used>

“Table I-2 Population aged 15 years old and over by status of employment, position of employment, type of employment (number of employees for non-agricultural/forestry industry employees), main activity status, agriculture/forestry, non-agricultural/forestry, type of household, family type of household and age group” from 2015 version “Labour Force Survey (Basic Tabulation) Whole Japan” issued by Statistics Bureau, Ministry of Internal Affairs and Communications

- The data in I-i are divided into groups of 10 years, therefore the above data are divided so that 15 ~ 24 years old becomes 15 ~ 19 years old/20 ~ 24 years old, and 65 years old and over becomes 65 ~ 69 years old/70 years old and over
(Get the rate of 15 ~ 19 years old out of 15 ~ 24 years old, then multiply the data of 15 ~ 24 years old by the rate to get number of persons. For other age segments, the same procedures are to be followed as above.)
- On this stage, utilise the data corresponding to the segments by self-employed workers, family workers, executives of company or corporation, regular employees, non-regular employees, unemployment, non-labour force that were sorted in I-i
 - * As for executives of company or corporation, the data of regular employees are used
 - * The data uniformed throughout the country are used

In this way, cells will be arranged as follows:

		Labour force						Non-labour force
		Self employed worker	Family worker	Executive of company or corporation	Regular employee	Non-regular employee	Unemployment	
Male	15 · 19 years old							
	20 · 24 years old							
	25 · 34 years old							
	35 · 44 years old							
	45 · 54 years old							
	55 · 64 years old							
	65 · 69 years old							
	70 years old and over							
Female	15 · 19 years old							
	20 · 24 years old							
	25 · 34 years old							
	35 · 44 years old							
	45 · 54 years old							
	55 · 64 years old							
	65 · 69 years old							
	70 years old and over							

I-iii. Calculation of number of persons attending school

<Data used>

“Table I-2 Population aged 15 years old and over by status of employment, age group, main activity status, agriculture/forestry, non-agricultural/forestry, whether wishing to work, marital status, type of household, relation to the head of household, and education background” from 2015 version “Labour Force Survey (Detailed Tabulation) Whole Japan” issued by Statistics Bureau, Ministry of Internal Affairs and Communications

- From the above data, ratios of “attending schools” for labour force/non-labour force by gender age (divided into groups of 10 years) are calculated. The results are multiplied by the basic data to get the count of persons “attending school” by labour force/non-labour force x gender age (divided into groups of 10 years)
 - * Since there are no data by labour force breakdown (self-employed, regular employees, etc.), the ratio is as uniformed for every type of employment
 - * Since there are no data by each region, whole Japan data are used

In the above way, attending school was extracted and arranged as in following cells:

		Labour force						Non-labour force	
		Self employed worker	Family worker	Executive of company or corporation	Regular employee	Non-regular employee	Unemployment	Attending school	Attending school
Male	15 · 19 years old								
	20 · 24 years old								
	25 · 34 years old								
	35 · 44 years old								
	45 · 54 years old								
	55 · 64 years old								
	65 · 69 years old								
	70 years old and over								
Female	15 · 19 years old								
	20 · 24 years old								
	25 · 34 years old								
	35 · 44 years old								
	45 · 54 years old								
	55 · 64 years old								
	65 · 69 years old								
	70 years old and over								

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I-iv. Divide persons other than attending school into the groups of below university graduates and university graduates or higher

<Data used>

“Table I-2 Population aged 15 years old and over by status of employment, age group, main activity status, agriculture/forestry, non-agricultural/forestry, whether wishing to work, marital status, type of household, relation to the head of household, and education” from 2015 version “Labour Force Survey (Detailed Tabulation) Whole Japan” issued by Statistics Bureau, Ministry of Internal Affairs and Communications

- Like as in I-iii, ratios of below university graduates and university graduates or higher for the persons “graduated from” by labour force /non-labour force x gender age (divided into groups of 10 years) are calculated. The results are multiplied by the basic data to get the count of persons by education background (below university graduates/university graduates or higher)
 - * Since there are no data by labour force breakdown (self-employed, regular employees, etc.), the ratio is as uniformed for every type of employment
 - * Since there are no data by each region, whole Japan data are used
- Now, the count of persons of the population adapted to the aimed allocation cells is completed. Produce 2,816 cells (cells x 11 areas = 2,816) as below;

		Hokkaido														Non-labour force		
		Labour force																
		Self employed worker		Family worker		Executive of company or corporation		Regular employee		Non-regular employee		Unemployment		Attending school	Below university	University or higher	Attending school	
		Below university	University or higher	Below university	University or higher	Below university	University or higher	Below university	University or higher	Below university	University or higher	Below university	University or higher					
		14	6	6	1	10	4	84	41	63	19	7	3	6	165	21	25	
Male	15 - 19 years old	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	9	
	20 - 24 years old	0	0	0	0	0	0	3	1	2	1	0	0	2	0	0	3	
	25 - 34 years old	1	0	1	0	0	0	10	8	2	2	1	0	0	1	0	1	
	35 - 44 years old	1	1	1	0	1	0	16	9	2	1	1	0	0	2	0	0	
	45 - 54 years old	2	1	0	0	2	1	13	8	2	1	1	0	0	2	1	0	
	55 - 64 years old	3	1	0	0	2	1	10	5	4	3	1	0	0	4	2	0	
	65 - 69 years old	1	0	0	0	2	0	2	0	4	1	0	0	0	8	2	0	
70 years old and over	2	1	0	0	1	0	1	0	2	1	0	0	0	31	7	0		
Female	15 - 19 years old	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	9	
	20 - 24 years old	0	0	0	0	0	0	3	1	2	1	0	0	2	0	0	3	
	25 - 34 years old	1	0	0	0	0	0	6	4	5	3	1	0	0	5	2	0	
	35 - 44 years old	1	0	1	0	1	0	8	2	10	3	1	0	0	9	2	0	
	45 - 54 years old	1	0	1	0	1	0	8	1	12	2	1	0	0	8	1	0	
	55 - 64 years old	1	0	2	0	1	0	4	1	11	1	1	0	0	16	2	0	
	65 - 69 years old	1	0	0	0	1	0	1	0	3	0	0	0	0	16	1	0	
70 years old and over	1	0	1	0	0	0	0	0	1	0	0	0	0	61	2	0		

II. Correct population data for allocation: Adjust number of persons in the population

II-i. Reduce the actual count of persons 65 years old and over by half

- Reduce actual data of number of persons for each cell of 65 ~ 69 years old and 70 years old and over by half

II-ii. For generation of 10s and 65 years old and over, make the non-labour force a half of the labour force

- As for age groups 15 ~ 19 years old, 65 ~ 69 years old and 70 years old and over, make the total of non-labour force count a half of the labour force
- The construction of education background (below university graduates/university graduates or higher/attending school) within the non-labour force is to be kept same as of the original population construction.

II-iii. After adjustment, construction ratio of the population is calculated

- Calculate overall construction ratio of each cell for the population data in II-ii

Reference (2) Allocation and collection count

The number of persons from whom actual effective answers were obtained is as below after the implementation of survey with the target of the allocation produced in Reference (1).

		Allocation																						
		All over the country																						
		Labour force																						
		Self employed worker			Family worker			Executive of company or corporation			Regular employee			Non-regular employee			Unemployment			Non-labour force				
Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Attending school	Below university		University or higher	Attending school		
1637		674	535		111	1083		463	11294		5593	7256		2179	751		338	745	5811		1217	1275		
Male	15 - 19 years old	2	0	0	0	0	0	0	63	0	115	0	12	0	65	0	0	65	0	0	121			
	20 - 24 years old	6	2	3	1	0	0	0	365	120	234	75	37	14	283	28	5	283	28	5	495			
	25 - 34 years old	62	48	21	14	36	27	1455	1149	285	225	95	74	32	102	38	61	102	38	61				
	35 - 44 years old	200	120	28	18	143	86	2215	1323	244	145	93	56	0	150	36	4	150	36	4				
	45 - 54 years old	236	144	9	6	194	118	1890	1150	188	114	76	46	0	162	35	0	162	35	0				
	55 - 64 years old	326	185	3	2	247	140	1119	632	512	288	81	47	0	456	153	0	456	153	0				
	65 - 69 years old	131	37	0	0	100	28	81	24	204	60	20	2	0	280	57	0	280	57	0				
	70 years old and over	177	50	6	0	45	13	37	11	101	30	9	0	0	196	41	0	196	41	0				
Female	15 - 19 years old	0	0	0	0	0	0	0	30	0	145	0	9	0	65	5	0	65	5	0	115			
	20 - 24 years old	0	0	0	0	0	0	0	305	105	254	87	30	12	290	39	3	290	39	3	453			
	25 - 34 years old	32	20	12	8	6	4	948	530	649	364	70	41	10	643	219	22	643	219	22				
	35 - 44 years old	96	24	66	16	53	13	1117	292	1342	350	83	21	0	978	275	4	978	275	4				
	45 - 54 years old	110	21	87	17	82	17	1004	176	1479	261	72	15	0	851	150	0	851	150	0				
	55 - 64 years old	131	19	158	22	112	16	583	79	1206	163	58	10	0	1551	205	0	1551	205	0				
	65 - 69 years old	50	1	58	1	37	1	47	1	206	13	4	0	0	201	0	0	201	0	0				
	70 years old and over	78	3	84	6	28	0	35	1	92	13	4	2	0	169	0	0	169	0	0				
		Collection count (final effective samples)																						
		All over the country																						
		Labour force																						
		Self employed worker			Family worker			Executive of company or corporation			Regular employee			Non-regular employee			Unemployment			Non-labour force				
		Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Attending school	Below university		University or higher	Attending school
		2004		1097	555		113	1119		558	12732		6414	8364		2792	739		367	1392	7209		1938	1356
Male	15 - 19 years old	5	0	1	0	0	0	34	0	22	3	2	0	97	33	3	97	33	3	222				
	20 - 24 years old	18	4	7	3	13	3	349	145	161	62	18	8	381	59	32	381	59	32	360				
	25 - 34 years old	76	80	35	13	44	21	1628	1251	345	250	62	71	56	169	74	54	56	169	74	54			
	35 - 44 years old	230	113	38	23	145	80	2501	1460	311	171	99	58	36	221	50	5	221	50	5				
	45 - 54 years old	276	150	22	3	207	122	2106	1219	266	142	88	51	42	215	70	9	215	70	9				
	55 - 64 years old	381	252	14	8	244	144	1265	780	593	411	78	54	25	545	214	9	545	214	9				
	65 - 69 years old	149	111	3	1	101	53	105	54	249	132	13	5	4	362	173	9	362	173	9				
	70 years old and over	162	136	5	4	43	72	38	31	151	134	1	1	7	292	190	4	292	190	4				
Female	15 - 19 years old	8	0	0	0	9	0	35	0	82	0	5	0	150	27	2	150	27	2	207				
	20 - 24 years old	24	3	8	2	24	1	358	162	315	95	34	10	459	148	33	459	148	33	405				
	25 - 34 years old	102	43	37	10	23	13	1096	647	800	403	86	52	41	745	258	27	745	258	27				
	35 - 44 years old	129	54	81	15	43	6	1301	355	1590	387	111	26	24	1118	303	12	1118	303	12				
	45 - 54 years old	149	49	85	7	77	9	1161	178	1748	293	83	15	42	990	167	8	990	167	8				
	55 - 64 years old	175	79	157	19	103	27	694	122	1407	268	56	14	24	1793	291	17	1793	291	17				
	65 - 69 years old	61	9	45	4	29	4	44	7	239	22	3	1	1	272	47	5	272	47	5				
	70 years old and over	59	14	17	1	14	3	17	3	85	19	0	1	3	220	31	3	220	31	3				
		Excess/deficiency count																						
		All over the country																						
		Labour force																						
		Self employed worker			Family worker			Executive of company or corporation			Regular employee			Non-regular employee			Unemployment			Non-labour force				
		Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Below university		University or higher	Attending school	Below university		University or higher	Attending school
		367		423	20		2	36		95	1438		821	1108		613	(12)		29	647	1398		721	81
Male	15 - 19 years old	3	0	1	0	0	0	(29)	0	(93)	3	(10)	0	32	33	3	32	33	3	101				
	20 - 24 years old	12	2	4	2	13	3	(16)	-25	(73)	(13)	(19)	(6)	98	31	27	(135)	98	31	27	(135)			
	25 - 34 years old	14	32	14	(1)	8	(6)	173	102	60	25	(33)	(3)	24	67	36	(7)	24	67	36	(7)			
	35 - 44 years old	30	(7)	10	5	2	(6)	286	137	67	26	6	2	36	71	14	1	36	71	14	1			
	45 - 54 years old	40	6	13	(3)	13	4	216	69	78	28	12	5	42	53	35	9	42	53	35	9			
	55 - 64 years old	55	67	11	6	(3)	4	146	148	81	123	(3)	7	25	89	61	9	25	89	61	9			
	65 - 69 years old	18	74	3	1	25	3	24	30	45	72	(7)	3	4	82	116	9	4	82	116	9			
	70 years old and over	(15)	86	(1)	4	(2)	59	1	20	50	104	(8)	1	7	96	149	4	7	96	149	4			
Female	15 - 19 years old	8	0	0	0	9	0	5	0	(63)	0	(4)	0	85	22	2	85	22	2	92				
	20 - 24 years old	24	3	8	2	24	1	53	57	61	8	4	(2)	169	109	30	(48)	169	109	30	(48)			
	25 - 34 years old	70	23	25	2	17	9	148	117	151	39	16	11	31	102	39	5	31	102	39	5			
	35 - 44 years old	33	30	15	(1)	(10)	(7)	184	63	248	37	28	5	24	140	28	8	24	140	28	8			
	45 - 54 years old	39	28	(2)	(10)	(5)	(8)	157	2	269	32	11	0	42	139	17	8	42	139	17	8			
	55 - 64 years old	44	60	(1)	(3)	(9)	11	111	43	201	105	(2)	4	24	242	86	17	24	242	86	17			
	65 - 69 years old	11	8	(13)	3	(8)	3	(3)	6	33	9	(1)	1	1	71	47	5	1	71	47	5			
	70 years old and over	(19)	11	(67)	(5)	(14)	3	(18)	2	(7)	15	(2)	1	3	51	31	3	3	51	31	3			

* Above data show total of whole Japan. In detail, total throughout the country by 11 areas. Figures in the brackets represent number in deficiency

* 14 samples are excluded from the above collection count for this year survey due to their overseas emigration

Reference (3) Calculation method of weighted values

<Calculation procedures>

- I. Calculate number of persons for each cell in case collection can be made up according to the population construction
- II. Calculation of weighted values

<Calculation procedures in detail>

- I. Calculate number of persons for each cell in case collection can be made up according to the population construction
 - I-i.
 - Calculate overall construction ratio of each cell using the data of population person count produced in Reference (1)-I
 - I-ii.
 - Calculate number of persons for each cell in case of collection of 48,749 can be made up according to the population, multiplying 48,749 excluded 14 samples of overseas emigrants out of the effective answer count of the survey by overall construction ratio of the population

II. Calculation of weighted values

- Calculate the coefficient (weighted value) to make the actual collection count for each cell as the same number of persons calculated in I-ii
- Calculation was done in following 2 patterns; As for unemployment and non-labour force, the weighted value calculated with Pattern A is to be used, and for the rest of persons, the weighted value calculated with Pattern B is to be used

Pattern A: Number of all cells of the population produced in Reference (1)-I (2,816 cells)

Pattern B: 96 cells only by gender, stratified age group, status of employment, education background

Reference (4) Comparison of the survey results and official statistics

Comparison between aggregated results in the survey (after weighted aggregation) and construction ratio in official statistics shows as below; The results of this survey appear not strongly biased, even compared with official statistics.

<Construction ratio by gender, stratified age group and type of employment>

Japanese Panel Study of Employment Dynamics 2017

The population produced in Reference (1)-I

		All over the country									
		Labour force					Non-labour force				
		Self employed worker	Family worker	Executive of company or corporation	Regular employee	Non-regular employee	Unemployment				
		n (persons)	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	Attending school	previously graduated	Attending school	previously graduated
Male	15-19 years old	4861	5.1	1.2	2.8	29.3	17.9	1.8	1.3	34.3	5.9
	20-24 years old	1321	0.0	0.0	0.0	0.2	0.1	0.0	0.1	0.1	2.2
	25-34 years old	1399	0.0	0.0	0.0	0.9	0.4	0.1	0.5	0.1	0.5
	35-44 years old	3149	0.2	0.1	0.1	4.5	0.9	0.3	0.1	0.2	0.1
	45-54 years old	4063	0.5	0.1	0.3	6.1	0.7	0.3	0.0	0.3	0.0
	55-64 years old	3959	0.7	0.0	0.3	5.1	0.6	0.2	0.0	0.3	0.0
	65-69 years old	3510	0.9	0.0	0.6	3.0	1.5	0.2	0.0	1.0	0.0
70 years old and over	2099	0.6	0.0	0.4	0.4	0.9	0.1	0.0	1.9	0.0	
Female	15-19 years old	4304	0.7	0.0	0.2	0.2	0.6	0.0	0.0	7.2	0.0
	20-24 years old	1253	0.0	0.0	0.1	0.2	0.0	0.1	0.2	2.0	0.0
	25-34 years old	1326	0.0	0.0	0.0	0.7	0.5	0.1	0.5	0.1	0.5
	35-44 years old	2989	0.2	0.1	0.1	2.4	1.7	0.2	0.0	1.5	0.0
	45-54 years old	3953	0.3	0.1	0.1	2.4	2.9	0.2	0.0	2.2	0.0
	55-64 years old	3647	0.3	0.1	0.1	2.0	3.1	0.2	0.0	1.7	0.0
	65-69 years old	3096	0.3	0.3	0.2	1.2	2.1	0.1	0.0	3.0	0.0
70 years old and over	2187	0.2	0.2	0.1	0.2	0.8	0.0	0.0	3.0	0.0	
		6292	0.4	0.1	0.1	0.1	0.5	0.0	0.0	11.6	0.0

		All over the country									
		Labour force					Non-labour force				
		Self employed worker	Family worker	Executive of company or corporation	Regular employee	Non-regular employee	Unemployment				
		n (x 10,000 persons)	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	Attending school	previously graduated	Attending school	previously graduated
Male	15-19 years old	11820	2.9	1.4	3.1	29.4	17.4	1.9	1.3	34.6	6.0
	20-24 years old	306	0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.1	2.2
	25-34 years old	316	0.0	0.0	0.0	0.8	0.5	0.1	0.5	0.1	0.5
	35-44 years old	704	0.2	0.1	0.1	4.5	0.9	0.3	0.1	0.2	0.1
	45-54 years old	918	0.5	0.1	0.4	6.1	0.7	0.3	0.0	0.3	0.0
	55-64 years old	828	0.7	0.0	0.5	5.2	0.5	0.2	0.0	0.3	0.0
	65-69 years old	791	0.9	0.0	0.7	3.0	1.4	0.2	0.0	1.0	0.0
70 years old and over	474	0.6	0.0	0.4	0.4	0.9	0.1	0.0	1.9	0.0	
Female	15-19 years old	974	0.8	0.0	0.2	0.2	0.4	0.0	0.0	7.2	0.0
	20-24 years old	290	0.0	0.0	0.0	0.1	0.3	0.0	0.1	0.2	2.0
	25-34 years old	299	0.0	0.0	0.0	0.7	0.6	0.1	0.5	0.1	0.5
	35-44 years old	676	0.1	0.0	0.0	2.5	1.7	0.2	0.0	1.5	0.0
	45-54 years old	896	0.2	0.1	0.1	2.4	2.9	0.2	0.0	2.2	0.0
	55-64 years old	824	0.2	0.2	0.2	2.0	3.0	0.2	0.0	1.7	0.0
	65-69 years old	814	0.3	0.3	0.2	1.1	2.1	0.1	0.0	3.0	0.0
70 years old and over	499	0.2	0.2	0.1	0.2	0.7	0.0	0.0	3.1	0.0	
		1414	0.3	0.3	0.1	0.1	0.3	0.0	0.0	11.7	0.0

* % values in the table represent percentage of total

* Since the weighted aggregation is implemented, total (n) of Japanese Panel Study of Employment Dynamics 2017 is not identical with the actual collection count

<Construction ratio of regular and non-regular by gender and stratified age group, for employees>

Japanese Panel Study of Employment Dynamics 2017

Statistics Bureau, Ministry of Internal Affairs and Communications "Labour Force Survey (Basic Tabulation)" December, 2016

		n (persons)		
		n (persons)	Regular employee	Non-regular employee
Male	15 ~ 24 years old	1051	51.3	48.7
	25 ~ 34 years old	2641	82.6	17.4
	35 ~ 44 years old	3316	89.2	10.8
	45 ~ 54 years old	2801	89.1	10.9
	55 ~ 64 years old	2159	67.1	32.9
	65 years old and over	1023	26.0	74.0
Female	15 ~ 24 years old	997	37.8	62.2
	25 ~ 34 years old	2003	59.2	40.8
	35 ~ 44 years old	2581	45.6	54.4
	45 ~ 54 years old	2459	39.6	60.4
	55 ~ 64 years old	1710	32.8	67.2
	65 years old and over	780	16.2	83.8

		n (x 10,000 persons)		
		n (x 10,000 persons)	Regular employee	Non-regular employee
Male	15 ~ 24 years old	260	50.8	49.2
	25 ~ 34 years old	582	83.8	16.2
	35 ~ 44 years old	731	90.8	9.2
	45 ~ 54 years old	665	91.1	8.9
	55 ~ 64 years old	486	68.7	31.3
	65 years old and over	239	27.2	72.8
Female	15 ~ 24 years old	247	44.5	55.5
	25 ~ 34 years old	473	61.1	38.9
	35 ~ 44 years old	589	46.7	53.3
	45 ~ 54 years old	591	41.5	58.5
	55 ~ 64 years old	401	33.2	66.8
	65 years old and over	179	21.2	78.8

<Unemployment rate by region>

Japanese Panel Study of Employment Dynamics 2017

Statistics Bureau, Ministry of Internal Affairs and Communications "Labour Force Survey (Basic Tabulation)" October ~ December 2016 (Seasonally adjusted values)

Hokkaido	Tohoku	Minami kanto	Kitakanto/koshin	Hokuriku	Tokai	Kinki	Chugoku/Shikoku	Kyusyu/Okinawa
3.2	3.4	3.1	2.7	2.7	2.4	3.6	2.9	3.3 (%)

Hokkaido	Tohoku	Minami kanto	Kitakanto/koshin	Hokuriku	Tokai	Kinki	Chugoku/Shikoku	Kyusyu/Okinawa
3.2	2.8	3.3	2.9	2.5	2.4	3.2	3.0	3.3 (%)