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Japan's Population Census: **Developments and Challenges**

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Introduction

- Year 2020 was the 100th anniversary of Japan's 1st modern population census. Since 1920, the census was conducted in principle every 5 years.
- In this keynote address, I would like to:
 - (1) Give an overview of the trajectory of developments of Japan's population census from 1920 to 2020;
 - (2) Discuss major challenges the census is facing, including responses to COVID-19, digitalization, aging of the census workforce, and expanding the public use of the census data;
 - (3) Examine the changing status of Japanese women, using the census data.



Developments of Japan's Population Census

Launching the Population Census in 1920

- It took 40 years (starting with the 1st pilot survey in 1879 in Yamanashi Prefecture) to prepare for the nationwide census in 1920.
- To prepare, the Population Census Act was enacted in 1902, and the temporary census bureau was open in 1918 (preceding the establishment of the National Census Bureau in 1920), appointing around 260,000 census-takers and 1.41 million personnel for data processing & tabulation.
- The 1st population census was successfully conducted as of the midnight on 1 October 1920.
- The 1920 census being the 1st data-collection attempt in Japan's history targeting all men & women of all ages, it involved all forms of PR activities which resulted in carnival-like hypes all over the country.

PR Activities for the 1st Census in 1920

Poster of the 1st Census in Hokkaido

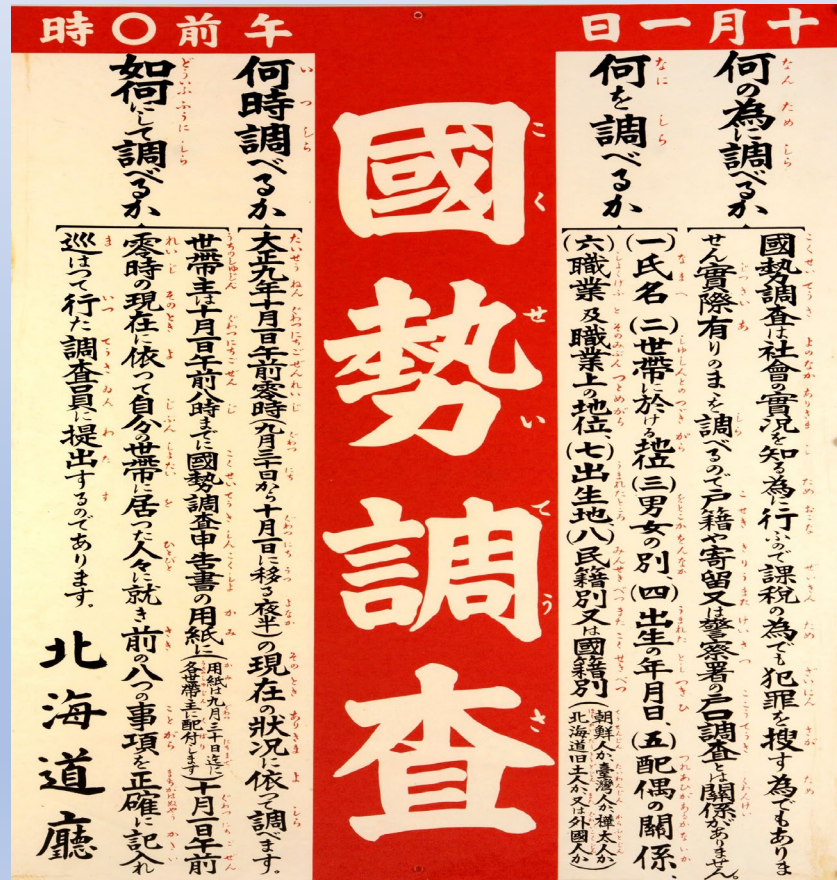


Photo of Advertising Corps for the 1st Census in Tokushima City



Prewar & Early Postwar Censuses (1920-1955): Establishing the Framework for Data Collection

- Censuses in years ending with '0' use a detailed questionnaire (long form) while those ending with '5' use a simple questionnaire (short form).
- 1st census in 1920 asked: name, relationship to household head, sex, birth date, marital status, employment status & occupation, place of birth & nationality.
- 2nd census in 1925 asked: name, sex, birth date & marital status.
- 3rd census in 1930 added industry classifications to occupation and measured daytime populations.
- 4th census in 1935 added place of usual domicile.
- 6th census in 1947 measured the labor force, rather than the employed.
- 7th census in 1950 changed the principle of data collection from current domicile to usual domicile.

Censuses during Rapid Economic Growth & Ensuing Slow Down (1960-1990) : Technological Advances & Expansion of the Scope

- 9th census in 1960 launched the use of a mainframe computer (IBM705), thereby cutting time for data processing & tabulation by half.
- 10th census in 1965 adopted optical mark readers (OMR), facilitating quick data tabulations.
- 11th census in 1970 introduced area mesh statistics, in response to rising migration.
- 12th census in 1975 began to provide marking-style answer sheets.
- 13th census in 1980 revised/added questions in response to population aging and increases in women's full-time employment & dual-earner households.
- 14th census in 1985 expanded the scope of statistics on the elderly.
- 15th census in 1990 introduced the basic enumeration blocks to facilitate data collection in response to population concentration in urban areas and expanded the scope of statistics on foreign populations.

Censuses in Recent Years (1995-2015): Further Technological Advances & Digitalization

- 16th census in 1995 enhanced safety measures for field workers; it also provided basic data for recovery from the Great Hanshin-Awaji Earthquake in January 1995.
- 17th census in 2000 began to use optical character readers (OCR), thereby facilitating faster publications of the census data tabulations.
- 18th census in 2005 launched the digital publication of the census results via the Statistics Bureau website, followed by the establishment in 2008 of *e-Stat*, the portal site for the Japanese government statistics.
- 19th census in 2010 allowed returning completed questionnaires via postal mail; it also launched the online answering system in Tokyo as a test for the nationwide online census in 2015.
- 20th census in 2015 made the online answering system available for the whole nation; the census also provided basic data to analyze the socio-demographic effects of the Great East Japan Earthquake in March 2011.

The Population Census in 2020

- 20th census in 2020 measured static conditions, as of the midnight of October 1, of the entire population living in the country.
- The self-administered questionnaires (one per household) were distributed by 613,794 field workers to all households, and collected via field workers, postal mail, and the internet.
- Field work was to be conducted from September 14 to October 20, with the submission deadline for completed questionnaire being October 7.
- Because of COVID-19 and the disasters caused by heavy rainfall in Kumamoto Prefecture in southwestern Japan in July 2020, the duration of field work was extended.

Challenges

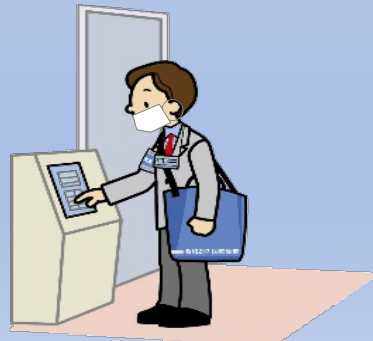
Challenge (1): Responses to COVID-19

- Because of the pandemic, the duration of field work for the 2020 census had to be extended by one month in 151 (around 9% of all) municipalities.
- Due to disasters caused by heavy rainfall, the field-work duration was also extended for 2-4 months in two municipalities in Kumamoto Prefecture in southwestern Japan.
- Though it took longer than planned to complete the field work, Japan managed to carry out the census as of October 1, as planned.
- According to the UN Statics Division survey in March 2021, among 39 countries that planned to conduct their population censuses in 2020, only 9 managed to carry it out without postponing. Japan is one of these 9 countries.
- Due to the extension of the field work period (and the subsequent extension of the period for questionnaire inspection), the starting date for publication of the census results had to be extended by up to 4 months.

One of the most formidable challenges in conducting the 2020 census pertained to the field work without face-to-face contact.

Distribution of the questionnaire

- Short explanation via intercom & leaving the questionnaire in mailbox



Collection of the questionnaire

- Promotion of the internet use for answering; if online response was difficult, encouraging the submission via postal mail



Challenge (2): Going Online

- The % answering online remains limited (38% in 2020), and the pace of increases in online answering from 2015-2020 was slow, especially outside Tokyo.
- This limited internet use was contrary to the expectation that COVID-19 would accelerate online answering. As the internet use was actively promoted in the PR for the 2020 census, the lack of notable increases was disappointing.
- The standstill was probably due in large part to distributing a hard copy of the questionnaire in tandem with documents for online answering in the 2020 census.

Year	Target area	% answering online	
		Tokyo	Japan
2010	Tokyo	8.3	--
2015	Whole country	27.1	36.9
2020	Whole country	37.6	37.9

Challenge (3): Aging of the Census Workforce

- The % of field workers aged 70+ is rising and the pace of increases is accelerating, while the proportions of workers in their 40s & 50s are shrinking.
- The proportion of young workers (under age 40) remains very low.
- Though the necessity for field workers is expected to decrease due to the ongoing digitalization, rapid aging of the census workforce is nevertheless a major concern and efforts to recruit younger field workers need to be intensified.

Year	# of field workers	<20	20-29	30-39	40-49	50-59	60-69	70+
2005	834,883	0.1	3.7	9.8	15.3	23.6	33.1	14.5
2010	679,260	0.1	3.2	9.0	13.1	18.6	36.8	19.3
2015	649,241	0.1	4.1	7.0	12.0	14.7	36.1	26.1
2020	613,794	0.2	5.4	7.0	11.2	13.5	28.9	33.8

Challenge (4): Expanding the Public Use

- Japan began to offer **the public use samples of the micro-level data** of the 2000 & 2005 censuses in 2013, and those of the 2010 & 2015 censuses in 2019. However, the number of applications for the samples has been small:

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
# applications	1	4	1	2	2	6	2	9	5	32

- The government began offering **'custom-made' tabulations of the census data** to the public in 2009 for the 1990-2005 censuses, in 2013 for the 1980 & 1985 censuses, in 2014 for the 2010 census, and in 2017 for the 2015 census. However, the number of 'orders' for custom-made tabulations has also been limited.
- It remains a big challenge to increase the public use of the census data—through the public use samples of the micro-level data, facilitating orders for custom-made tabulations, or some other means—not only among those living in Japan but also those overseas.

Status of Japanese Women as Shown by the Population Census



Measuring the Social Status of Women

- **The status of women is:**
 - (1) **multidimensional**, as are any other statuses;
 - (2) **relative**, thus it needs to be measured by comparing with men;
 - (3) **contextual** in the sense that it needs to be interpreted in the context of cultural & historical backgrounds.
- Keeping in mind these defining elements for measuring women's status, let us examine how the social status of Japanese women changed, using time-series data drawn from the population censuses.

% Graduated from Higher Educational Institutions by Age & Sex: Japan 1960-2020

	1960	1970	1980	1990	2000	2010	2020
Women							
20-24	3.9	10.8	27.6	31.9	37.3	35.5	36.5
25-29	4.3	9.7	25.6	42.5	51.2	60.3	67.6
30-34	3.5	6.7	17.4	39.6	45.4	60.1	64.7
35-39	2.6	5.1	10.8	27.1	42.5	54.2	62.3
40-44	1.9	4.6	7.5	19.0	39.6	47.6	60.9
45-49	1.8	3.8	5.5	12.2	27.3	44.4	54.6
50-54	1.8	2.7	4.9	8.7	19.2	41.3	47.8
55-59	0.9	2.7	4.0	6.2	12.1	28.3	44.4
60-64	0.6	2.7	2.7	5.5	8.4	19.5	41.6
Men							
20-24	5.3	9.1	17.1	18.6	22.1	24.5	25.5
25-29	13.7	19.6	32.1	43.2	44.7	53.0	59.9
30-34	14.7	17.3	27.0	43.5	44.5	52.1	60.2
35-39	13.7	16.0	21.4	34.4	44.8	48.9	57.2
40-44	9.7	15.7	18.0	28.2	43.9	46.9	53.8
45-49	9.0	14.8	16.3	22.1	34.6	46.4	49.7
50-54	8.3	10.7	15.8	18.6	28.0	45.4	47.6
55-59	7.2	10.1	14.8	16.8	21.7	35.7	47.4
60-64	5.5	9.8	10.7	16.1	18.0	28.9	46.7

% Never-Married by Age: Japanese Women 1950-2020

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50
1950	96.6	55.3	15.2	5.7	3.0	2.0	1.5	1.4
1955	98.3	66.5	20.6	7.9	3.9	2.3	1.7	1.5
1960	98.6	68.3	21.6	9.4	5.5	3.2	2.1	1.9
1965	98.5	68.1	18.2	9.1	6.8	4.7	3.0	2.5
1970	97.8	71.6	18.1	7.2	5.8	5.3	4.0	3.3
1975	98.6	69.2	20.9	7.7	5.3	5.0	4.9	4.3
1980	99.0	77.7	24.0	9.1	5.5	4.4	4.4	4.5
1985	98.9	81.4	30.6	10.4	6.6	4.9	4.3	4.3
1990	98.2	85.0	40.2	13.9	7.5	5.8	4.6	4.3
1995	98.9	86.4	48.0	19.7	10.0	6.7	5.6	5.1
2000	99.1	87.9	54.0	26.6	13.8	8.6	6.3	5.8
2005	99.1	88.7	59.0	32.0	18.4	12.1	8.2	7.3
2010	99.4	89.6	60.3	34.5	23.1	17.4	12.6	10.6
2015	99.4	91.8	63.2	36.6	25.5	20.5	17.1	14.9
2020	99.6	93.0	65.8	38.5	26.2	21.3	19.2	17.8

% Never-Married by Age: Japanese Men 1950-2020

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50
1950	99.5	82.9	34.5	8.0	3.2	1.9	1.5	1.5
1955	99.9	90.2	40.7	9.2	3.0	1.7	1.2	1.2
1960	99.8	91.6	46.1	9.9	3.6	2.0	1.4	1.3
1965	99.6	90.3	45.7	11.1	4.2	2.4	1.7	1.5
1970	99.3	90.1	46.5	11.7	4.7	2.8	1.9	1.7
1975	99.5	88.0	48.3	14.3	6.1	3.7	2.5	2.1
1980	99.7	91.8	55.2	21.5	8.5	4.7	3.1	2.6
1985	99.4	92.1	60.4	28.1	14.2	7.4	4.7	3.9
1990	99.7	93.6	65.1	32.8	19.1	11.8	6.8	5.6
1995	99.2	92.6	66.9	37.3	22.6	16.4	11.2	8.9
2000	99.5	92.9	69.4	42.9	26.2	18.7	14.8	12.6
2005	99.6	93.4	71.4	47.1	30.0	22.0	17.1	16.0
2010	99.7	94.0	71.8	47.3	35.6	28.6	22.5	20.1
2015	99.6	95.3	74.6	49.8	37.3	31.9	27.4	24.8
2020	99.7	95.7	76.4	51.8	38.5	32.2	29.9	28.3

In Conclusion

- As indicated by the census data on educational attainment & employment, economic opportunities of Japanese women—in both absolute and relative terms—have been improving rapidly.
- Improving status of Japanese women is one of the major socioeconomic factors of delayed & less marriage which, with little childbearing outside marriage, has in turn been causing fertility declines to & stagnation at well below-replacement levels.
- The persistence of low fertility is the major demographic factor of Japan's rapid population aging (% aged 65+ increased from 8% in 1975 to 29% in 2020, according to the census). Together with prolonged longevity in old age, this low fertility is also the major factor of the country's population decline in recent years (the population size shrank from 128 million in 2010 to 126 million in 2020).
- Japan is facing formidable demographic and socioeconomic challenges, as the country is the most aged society in the world (has been so in the recent decades), and one of the first countries in Asia to experience continuous population decline.

Thank you for your attention!

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