

Key topic

Social Inequality in the Prevalence of Working from Home under the COVID-19 Pandemic in Japan

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I. Introduction

This paper examines trends in working from home (WFH) in Japan under the spreading COVID-19 pandemic. Survey data shows the tendency that the implementation and continuation of WFH has a strong relationship with socioeconomic status—namely, occupation, educational attainment, and income level. This paper examines the social inequality of opportunities for WFH.

In Japan, telework, which refers to the way of working not restricted by location utilizing ICT devices, had been promoted in government policy even before the pandemic as a “flexible working arrangement” that contributes to work-life balance. However, most companies actually did not implement telework for various reasons.¹ Against this backdrop, the implementation of telework expanded rapidly in companies when the government issued its first state of emergency declaration in April 2020 in response to the arrival of the pandemic’s first wave.² With the government strongly urging the use of WFH, corporate behavior was seen to prioritize the prevention of infection spread over immediate economic activities as an emergency measures. However, there were many instances in which WFH was not continued after the state of emergency was lifted in stages by the end of May 2020. As of January 2022, states of emergency were subsequently declared a total of four times in areas such as Tokyo. The use of WFH has never been as widespread as it was during the first state of emergency.

Surveys conducted in various countries have

shown that not everyone has experienced WFH in the same way under the pandemic and that there are differences based on work characteristics and individual attributes. In the case of Japan, WFH expanded in response to the pandemic’s first wave and the declaration of a state of emergency in the spring of 2020. However, not everyone switched to WFH, and differences appeared in utilization rates depending on the industry and occupation. Moreover, the continuation of WFH is not uniform among people who engaged in it as “emergency measures” to the first wave, as some continued to work from home afterward, while others did not continue and returned to commute while infections were not over yet. So who have worked from home under the pandemic? Who continues to do so as their way of working amid the “new normal”? The following presents the situation surrounding the practice and continuation of WFH based on the data of “JILPT Panel Survey on the Impact of COVID-19 on Work and Daily Life” (3rd wave, December 2020 Survey).³



II. Descriptive statistics

The sample used in this paper consists of employed workers who have been continuously employed at the same company since April 2020. Let us take a look at the overall trends regarding respondents’ experience with WFH and its continuation. The JILPT survey grasps the situation whether or not respondents experienced WFH up to

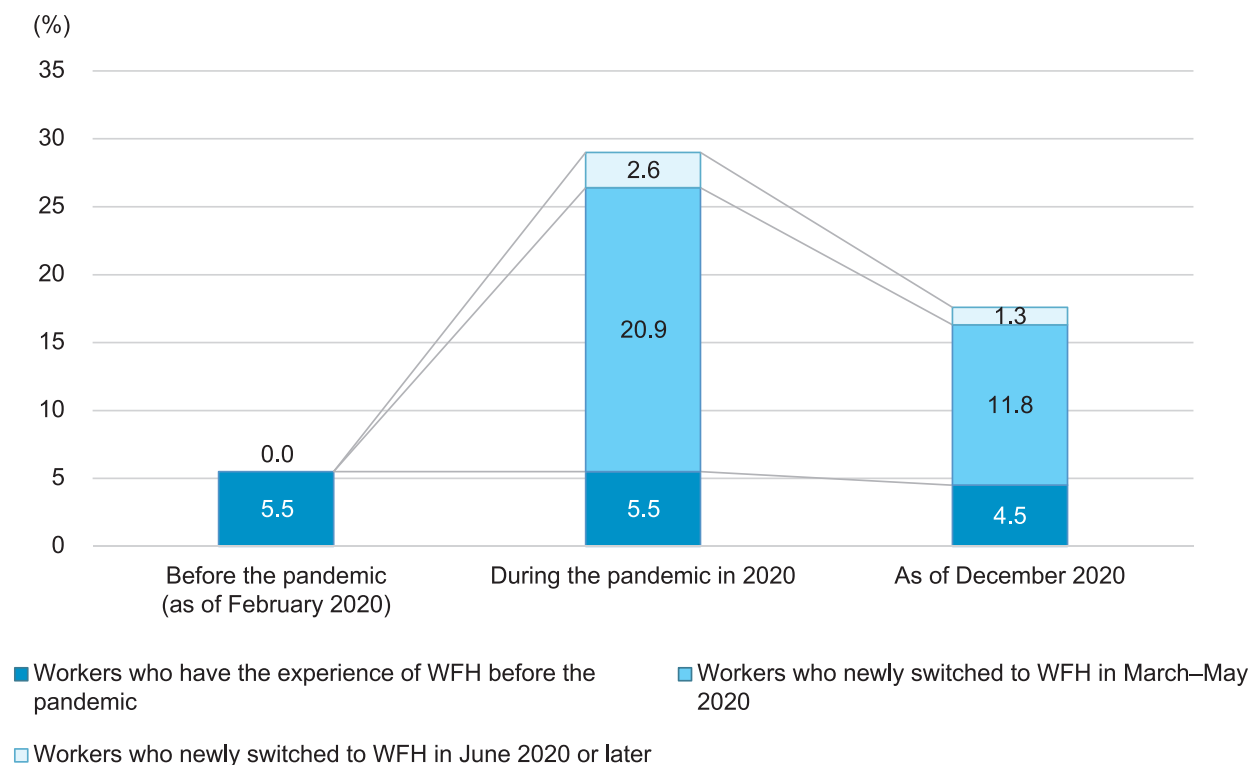


Figure 1. Percentage of workers who perform WFH at each time points

December 2020 as well as their continuation of it as of December. It also asks whether or not respondents have the experience of WFH before the pandemic. Figure 1 presents the status of respondents' working/not working from home at three time points—"before the pandemic" (as of February 2020), "during the pandemic in 2020," and "as of December 2020".⁴

Looking at overall trends, of all respondents in the sample, 29.0% worked from home "during the pandemic in 2020." Given that the percentage of those who have the experience of WFH "before the pandemic (as of February 2020)" was 5.5%, this suggests that WFH expanded significantly under the pandemic, particularly during the period from March to May 2020.⁵ The percentage of respondents who indicated that they worked from home "as of December 2020" was 17.6%; those respondents accounted for 60.6% of respondents who worked from home during the pandemic in 2020. In other words, there is a trend whereby about 30% of employed workers experienced WFH under the pandemic, and, of them, about 60% continue to do

so.

Table 1 shows trends in the practice and continuation of WFH by individual attribute.⁶ The percentages of respondents who worked from home vary by educational background, industry, occupation, size of enterprise, individual annual income, region of residence, and other attributes. Looking at industries, information and communications (73.9%); education, learning support (47.8%); and finance and insurance, real estate (46.8%) have high percentages, while medical, health care and welfare (7.3%) and accommodation and food services (6.9%) have low percentages. Looking at differences depending on occupation, administrative and managerial workers (section manager level or higher) (57.1%) and professional and engineering workers (39.2%) are high, while production/skilled workers (6.7%) are low. As for educational background, respondents who are university graduates (44.1%) have a higher percentage than respondents who are not university graduates (15.9%). Additionally, regular employees (35.7%) have a higher percentage than non-regular employees

Table 1. Practice and continuation of WFH during the pandemic in 2020 (by individual attribute)

		Worked from home during the pandemic in 2020 (yes or no)		N	Continue to work from home as of December 2020 (among people who worked from home "during the pandemic in 2020") (yes or no)		N
		Yes	No		Yes	No	
Total		28.9%	71.1%	2,885	60.6%	39.4%	835
Age group	20–29 years old	27.6%	72.4%	355	51.0%	49.0%	98
	30–39 years old	28.4%	71.6%	580	67.9%	32.1%	165
	40–49 years old	28.2%	71.8%	917	56.4%	43.6%	259
	50–59 years old	30.9%	69.1%	776	65.8%	34.2%	240
	60–64 years old	28.4%	71.6%	257	54.8%	45.2%	73
Sex	Male	35.1%	64.9%	1,622	63.3%	36.7%	569
	Female	21.1%	78.9%	1,263	54.9%	45.1%	266
Marital status	Married	32.4%	67.6%	1,545	62.5%	37.5%	501
	Unmarried	24.9%	75.1%	1,340	57.8%	42.2%	334
Educational Background	University graduates	44.1%	55.9%	1,334	63.8%	36.2%	588
	Non-university graduates	15.9%	84.1%	1,551	53.0%	47.0%	247
Type of employment	Regular employee	35.7%	64.3%	1,987	60.9%	39.1%	709
	Non-regular employee	14.0%	86.0%	898	58.7%	41.3%	126
Industry	Construction	28.1%	71.9%	160	40.0%	60.0%	45
	Manufacturing	34.2%	65.8%	687	66.8%	33.2%	235
	Electricity, gas, heat supply and water	26.8%	73.2%	41	54.5%	45.5%	11
	Information and communications	73.9%	26.1%	161	84.0%	16.0%	119
	Transport	19.3%	80.7%	181	40.0%	60.0%	35
	Wholesale and retail trade	19.9%	80.1%	392	57.7%	42.3%	78
	Finance and insurance, and Real estate	46.8%	53.2%	218	55.9%	44.1%	102
	Accommodations, eating and drinking services	6.9%	93.1%	72	80.0%	20.0%	5
	Medical, health care and welfare	7.3%	92.7%	385	42.9%	57.1%	28
	Education, learning support	47.8%	52.2%	92	40.9%	59.1%	44
	Services (not elsewhere classified)	27.0%	73.0%	371	53.0%	47.0%	100
	Others	26.4%	73.6%	125	66.7%	33.3%	33
Occupation	Administrative and managerial workers	57.1%	42.9%	289	61.2%	38.8%	165
	Professional and engineering workers	39.2%	60.8%	577	67.7%	32.3%	226
	Clerical workers	33.1%	66.9%	735	58.4%	41.6%	243
	Sales workers	29.2%	70.8%	414	56.2%	43.8%	121
	Service workers	12.5%	87.5%	271	58.8%	41.2%	34
	Production/skilled workers	6.7%	93.3%	493	36.4%	63.6%	33
	Others	12.3%	87.7%	106	76.9%	23.1%	13
Size of enterprise	29 or fewer employees	15.2%	84.8%	564	59.3%	40.7%	86
	30–299 employees	24.2%	75.8%	897	52.1%	47.9%	217
	300–999 employees	33.9%	66.1%	381	65.1%	34.9%	129
	1,000 or more employees	46.4%	53.6%	806	64.7%	35.3%	374
	Do not know	12.2%	87.8%	237	55.2%	44.8%	29
Years of service	Less than 5 years	24.9%	75.1%	947	57.6%	42.4%	236
	Less than 5–10 years	23.3%	76.7%	647	55.0%	45.0%	151
	Less than 10–20 years	28.0%	72.0%	683	65.4%	34.6%	191
	20 or more years	42.3%	57.7%	608	63.0%	37.0%	257
Individual annual income before the pandemic (2019)	Less than 3 million yen	14.1%	85.9%	1,185	52.7%	47.3%	167
	3 million yen to less than 5 million yen	26.2%	73.8%	864	52.2%	47.8%	226
	5 million yen to less than 7 million yen	40.9%	59.1%	472	62.7%	37.3%	193
	7 million yen or more	68.4%	31.6%	364	71.9%	28.1%	249
Region of residence	Tokyo metropolitan area (4 prefectures)	40.1%	59.9%	891	71.1%	28.9%	357
	Kansai (3 prefectures)	30.4%	69.6%	388	59.3%	40.7%	118
	Other regions	22.4%	77.6%	1,606	50.6%	49.4%	360
Experience of WFH before the pandemic	Workers who have the experience of WFH before the pandemic	-	-	-	82.3%	17.7%	158
	Workers who newly switched to WFH in March-May 2020	-	-	-	56.3%	43.7%	602
	Workers who newly switched to WFH in June 2020 or later	-	-	-	49.3%	50.7%	75

Note: Individual attributes (Age, marital status, educational background), type of employment, industry, occupation, size of enterprise, years of service and region of residence are based on the information as of April, 1, 2020.

(14.0%). There are also differences depending on size of enterprise, as large enterprises with 1,000 or more employees (46.4%) have a high percentage. Differences also exist depending on income level, as, when looking at individual annual income before the pandemic (2019), the high income group of 7 million yen or more has a high percentage (68.4%), while the low income group of less than 3 million yen has a low percentage (14.1%).

Next, let us examine the percentage of those who continued WFH among workers who worked from home during the pandemic in 2020. Here, too, differences emerge when looking at industries and occupations. Looking at those differences by industry, the percentage of those who continue to work from home is high in the information and communication (84.0%). In contrast, education, learning support, which had a comparatively high work-from-home percentage for “during the pandemic 2020,” has a low percentage of respondents who continue to do so (40.9%). Differences are also apparent in terms of income level and region of residence. Looking at income levels, a high continuation rate is seen in the high income group of 700 million yen per year or more (71.9%) but relatively low in the low income level. And by region of residence, the continuation rate is high for the Tokyo metropolitan area (71.1%). Furthermore, there are differences depending on the experience of WFH before the pandemic, as there is a relatively low continuation rate among those who newly switched to WFH after the pandemic arrived (in or after March 2020).

III. Estimation results

Based on the basic statistics described above, a regression analysis is conducted to explore what the determinants of the practice and continuation of WFH under the pandemic are. First regression is performed with the practice of WFH during the pandemic in 2020 as the explained variable for full sample (Analysis (1)). Then second regression is performed with whether or not WFH is continued as of December 2020 as the explained variable for those who practiced (experienced) WFH (Analysis

(2) and (3)).

The results are presented in Table 2. It can be seen that the practice of WFH depends on educational background, type of employment, industry, occupation, size of enterprise, individual annual income, and region of residence (1). By level of educational background, university graduates were more likely to practice WFH, and by type of employment, non-regular employees tended not to work from home. By industry, workers in information and communications and education, learning support were more likely to practice WFH but workers in transport; wholesale and retail trade; accommodation and food services; and medical health care and welfare were less likely to practice WFH. By occupation, administrative and managerial workers, professional and engineering workers, clerical workers, sales workers, and service workers were more likely to work from home than production/skilled workers. And by size of enterprise, workers in large corporations were more likely to work from home than workers in enterprises with 29 or fewer employees. Moreover, workers with higher individual annual income before the pandemic (2019) were more likely to work from home. Residents of the Tokyo metropolitan area tended to work from home.

Regarding whether or not workers continue to work from home as of December 2020, the results indicate that type of employment, industry, occupation, individual annual income, and region of residence are relevant (2). Conspicuous differences of tendency in continuation by industry are thought to depend on whether the nature of work is suitable for WFH. Additionally, there are differences in terms of individual annual income before the pandemic, and workers with higher income levels were more likely to practice WFH and continue that practice as a “new normal” way of working.

When the variable regarding the experience of WFH before the pandemic is also taken into account (3), it is shown that workers who newly switched to WFH after the pandemic’s arrival (i.e., workers who “worked from home for the first time in March-May 2020” or who “worked from home for the first time in June 2020 or later”) are less likely to continue

Table 2. Determinants in practice and continuation of WFH (logistic regression)

Explained variable	(1)		(2)		(3)	
	Practice of WFH		Continuation of WFH as of December 2020			
Target sample	Full sample		Workers who worked from home			
Model			Model 1		Model 2	
	B	S.E.	B	S.E.	B	S.E.
Age	-.003	.006	-.006	.010	-.009	.010
Female	.104	.130	-.079	.203	-.082	.208
Married	.165	.109	.131	.175	.112	.180
University graduates	.679	.112 **	.118	.186	.089	.191
Non-regular employee	-.494	.157 **	.614	.266 *	.545	.270 *
Industry (ref. manufacturing)						
Construction	-.293	.229	-1.080	.358 **	-1.223	.371 **
Electricity, gas, heat supply and water	-.641	.403	-.261	.638	-.226	.642
Information and communications	1.135	.224 **	.893	.304 **	.739	.310 *
Transport	-.498	.242 *	-1.032	.409 *	-1.018	.417 *
Wholesale and retail trade	-.497	.190 **	-.076	.298	-.097	.304
Finance and insurance, and Real estate	-.011	.192	-.538	.266 *	-.511	.271 †
Accommodations, eating and drinking services	-1.232	.575 *	1.229	1.242	1.177	1.243
Medical, health care and welfare	-2.262	.378 **	-.554	.618	-.639	.630
Education, learning support	.929	.272 **	-1.209	.391 **	-1.136	.397 **
Services (not elsewhere classified)	-.036	.179	-.572	.274 *	-.791	.285 **
Others	.112	.258	.196	.420	.150	.428
Occupation (ref. production/skilled workers)						
Administrative and Managerial workers	1.850	.256 **	.288	.468	.333	.477
Professional and engineering workers	1.959	.229 **	.982	.438 *	.992	.444 *
Clerical workers	1.929	.223 **	.920	.436 *	.926	.441 *
Sales workers	1.714	.244 **	.607	.453	.555	.460
Service workers	1.191	.297 **	1.450	.561 *	1.401	.569 *
Others	.708	.381 †	1.825	.828 *	1.801	.827 *
Size of enterprise (ref. 29 or fewer employees)						
30–299 employees	.397	.162 *	-.528	.287 †	-.441	.290
300–999 employees	.533	.189 **	-.058	.321	.138	.327
1,000 or more employees	.949	.167 **	-.314	.292	-.274	.296
Do not know	.127	.271	-.399	.485	-.300	.495
Years of service	.000	.007	.003	.010	.001	.010
Individual annual income before the pandemic (2019)	.002	.000 **	.001	.000 **	.001	.000 **
Region of residence (ref. other regions)						
Tokyo metropolitan area (4 prefectures)	.446	.114 **	.737	.178 **	.722	.182 **
Kansai (3 prefectures)	.188	.152	.321	.234	.254	.239
Experience of WFH before the pandemic (ref. Workers who have the experience of WFH before the pandemic)						
Workers who newly switched to WFH in March-May 2020					-1.311	.246 **
Workers who newly switched to WFH in June 2020 or later					-1.389	.343 **
Constant	-3.898	.341 **	-.918	.609	.354	.660
Chi-square value		988.366 **		131.993 **		165.849 **
2 log-likelihood		2483.089		987.757		953.901
Nagelkerke R ²		0.415		0.198		0.244
N		2,885		835		835

Note: * $p < .05$; ** $p < .01$; † $p < .10$.

WFH than those who have the experience of WFH before the pandemic. This suggests that although WFH became widespread during the pandemic's spread, it is having difficulty taking root.

IV. Conclusions

Although the use of WFH spreads in Japan under the COVID-19 pandemic, particularly following the first declaration of a state of emergency in April and

May 2020, but has not fully taken root since then as the spread of infection is not over yet. This paper considered the large differences that exist in the practice and continuation of WFH as they relate to individual attributes. First, there are differences in the experience of WFH relating to educational background, type of employment, industry, occupation, size of enterprise, income level, and region of residence. Specifically, white-collar workers (such as managerial workers and professionals), workers in large corporations, high-income groups, and highly educated groups tended to practice WFH. Additionally, occupation and income level tended to have a bearing on whether or not WFH was continued. Occupation, educational background, and income level have been treated as indicators of a person's socioeconomic status. A person's type of employment and the size of his or her employing enterprise are also significantly related to his or her socioeconomic status in the Japanese context. In brief, the findings of this paper show that there are social class-based differences in work-from-home opportunities under the pandemic. The option of WFH was not equally available to everyone under the pandemic, indicating that social inequity exists in terms of work-from-home opportunities.

Inequity of work-from-home opportunities has a lot to do with job characteristics and job skill levels. For example, the fact that white-collar work and jobs in the information and communications industry had characteristics that are more suited to WFH and that larger companies were more likely to have systems for such work in place may be behind the differences in work-from-home rates. Given that infections continue to spread, however, class disparities in work-from-home opportunities can lead to disparities in the stability of working

conditions, infection risk, and well-being, and therefore cannot be overlooked from the standpoint of social equality. Society as a whole should expand possibilities for WFH by measures such as making work content and procedures more feasible to WFH or raising workers' skill levels.

1. For instance, the reasons cited by companies for not using telework in a JILPT corporate survey conducted in 2014 included difficulties in managing progress and working hours and problems in ensuring information security.
2. WFH's expansion in April-May 2020 is shown in JILPT (2020). See also Okubo (2020), which is based on another survey.
3. For the survey's design and an overview of its findings, see JILPT (2021).
4. Regarding the figures for "during the pandemic in 2020," respondents who indicated that they practiced WFH at any time during that period were counted as "worked from home." Figures for "before the pandemic (as of February 2020)" indicate the percentages of respondents who have the experience of WFH before the pandemic among those who practiced WFH under the pandemic.
5. Of those who worked from home under the pandemic in 2020, 72.1% reported that they first experienced it between March and May 2020.
6. The individual attributes and employment situation discussed here are based on information current as of April 1, 2020.

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