

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 2020: 104 questions

2. Period of the Survey

Survey period	Survey period is fixed as every January January 9 ~ January 31, 2020
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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 70 years old and over, the allocation was adjusted less than actual count of persons.
Effective collection count/effective collection rate	<p>Survey 2020: 57,284 samples</p> <p>* From Survey 2017 onwards, each survey consists of 3 sample types, continued (previous year answerers), additional (new answerers of the year) and revived (answerers of Survey before 2018 who didn't answer Survey 2019).</p> <ul style="list-style-type: none"> • Continued samples (continuous answerers since last year): 47,833 persons Persons requested: 59,767 Effective collection rate: 80.0% • Additional samples (new answerers, this year): 5,025 persons Persons requested: 9,512 Effective collection rate: 52.8% • Revived samples (no answer in survey 2019, but answered in 2018): 4,426 persons Persons requested: 19,251 Effective collection rate: 23.0% <p>* 26 samples out of the above 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 and 65 - 69 years old of non-labour force, and 70 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 2020 for the purpose of grasping status of employment, living dynamics, etc. during the previous one year prior to the survey (in case of survey 2020, one year period of 2019).

Attribute		Status of the Previous One Year	
Q1	Gender	Q50	Level of happiness
Q2	Age	Q51	Life satisfaction
Q3	Birth month and year	Q52	Annual events and living
Q4	Present residential place	Q53	Annual occupational events
Q5	Final educational background	Q54	Self-development activities
Q6	Graduated faculty	Q55	Holiday acquisition condition
Q7	Present school year	Q56	Rate of taking paid leaves
Q7-1	Faculty to plan to graduate from	Q57	Stress
Q8	Dropout experience	Q58	Income source of living expenses
Q9	Marital status	Q59	How to cover the living expenses
Q10	With or without a child/children	Q60	Job upskilling
Q11	Number of children	Q61	On-the-Job-Training opportunity
Q12	Age of the eldest child	Q62	Off-the-Job-Training opportunity
Q12	Age of the youngest child	Q63	With or without self-development
Q13	Type of residence	Q64	Work place status
Q14	Cohabiter	Q65	Nature of work
Q15	Principal household income earner	Q66	Job satisfaction
Q16-1	Labour force status of January 2018~April 2018	Q67	Stress of taking balance of work and family life
Q16-2	Labour force status of May 2018~August 2018	Status of Second Job	
Q16-3	Labour force status of September 2018~November 2018	Q68	With or without taking second job
Q17	Labour force status of December 2018	Q69	Desire to take second job
Status as in Last December		Q70	Reasons of desire to take second job
Q18	Type of working	Q71	Reasons of taking second job
Q19	Type of employment	Q72-1	Type of working of the highest income second job
Q20	With or without store	Q72-2	Content of work of the highest income second job
Q21	Reasons of being engaged in work as in December	Q72-3	Specific work content of second job
Q22	Reasons of absence from work	Q72-4	With or without store of second job
Q23	Could be engaged in work upon availability?	Q72-5	Number of the second jobs
Q24	Desire to work	Q73	Working hours per week of the second jobs
Q25	Degree of desire to work	Status of Initial Employment	
Q26	With or without job seeking	Q74	Type of working of initial employment
Q27	Reasons of seeking no job	Q75	Industry of initial employment
Q28	Reasons of unemployment	Q76	Number of employees of initial employment
Q29	The reason of no desire to work	Q77	Occupation of initial employment
Q30	Industry	Status of Previous Employment	
Q31	Number of employees	Q78	Type of working of previous employment
Q32	Occupation	Q79	Industry of previous employment
Q33	Position title	Q80	Number of employees of previous employment
Q34	With or without employment contract term	Q81	Occupation of previous employment
Q35	Employment contract term	Q82	Number of working days/hours in previous employment
Q36	Status of employment (unemployment) insurance coverage	Q83	Annual income of previous employment
Q37	Working days and hours per week	Q84	Channels to find current place of work
Q38	Salary payment method	Q85	Order of timing between the last resignation and adoption of current employment
Q39	Hourly rate	Q86	Reasons of the resignation
Q40	Work flexibility	Status around the Delivery of the Youngest Child	
Q41	Working place	Q87・Q89	Working status before and after the birth of your youngest child / child of currently one year old
Q42	Job style	Q88・Q90	Social system used at the birth of your youngest child / child of currently one year old
Q43	Job percentage	Others	
Q44	Commuting methods	Q91	Residential place
Q45-1	Time for living (Commutation)	Q92	Academic achievement at the last junior high school year 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
Q45-2	Time for living (Housework, childcare)	Q93	Annual income of the previous year (main job, second job, non-occupational) With whom can you consult?
Q46	Time for telework	Q94	Type of working of the spouse
Q47	Status of telework system introduction and adoption	Q95	Event in work (resignation or employment of spouse)
Q48	Subject person to telework system	Q96	Annual income of the spouse
Q49	Number of resignation times in the past	Q97	With or without doing nursing care
		Q98	Desire for changing or hunting job
		Q99	Approach taken related to future career plan in the past one year
		Q100	Desired future plan after graduation
		Q101	Decision of occupation after graduation
		Q102	Job-hunting experience
		Q103	
		Q104	

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 2020 was actually implemented from January 9 to January 31, 2020.

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 - 69 years old, and 70 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 - 69 years old, and 70 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 2020, at first we asked all the people who could be requested out of the answerers of survey before 2019 (continued samples and revived samples), to answer the survey. 79,018 persons could be requested for the survey as they remained in the monitor. 52,259 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 9,512 persons, answers were obtained from 5,025 persons. In survey 2020, total number of effective samples was 57,284.

(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 and 65 - 69 years old of non-labour force, and 70 years old and over.

(Refer to “Reference (3) Calculation method of weighted values” and “Reference (5) 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 2018 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 2018 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	
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 2018 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 - 74 years old/75 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 - 74 years old							
75 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 - 74 years old							
75 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 2018 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 - 74 years old								
75 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 - 74 years old								
75 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 2018 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 3,168 cells (cells x 11 areas = 3,168) as below;

		Hokkaido																	
		Labour force															Non-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			
		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				Below university	University or higher	
		13	6	4	0	9	4	88	44	65	20	6	3	7	153	22	23		
Male	15 - 19 years old	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	9		
	20 - 24 years old	0	0	0	0	0	0	3	1	2	0	0	0	3	0	0	3		
	25 - 34 years old	1	0	0	0	0	0	10	8	2	1	1	0	0	1	0	0		
	35 - 44 years old	1	1	0	0	1	1	15	9	2	1	1	0	0	1	0	0		
	45 - 54 years old	2	1	0	0	1	1	15	9	2	1	1	0	0	2	0	0		
	55 - 64 years old	2	2	0	0	2	1	9	6	4	2	1	0	0	3	1	0		
	65 - 69 years old	1	0	0	0	2	1	1	0	4	1	1	0	0	7	2	0		
	70 - 74 years old	1	0	0	0	1	0	1	0	2	1	0	0	0	9	2	0		
75 years old and over	1	0	0	0	0	0	0	0	1	0	0	0	0	22	6	0			
Female	15 - 19 years old	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	8		
	20 - 24 years old	0	0	0	0	0	0	3	1	2	1	0	0	3	0	0	3		
	25 - 34 years old	0	0	0	0	0	0	6	4	5	3	1	0	0	4	2	0		
	35 - 44 years old	1	0	0	0	0	0	8	3	10	3	1	0	0	6	2	0		
	45 - 54 years old	1	0	1	0	0	0	9	2	13	2	1	0	0	7	1	0		
	55 - 64 years old	1	0	1	0	1	0	5	1	11	2	1	0	0	12	2	0		
	65 - 69 years old	1	0	1	0	1	0	1	0	4	0	0	0	0	15	1	0		
	70 - 74 years old	1	0	1	0	0	0	0	0	2	0	0	0	0	16	1	0		
75 years old and over	1	0	1	0	0	0	0	0	1	0	0	0	0	48	2	0			

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

II-i. Reduce the actual count of persons 70 years old and over by half

- Reduce actual data of number of persons for each cell of 70 - 74 years old and 75 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, 70 - 74 years old and 75 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

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	Children														Seniors																				
	Labour force							New labour force							Labour force							New 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		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	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							
Male	15-19 years old	8	27	22	3	46	14	305	184	187	56	9	2	182	32	31	100	88	33	18	38	38	1181	572	387	246	57	26	56	547	120	125			
	20-24 years old	0	0	0	0	0	0	10	3	4	1	0	0	1	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	25-34 years old	3	6	0	0	0	0	26	28	6	5	0	0	1	3	1	6	6	3	2	3	2	122	186	28	13	6	5	2	10	3	3			
	35-44 years old	4	4	0	0	3	2	55	35	3	2	3	2	0	4	1	0	19	12	3	2	10	4	188	121	79	12	6	4	0	13	3	0		
	45-54 years old	7	4	0	0	7	4	54	32	3	2	3	2	0	4	1	0	27	18	3	2	13	8	181	107	20	12	7	4	0	18	3	0		
	55-64 years old	12	8	0	0	8	4	22	21	13	8	0	0	0	11	5	0	38	28	0	0	18	12	121	78	22	34	6	4	0	24	14	0		
	65-69 years old	11	4	0	0	8	2	5	2	10	3	0	0	0	18	5	0	16	5	0	0	34	11	1	0	42	13	5	1	0	59	16	0	0	
	70-74 years old	4	1	0	0	2	0	1	0	2	1	0	0	0	5	0	0	12	4	1	0	3	1	4	1	16	3	0	0	0	16	5	0		
	75 years old and over	4	1	0	0	1	0	0	0	1	0	0	0	0	5	0	0	13	4	1	0	1	0	2	0	4	1	0	0	0	11	5	0		
Female	15-19 years old	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20-24 years old	0	0	0	0	0	0	8	2	4	1	0	0	0	1	1	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	25-34 years old	0	0	0	0	0	0	28	17	15	8	3	2	0	11	4	0	3	2	3	2	3	2	53	80	61	40	6	4	2	42	15	1	0	0
	35-44 years old	4	1	4	1	0	0	38	12	28	11	0	0	0	18	5	0	6	3	3	4	1	120	40	125	40	3	0	64	22	0	0	0	0	
	45-54 years old	4	1	4	1	4	1	40	8	38	7	0	0	0	22	4	0	9	2	9	2	9	2	125	24	143	27	4	1	0	87	13	0		
	55-64 years old	9	3	9	1	5	1	23	4	37	8	0	0	0	37	4	0	8	1	22	4	9	1	83	13	138	21	5	1	0	158	21	0		
	65-69 years old	4	3	8	0	3	0	5	0	15	1	0	0	0	16	0	0	11	1	10	1	8	1	13	1	52	4	0	0	0	61	0	0		
	70-74 years old	2	0	2	0	1	0	1	0	3	0	0	0	0	3	0	0	5	0	8	0	2	0	0	0	12	1	0	0	0	18	0	0		
	75 years old and over	2	0	2	0	0	0	1	0	1	0	0	0	0	5	0	0	5	0	8	0	2	0	0	0	0	0	0	0	0	0	11	0	0	

	Children														Seniors																				
	Labour force							New labour force							Labour force							New 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		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	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							
Male	15-19 years old	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	20-24 years old	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	25-34 years old	3	2	0	0	0	0	15	12	3	2	0	0	0	0	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	35-44 years old	3	2	0	0	3	2	20	12	3	2	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	45-54 years old	6	4	0	0	2	2	10	8	6	4	0	0	0	0	0	0	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	55-64 years old	2	1	0	0	2	1	2	1	2	1	0	0	0	0	0	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	65-69 years old	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	70-74 years old	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	75 years old and over	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Reference (3) Calculation method of weighted values of the survey

<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
However, 70 - 74 /75 years old and over cells will be included in one cell with 70 years old and over.
 - I-ii.
 - Calculate number of persons for each cell in case of collection of 57,258 can be made up according to the population, multiplying 57,258 excluded 26 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
- The calculation was handled in the following 3 patterns: As for unemployment and non-labour force, the weighted value calculated with Pattern A is to be used; As for labour force of ages between 15 and 24, and 65 or over (excluding completely unemployed persons), the weighted value calculated with Pattern B is to be used; As for labour force of ages between 25 and 64, the weighted value calculated with Pattern C 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 for other age groups by gender, stratified age group, status of employment, education background.

Pattern C: 1,056 cells for 25 - 64 years old by gender, stratified age group, status of employment, education background and areas.

Japanese Panel Study of Employment Dynamics 2020

Pattern A * Hokkaido only as an example

Collection count (final effective sample)

	Age	Hokkaido								
		Labour force			Non-labour force			Unemployment		
		Below university	University or higher	Attending school	Below university	University or higher	Attending school	Below university	University or higher	Attending school
Male	15-19 years old	10	0	0	0	0	0	0	0	0
	20-24 years old	4	0	0	0	0	0	0	0	0
	25-34 years old	0	1	2	1	1	100	92	30	10
	35-44 years old	42	10	4	2	15	400	200	90	20
	45-54 years old	20	9	0	0	10	100	95	20	10
	55-64 years old	14	12	0	0	8	57	42	21	14
	65-69 years old	10	4	1	0	11	10	2	14	10
	70 years old and over	0	0	0	0	0	0	0	0	0
Female	15-19 years old	1	0	0	0	0	0	0	0	0
	20-24 years old	2	0	0	0	0	40	30	44	15
	25-34 years old	11	2	1	1	2	9	40	17	3
	35-44 years old	6	3	1	1	3	30	13	30	11
	45-54 years old	0	0	0	0	4	9	32	1	0
	55-64 years old	4	1	2	0	2	8	2	1	44
	65-69 years old	0	0	0	0	0	0	0	0	0
	70 years old and over	0	0	0	0	0	0	0	0	0

Ideal count of persons in case collection can be made according to the population construction

	Age	Hokkaido								
		Labour force			Non-labour force			Unemployment		
		Below university	University or higher	Attending school	Below university	University or higher	Attending school	Below university	University or higher	Attending school
Male	15-19 years old	0	0	0	0	0	0	0	0	0
	20-24 years old	0	0	0	0	0	0	0	0	0
	25-34 years old	1	3	2	1	1	100	92	30	10
	35-44 years old	4	4	2	1	15	400	200	90	20
	45-54 years old	10	6	0	0	1	4	10	46	10
	55-64 years old	11	10	0	0	8	57	42	21	14
	65-69 years old	8	2	0	0	10	2	10	14	10
	70 years old and over	0	0	0	0	0	0	0	0	0
Female	15-19 years old	0	0	0	0	0	0	0	0	0
	20-24 years old	0	0	0	0	0	0	0	0	0
	25-34 years old	0	0	0	0	0	0	0	0	0
	35-44 years old	0	0	0	0	0	0	0	0	0
	45-54 years old	0	0	0	0	0	0	0	0	0
	55-64 years old	0	0	0	0	0	0	0	0	0
	65-69 years old	0	0	0	0	0	0	0	0	0
	70 years old and over	0	0	0	0	0	0	0	0	0

Calculate the coefficient to make the left table figures as the same ones in right table = weighted value Pattern A

As for unemployment and non-labour force in blue frames, the weighted value calculated in this way is to be used

* For attending school cells of labour force, Pattern A is to be used only for the persons of unemployment

Pattern B & Pattern C * All over the Country and Hokkaido as an example

Collection count (final effective sample)

	Age	All over the country											
		Labour force				Non-labour force				Hokkaido			
		Below university	University or higher	Attending school	Below university	University or higher	Attending school	Below university	University or higher	Attending school	Below university	University or higher	Attending school
Male	15-19 years old	53	4	130	52	3	322	4	0	2	1	0	13
	20-24 years old	80	612	626	75	43	338	26	11	21	3	2	11
	25-34 years old	2871	2752	118	218	118	34	151	117	4	10	8	1
	35-44 years old	3745	2888	54	219	74	6	622	414	6	38	8	0
	45-54 years old	2171	1821	29	228	59	3	239	121	1	8	2	0
	55-64 years old	2427	1570	23	250	203	0	114	78	1	16	3	0
	65-69 years old	1151	679	14	643	474	14	51	17	0	38	23	0
	70 years old and over	625	492	8	575	435	8	25	17	0	17	13	0
Female	15-19 years old	91	7	287	50	6	263	6	0	12	1	0	11
	20-24 years old	333	484	69	165	40	285	36	16	22	6	1	8
	25-34 years old	2210	1438	62	612	254	20	95	48	2	33	11	0
	35-44 years old	2859	1024	35	811	343	3	123	40	3	43	12	0
	45-54 years old	2276	711	28	945	174	10	159	28	1	51	5	0
	55-64 years old	2459	495	32	1387	259	13	128	14	1	69	14	1
	65-69 years old	1028	122	6	940	172	10	59	4	1	49	4	0
	70 years old and over	421	80	4	485	88	5	20	1	0	24	2	0

Ideal count of persons in case collection can be made according to the population construction

	Age	All over the country											
		Labour force				Non-labour force				Hokkaido			
		Below university	University or higher	Attending school	Below university	University or higher	Attending school	Below university	University or higher	Attending school	Below university	University or higher	Attending school
Male	15-19 years old	2458	1992	2074	7715	2723	1348	1870	928	82	409	198	45
	20-24 years old	188	0	89	78	0	89	78	0	1209	963	296	37
	25-34 years old	432	183	387	23	4	409	22	14	1	1	0	16
	35-44 years old	1818	1488	21	104	28	31	66	53	7	3	1	1
	45-54 years old	2583	1656	0	122	33	0	101	85	0	4	1	0
	55-64 years old	2810	1853	0	170	32	0	108	63	0	9	2	0
	65-69 years old	2281	1269	0	312	129	0	81	59	0	16	6	0
	70 years old and over	1125	352	0	772	204	0	46	14	0	36	10	0
Female	15-19 years old	911	285	0	3411	901	0	33	10	0	161	42	0
	20-24 years old	207	0	101	86	0	1103	7	0	4	3	0	40
	25-34 years old	607	187	387	26	3	369	24	7	15	1	0	13
	35-44 years old	1604	1042	16	470	173	16	59	39	1	22	8	1
	45-54 years old	2489	833	0	728	240	0	101	34	0	31	11	0
	55-64 years old	2657	581	0	788	150	0	138	84	0	35	7	0
	65-69 years old	2230	345	0	1170	190	0	104	16	0	63	10	0
	70 years old and over	892	84	0	1523	70	0	38	3	0	76	3	0

Calculate the coefficient to make the left table figures as the same ones in right table = weighted value Pattern B and Pattern C

Pattern B: For labor force of 15 - 24 years old and 65 years old and over (excluding unemployment) in blue frames, the weighted value calculated in all areas of the country is used.

Pattern C: For labor force of 25 - 64 years old (excluding unemployment) in red frames, the weighted value calculated in each area is used.

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 2020

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	Attending school	Previously graduated	Attending school	Previously graduated	Attending school
		n (persons)	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated
Male	15 - 19 years old	5723	5.5	1.2	2.6	20.3	18.9	1.3	1.7	33.0	5.5	
	20 - 24 years old	1846	0.0	0.0	0.0	0.2	0.1	0.0	0.2	0.1	2.1	
	25 - 34 years old	3511	0.0	0.1	0.1	4.4	0.0	0.3	0.0	0.2	0.1	
	35 - 44 years old	4420	0.4	0.1	0.2	5.8	0.7	0.2	0.0	0.3	0.0	
	45 - 54 years old	4681	0.7	0.1	0.5	5.7	0.6	0.2	0.0	0.4	0.0	
	55 - 64 years old	3915	0.8	0.0	0.5	3.1	1.4	0.1	0.0	0.8	0.0	
	65 - 69 years old	2456	0.7	0.0	0.3	0.4	1.1	0.1	0.0	1.7	0.0	
	70 years old and over	5473	0.8	0.0	0.3	0.2	0.8	0.0	0.0	7.5	0.0	
Female	15 - 19 years old	1484	0.0	0.0	0.0	0.1	0.2	0.0	0.2	0.1	1.9	
	20 - 24 years old	1373	0.1	0.0	0.0	0.7	0.5	0.0	0.7	0.0	0.8	
	25 - 34 years old	3340	0.2	0.0	0.0	2.5	1.7	0.1	0.0	1.1	0.0	
	35 - 44 years old	4318	0.3	0.1	0.1	2.6	2.7	0.1	0.0	1.7	0.0	
	45 - 54 years old	4584	0.4	0.2	0.1	2.3	3.2	0.1	0.0	1.7	0.0	
	55 - 64 years old	3980	0.3	0.2	0.2	1.2	2.5	0.1	0.0	2.4	0.0	
	65 - 69 years old	2541	0.2	0.1	0.1	0.2	1.1	0.0	0.0	2.8	0.0	
	70 years old and over	7848	0.3	0.1	0.1	0.1	0.8	0.0	0.0	12.2	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	Attending school	Previously graduated	Attending school	Previously graduated	Attending school
		n (persons)	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated	previously graduated
Male	15 - 19 years old	11034	4.9	1.3	2.8	20.8	18.4	1.4	1.7	33.1	5.5	
	20 - 24 years old	301	0.0	0.0	0.0	0.1	0.2	0.0	0.2	0.1	2.1	
	25 - 34 years old	317	0.0	0.0	0.0	0.8	0.6	0.1	0.7	0.0	0.7	
	35 - 44 years old	686	0.2	0.1	0.1	4.5	0.7	0.3	0.0	0.2	0.1	
	45 - 54 years old	847	0.5	0.0	0.3	5.8	0.8	0.2	0.0	0.3	0.0	
	55 - 64 years old	899	0.7	0.0	0.5	5.8	0.6	0.2	0.0	0.4	0.0	
	65 - 69 years old	700	0.8	0.0	0.6	3.2	1.3	0.1	0.0	0.8	0.0	
	70 years old and over	473	0.6	0.0	0.4	0.4	1.0	0.1	0.0	1.7	0.0	
Female	15 - 19 years old	1061	0.9	0.0	0.2	0.2	0.7	0.0	0.0	7.5	0.0	
	20 - 24 years old	289	0.0	0.0	0.0	0.1	0.3	0.0	0.2	0.2	1.9	
	25 - 34 years old	304	0.0	0.0	0.0	0.7	0.8	0.0	0.7	0.1	0.8	
	35 - 44 years old	640	0.1	0.0	0.0	2.7	1.6	0.2	0.0	1.1	0.0	
	45 - 54 years old	830	0.2	0.1	0.1	2.5	2.9	0.1	0.0	1.7	0.0	
	55 - 64 years old	894	0.2	0.2	0.2	2.4	3.3	0.1	0.0	1.7	0.0	
	65 - 69 years old	766	0.2	0.2	0.2	1.2	2.6	0.1	0.0	2.4	0.0	
	70 years old and over	491	0.2	0.2	0.1	0.2	0.8	0.0	0.0	2.8	0.0	
	70 years old and over	1514	0.3	0.3	0.1	0.2	0.6	0.0	0.0	12.2	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 2020 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 2020

Statistics Bureau, Ministry of Internal Affairs and Communications "Labour Force Survey (Basic Tabulation)" December, 2019

		n (persons)			Regular employee (%)		Non-regular employee (%)	
Male	15 - 24 years old	1299	44.3	55.7				
	25 - 34 years old	3031	82.7	17.3				
	35 - 44 years old	3744	88.8	11.2				
	45 - 54 years old	3647	89.8	10.2				
	55 - 64 years old	2585	68.6	31.4				
	65 years old and over	1410	23.4	76.6				
Female	15 - 24 years old	1312	36.0	64.0				
	25 - 34 years old	2441	59.2	40.8				
	35 - 44 years old	2997	49.0	51.0				
	45 - 54 years old	3190	41.9	58.1				
	55 - 64 years old	2149	33.3	66.7				
	65 years old and over	1289	13.0	87.0				

		n (x 10,000 persons)			Regular employee (%)		Non-regular employee (%)	
Male	15 - 24 years old	286	49.0	51.0				
	25 - 34 years old	571	85.3	14.7				
	35 - 44 years old	672	90.8	9.2				
	45 - 54 years old	722	92.1	7.9				
	55 - 64 years old	504	73.0	27.0				
	65 years old and over	282	28.0	72.0				
Female	15 - 24 years old	282	41.1	58.9				
	25 - 34 years old	478	63.2	36.8				
	35 - 44 years old	569	50.4	49.6				
	45 - 54 years old	658	42.2	57.8				
	55 - 64 years old	442	32.8	67.2				
	65 years old and over	233	17.6	82.4				

<Unemployment rate by region>

Japanese Panel Study of Employment Dynamics 2020

Statistics Bureau, Ministry of Internal Affairs and Communications "Labour Force Survey (Basic Tabulation)" October - December 2019 (Seasonally adjusted values)

Hokkaido	Tohoku	Minami kanto	Kitakanto/koshin	Hokuriku	Tokai	Kinki	Chugoku/S hikoku	Kyusyu/Okinawa
2.8	2.2	2.3	2.0	1.7	1.6	2.7	2.0	2.2 (%)

Hokkaido	Tohoku	Minami kanto	Kitakanto/koshin	Hokuriku	Tokai	Kinki	Chugoku/S hikoku	Kyusyu/Okinawa
2.5	2.8	2.2	1.9	2.0	1.9	2.4	2.2	2.6 (%)

Reference (5) Calculation method of weighted values of the additional survey

<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 the entire component ratio after obtaining the weighted values of this survey in reference (3)
 - I-ii. Multiply 29,248, which is the number of valid answers of the additional survey excluding the 15 samples of overseas immigrants, by the entire component ratio of the population, and calculate the number of persons of each cell when 29,248 was collected according to 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
- For the calculation of the weighted values, 528 cells are set according to gender, age group (three categories), and area

* Hokkaido and Tohoku as an example

		Collection count (final samples)					
		Hokkaido			Tohoku		
		Persons employed		Other employment forms	Persons employed		Other employment forms
	Regular employee	Non-regular employee		Regular employee	Non-regular employee		
		728	489	214	1019	591	343
Male	15 - 19 years old	1	2	0	0	1	0
	20 - 24 years old	10	13	5	12	15	4
	25 - 34 years old	66	21	5	107	26	15
	35 - 44 years old	211	47	28	198	32	37
	45 - 54 years old	139	22	30	216	17	48
	55 - 64 years old	91	35	42	135	53	71
	65 - 69 years old	10	26	15	15	43	48
	70 years old and over	4	13	19	2	12	22
Female	15 - 19 years old	0	7	2	1	8	1
	20 - 24 years old	16	26	2	20	23	6
	25 - 34 years old	44	43	5	80	54	10
	35 - 44 years old	49	63	17	83	84	16
	45 - 54 years old	45	78	15	89	104	25
	55 - 64 years old	37	62	19	54	95	22
	65 - 69 years old	3	23	4	5	18	14
	70 years old and over	2	8	6	2	6	4



		Ideal count of persons in case collection can be made according to the population construction					
		Hokkaido			Tohoku		
		Persons employed		Other employment forms	Persons employed		Other employment forms
	Regular employee	Non-regular employee		Regular employee	Non-regular employee		
		582	434	181	978	583	376
Male	15 - 19 years old	9	4	0	0	3	7
	20 - 24 years old	13	19	7	34	32	5
	25 - 34 years old	74	17	6	130	23	14
	35 - 44 years old	110	18	12	173	15	41
	45 - 54 years old	111	16	17	176	16	43
	55 - 64 years old	66	30	30	117	48	62
	65 - 69 years old	9	19	21	12	32	48
	70 years old and over	4	14	21	2	14	33
Female	15 - 19 years old	0	13	3	4	12	0
	20 - 24 years old	18	22	2	25	27	7
	25 - 34 years old	46	34	3	82	49	13
	35 - 44 years old	43	55	14	86	82	15
	45 - 54 years old	45	67	12	79	88	25
	55 - 64 years old	30	54	14	52	92	35
	65 - 69 years old	2	34	7	4	27	21
	70 years old and over	3	18	12	3	22	7

Calculate the coefficient to make the left table figures as the same ones in right table
= weighted value