

# Telework as a Long-term Solution: Problems and Contradictions to overcome

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COVID-19 has spread throughout the world since January 2020, and people are being requested to stay at home and refrain from going out. Telework has drawn attention as an effective means of enabling people to keep working and preventing the spread of infectious diseases. The Japanese government has strongly suggested that all workers should utilize telework from home from February 2020.

In this opinion paper, we report on the results of a survey conducted by Keio University and NIRA on telework as it relates to Japanese workers and discuss problems associated with telework and its impact on lifestyle and work styles. According to the survey, the rate of utilization of telework increased significantly between January 2020 (pre-pandemic) and March 2020 (during the pandemic). However, the rate of utilization of telework varies across industries, occupations, regions, and company size. It is difficult to broadly and uniformly encourage telework for all workers.

Telework is clearly not suitable to some industries and occupations. Telework involves numerous problems and difficulties in relation to company organization, the work environment, and individual workers in many industries and occupations. In particular, face-to-face services (e.g. food and drink, accommodation) are not suited to telework at all. In spite of this, these industries have been requested to shut down for the containment of COVID-19. Even if the government has sought telework to be employed, workers in these industries cannot physically telework. The provision of government support to these industries is therefore an urgent matter under the current circumstances.

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## Introduction

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## COVID-19 and Telework in Japan

The COVID-19 virus commenced its worldwide spread in January 2020, and was declared a pandemic in March 2020. Against this background, Japan is an exceptional case. The number of infections and deaths in Japan has been much lower than in the United States and Europe. Japan has also not completely closed its national borders or locked down its cities. While the government has requested citizens to take time off work and to refrain from going out, economic activity has continued since February 2020. Rather than instituting a complete lockdown or attempting to control the population with penalties, the government's policy response has been to request people to refrain from leaving their houses, and to encourage telecommuting and telework, without penalties and punishment. This is unheard of among the developed nations, with the exception of Sweden.

At the same time, Japan is known to have the lowest use of telework among the developed nations. According to Ministry of Land, Infrastructure, Transport and Tourism (2016), 85% of firms and establishments have introduced telework systems in the United States, 38% in the United Kingdom, and 22% in Germany, but only 11% in Japan.<sup>2</sup> In Japan, despite strong

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<sup>2</sup> Ministry of Land, Infrastructure, Transport and Tourism (2016) "Government Initiatives towards the Promotion of Telework" [https://www.soumu.go.jp/main\\_content/000433143.pdf](https://www.soumu.go.jp/main_content/000433143.pdf)

promotion of teleworking by the government and companies in recent years, the utilization rate has remained low. Japan is therefore an interesting case study for the investigation of how the shock of the COVID-19 pandemic may lead to the promotion of telework.

## **Telework as a Measure to prevent the Transmission of Infectious Diseases**

Telework has recently attracted attention as a means of improving work styles and quality of life. With the support of various government and private initiatives, telework has gained ground as a viable alternative to traditional work styles in recent years. Although the mechanisms that will fully enable telework are not yet in place, it is regarded as a means of increasing labor productivity and work efficiency by reducing commuting and increasing flexibility in working hours, giving workers more time for their daily lives.

As opposed to previous efforts to promote telework to enable better working styles, telework is currently being promoted as a measure against the spread of infectious diseases. The Japanese government has requested citizens to exercise restraint in leaving their homes, in addition to calling for services such as restaurants and retail stores to restrict their activities or close entirely. The government has instead asked all businesses to promote telework. A number of cases can be pointed to in which telework has been introduced at the request of employers. It may also be the case that even if some occupations and industries are not suited to teleworking, many workers have been forced to telework. It is clearly extremely difficult to balance economic activities with measures against infectious diseases while dealing with institutional and environmental problems.

## **Overview of Survey Results**

In April 2020, Keio University and NIRA conducted a survey on telework entitled "Questionnaire Survey on the Effects of the Spread of COVID-19 on Telework-based Work Styles, Lifestyle, and Awareness". The sample was 10,516 workers living in Japan. The questionnaire asked about the employment status, living situation, and awareness of workers as of January and March 2020.<sup>3</sup>

First, telework must be defined. In general, telework refers to a way of working that is not bound by time and space, using information and communications technology (ICT). In our survey, telework was defined as working at a specific place (at home or in a public facility) for a specific number of hours using ICT. Our definition therefore does not include the use of ICT devices at locations such as stations, airports, transportation facilities, and the premises of business partners.

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<sup>3</sup> The questionnaire survey and data analysis were conducted by Toshihiro Okubo, Kiwamu Kato, Senior Architect for Future Corporation, and Atsushi Inoue, Kozue Sekijima, and Hironari Masuhara of NIRA. This is website-base survey by Nikkei Research, Co..

See also

OKUBO Toshihiro and NIRA (2020), "Report on the Results of a Questionnaire Survey concerning the Impact of the Use of Telework to respond to the Spread of the COVID-19 on Working Styles, Lifestyles, and Awareness" [https://nira.or.jp/outgoing/report/entry/n200430\\_965.html](https://nira.or.jp/outgoing/report/entry/n200430_965.html) (in Japanese)

OKUBO Toshihiro and NIRA (2020), "Results of a Questionnaire Survey concerning the Impact of the Use of Telework to respond to the Spread of the COVID-19 on Working Styles, Lifestyles, and Awareness (Preliminary Report)" [https://nira.or.jp/outgoing/report/entry/n200417\\_963.html](https://nira.or.jp/outgoing/report/entry/n200417_963.html) (in Japanese)

Our survey found that the national average telework utilization rate as of March 2020 was 10%, as compared to 6% in January. The utilization rate therefore increased by about 4% in only two months.

The survey also revealed three main findings regarding telework.

(1) There are more teleworkers in the information services industries and fewer in the face-to-face service work and manual labor industries.

With regard to industry type, communications and information services (27%) and information services and research (23%) have the highest telework utilization rates, while restaurants and accommodation (4%) and medical care and welfare (2%) have the lowest rates (Figure 1).

Turning to occupation, management consultants (51%), researchers (28%), and data processing and communication engineers (25%) display high rates of utilization of teleworking, while doctors, dentists, veterinarians, and pharmacists (3%), public health nurses, midwives, and nurses (2%), workers involved in carrying, cleaning, packaging, and related industries (2%), manufacturing process workers (2%), food and drink / cooking and customer service workers (2%), and construction and mining workers (0%) display a low rate (Figure 2). This indicates that industries and occupations related to information have a comparatively high rate of utilization of telework, while telework is not suited to face-to-face services and manual labor. In terms of growth in utilization between January and March, the telework utilization rate almost doubled in accounting, clerical work, and sales and retail. This indicates that the utilization of telework rapidly spreads across the entire spectrum of office work.

Figure 1: Rate of utilization of telework by industry category

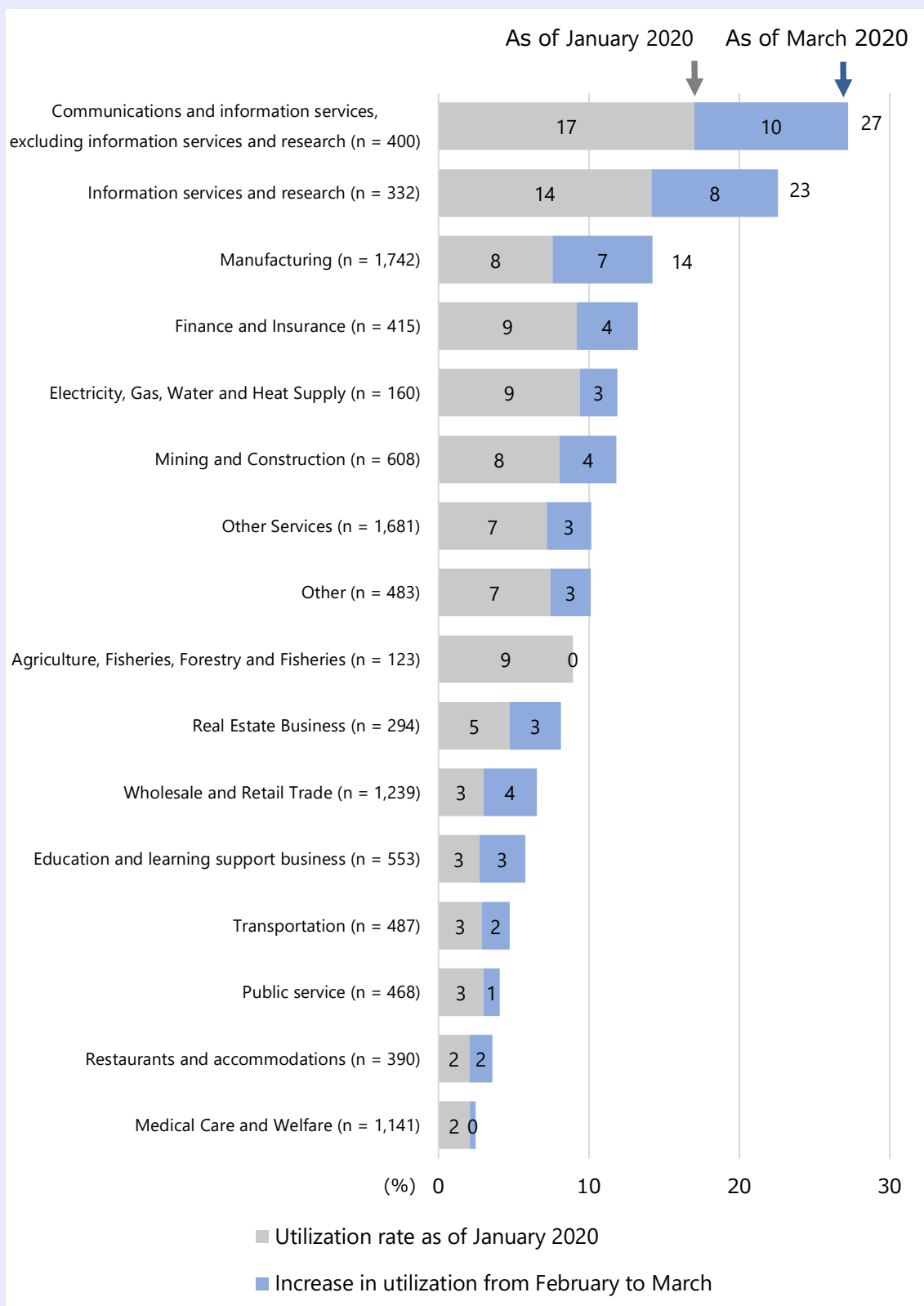
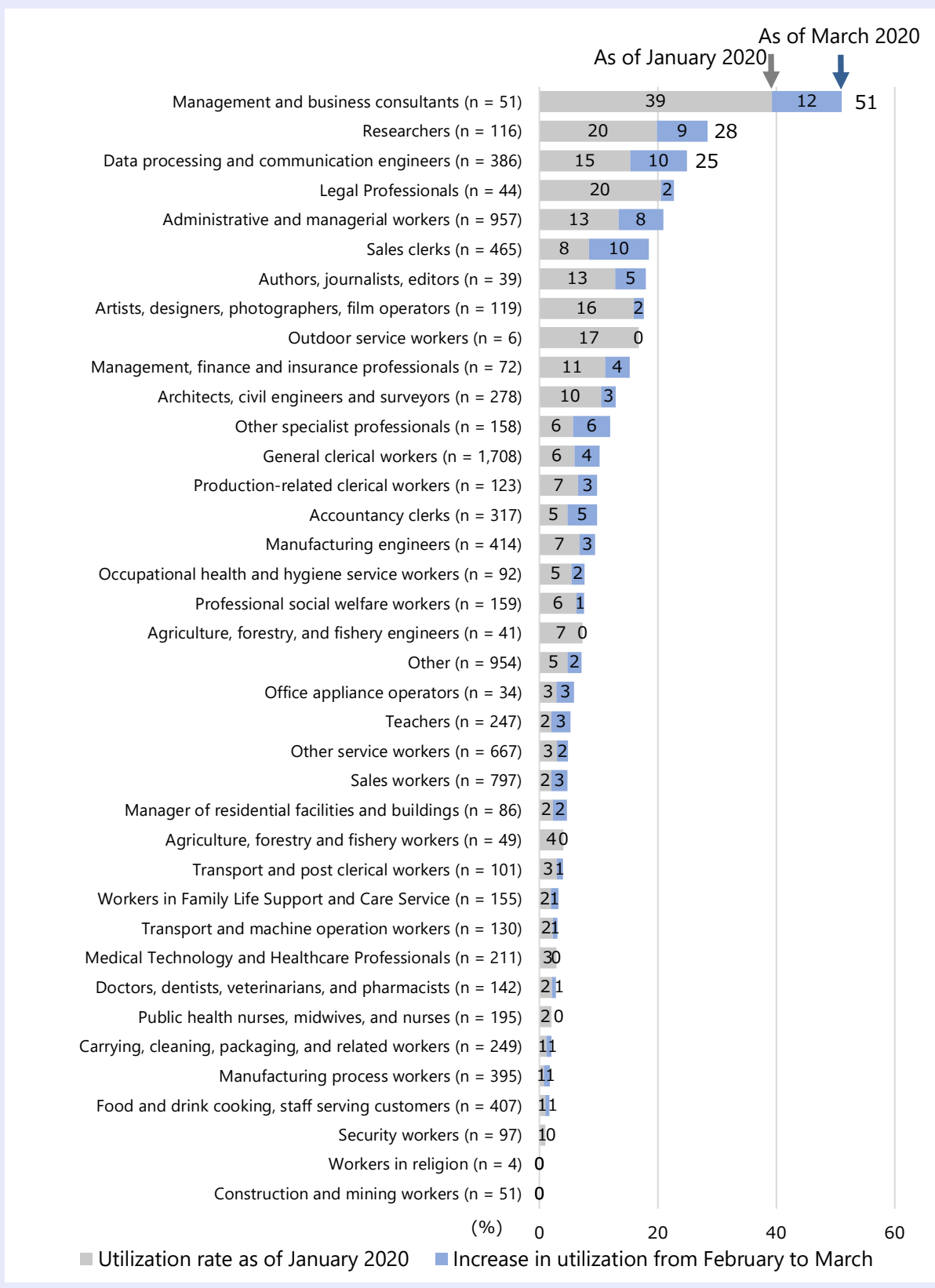


Figure 2: Utilization rate by occupational category

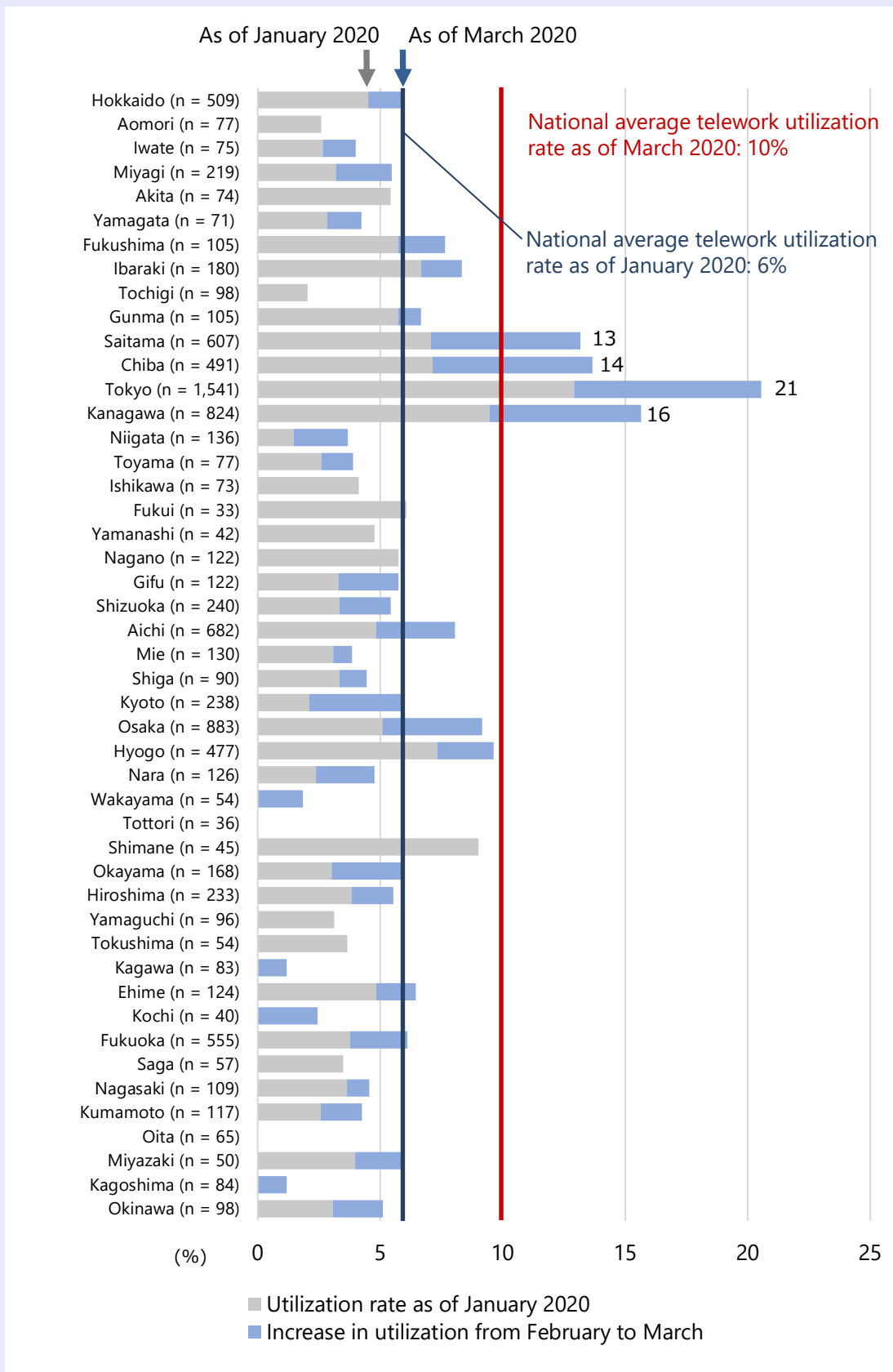


(2) There are more teleworkers in urban areas and fewer in rural areas.

The rate of utilization of telework differs depending on region. Figure 3 shows the telework utilization rate by prefecture. Tokyo has the highest rate at 21%, followed by Kanagawa (16%), Chiba (14%) and Saitama (13%). The rate of utilization of teleworking displayed the greatest increase between January and March 2020 in Tokyo. This may be related to strong government recommendations to utilize telework in the greater Tokyo metropolitan area and Osaka.

On the other hand, utilization rates are generally low in rural areas, largely due to industrial structure. In prefectures that rely mainly on agriculture, forestry and fisheries, it is less likely that telework will be used. By contrast, the Tokyo metropolitan area features a concentration of large numbers of white-collar workers in corporate headquarters and service industries, and these are well suited to telework.

Figure 3: Telework utilization rate by prefecture (Residential basis)





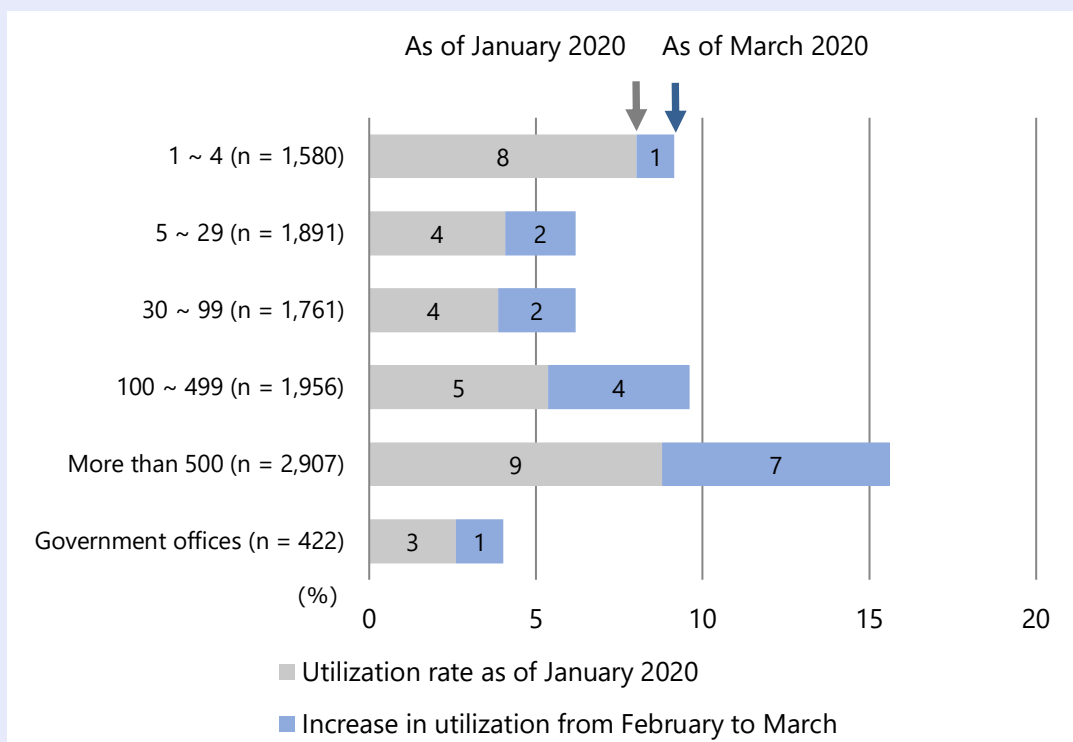
(3) There are fewer teleworkers in small and medium-sized enterprises.

In terms of job status, corporate executives have the highest telework rate (20%) and non-regular employees the lowest (4%). Corporate executives frequently use ICT for such purposes as coordination of departments and teleconferencing. Telework appears to be useful in facilitating company management. By contrast, the tasks performed by non-regular employees might not be suited to telework, or their companies might not provide adequate environments for teleworking.

With regard to company size, the rate of utilization of telework increases as the number of employees increases, reaching 16% in firms with 500 or more employees (Figure 4). The rate of utilization in the public sector is the lowest at 4%.

The larger the company, the greater the number of employees that commenced teleworking between January and March 2020. This is because large companies have tended to review their employees' working styles in Japan's current movement towards work reform. On the other hand, the utilization of telework among SMEs remains the same, because SMEs cannot afford investment in ICT. It will be important not only to promote investment in ICT (the "hard" aspect), but also to improve "soft" aspects such as the employment environment. Task coordination at the team level within a company will facilitate the use of telework.

Figure 4: Telework utilization rate by enterprise size



### Three Types of Impediment to Telework

We will now consider how workers experience problems and impediments in relation to teleworking during the COVID-19 pandemic (Table 1). Questions regarding problems and impediments were classified into three categories.

The first category included a set of questions regarding problems related to company organization. The impediments involved lack of file sharing, and problems with electronic payments, digitization of data and documents, and information security. Questions in the second category asked about the working environment. The questions addressed whether computers and peripheral devices were available at home, whether the workers' children disturbed their teleworking, whether their colleagues and business partners were able to see the progress and outcomes of their work, and whether they were able to receive proper evaluation of their own outcomes. The third category involved a set of questions on lack of ability of the individuals involved, for example a low level of ICT knowledge or feelings of anxiety.

As shown in Table 1, many problems and impediments which workers experience do not always correspond with the suitability or unsuitability for telework of their occupation or industry. Table 1 shows the percentage of people for whom their job is suitable or unsuitable for telework (the first column), with the percentage of people experiencing impediments or problems within the three categories shown in the second to fourth columns. For each question, grey cells indicate occupational categories with higher rates of problems facing the use of telework, and blue cells indicate occupational categories with lower rates.

First, many workers in the electricity, gas and water provision industries see many problems in all three impediment categories. A high percentage of workers in financial and insurance businesses also experience serious problems in relation to telework. Nevertheless, these industries saw a high rate of utilization of telework as of March 2020, as Figure 1 shows. Despite this high rate of utilization of telework, workers in these industries feel that their jobs are unsuitable to telework (the first column of Table 1), in addition to experiencing the three types of impediments. Because government regulations in these industries are relatively stringent, rigorous information security and administrative procedures are likely to represent impediments to teleworking.

Next, many workers in service industries such as the food and drink, accommodation, education, and medical industries feel that their tasks are unsuitable for telework (the first column of Table 1). In accord with this, the telework utilization rate is extremely low in these industries (Figure 1). However, these industries see few impediments in the three categories. In other words, it would be difficult for individuals in these industries to telework in the current circumstances, but some telework would be possible in the areas of management and human resources. Furthermore, technological progress could solve the problems being encountered. For example, in the field of medicine, new services involving remote surgery and online diagnosis using robots or virtual reality (VR) will promote telework in the near future. Similarly, on-line education and automated delivery services will increase the utilization of telework.

While a comparatively high percentage of workers in the real estate, mining and construction industries believe that their jobs are suited to telework, the actual rate of use of telework is not high in these industries (Figure 1). In spite of few impediments in terms of company organization, a considerable number of workers see certain problems and impediments in relation to their own ICT knowledge. It might therefore be necessary to implement reforms in these industries, such as upgrading the skills of the workers themselves.

Table 1: Problems and Impediments in relation to Telework by Industry

Industry	Telework does not suit one's profession or occupation or systems	Related to company and organizational systems						Related to the working environment						Related to individual ability or awareness	
		No external access to company or office servers	There is no environment for sharing files	The environment for electronic approval for documents, document processing and accounting is not in place	Material and documents are not or cannot be digitized	Being burdened with one's own communications costs	Concerns about information security and information management	Difficulty in evaluating results from companies, customers, business partners, etc.	Difficultly grasping the progress of work by other employees, customers, and business partners when at home	Necessity to take care of children and family work from home	PGs, printers, desks, etc., are not available for environment at home	Inadequate Internet and communications environment at home	Holding of Web-based meetings	Anxiety and discomfort about not being able to talk with colleagues	Insufficient knowledge of ICT (information and communication technology)
Information services and research (n = 332)	14%	17%	12%	12%	11%	9%	13%	7%	11%	6%	12%	8%	8%	10%	8%
Communications and information business, excluding information services and research (n = 400)	15%	16%	11%	12%	12%	11%	15%	10%	12%	11%	14%	9%	9%	12%	11%
Mining and construction (n = 608)	18%	13%	13%	11%	12%	10%	13%	9%	11%	9%	16%	9%	8%	13%	11%
Real estate business (n = 294)	18%	9%	12%	12%	11%	11%	12%	9%	10%	9%	15%	9%	6%	9%	13%
Transportation (n = 487)	19%	12%	10%	9%	11%	9%	10%	4%	8%	7%	10%	6%	5%	7%	9%
Other services (n = 1,681)	19%	10%	10%	10%	10%	7%	10%	6%	9%	6%	9%	6%	5%	8%	8%
Agriculture, forestry and fisheries (n = 123)	19%	10%	15%	15%	13%	12%	13%	11%	9%	12%	8%	11%	9%	11%	12%
Other (n = 483)	20%	9%	10%	12%	10%	7%	12%	8%	7%	6%	9%	5%	4%	10%	8%
Wholesale and retail trade (n = 1,239)	21%	11%	11%	12%	12%	8%	11%	8%	8%	7%	11%	5%	5%	8%	9%
Manufacturing (n = 1,742)	24%	14%	13%	15%	13%	8%	13%	10%	13%	9%	15%	8%	8%	13%	11%
Public service (n = 468)	25%	21%	17%	16%	17%	8%	18%	9%	10%	7%	14%	7%	5%	10%	8%
Electricity, gas, water, heating (n = 160)	26%	22%	19%	21%	18%	15%	20%	12%	13%	15%	20%	12%	10%	13%	16%
Restaurant and lodging business (n = 390)	26%	7%	7%	7%	8%	10%	8%	5%	5%	7%	9%	5%	3%	8%	8%
Finance and insurance (n = 415)	27%	18%	15%	14%	16%	10%	20%	12%	15%	10%	17%	9%	10%	14%	11%
Education and learning support business (n = 553)	28%	13%	13%	13%	10%	9%	14%	6%	8%	8%	10%	7%	6%	10%	10%
Medical care and welfare (n = 1,141)	28%	10%	11%	11%	10%	8%	11%	6%	7%	9%	8%	5%	4%	10%	9%

## The Pandemic Shock is greatest in Industries unsuited to Telework

The rate of use of teleworking varies across industries and occupations. Various problems arise in regard to company organization, working environments, and individual abilities. At the same time, specific industries saw a significant decline in income, working hours, and happiness among workers. We found that occupations less suited to telework and with fewer teleworkers tended to be more negatively affected by the COVID-19 pandemic shock. Figure 5 shows the rate of change in income between January and March by occupational category. Figure 6 shows changes in working hours, and Figure 7 shows changes in the happiness of workers in their daily lives. We found that about half of workers in the food and drink and accommodation industries saw a

significant decline in income, working hours, and happiness. Furthermore, workers in the fields of education, medical and welfare services experienced a conspicuous decrease in happiness. By contrast, workers in the fields of information and communications, research and public service did not experience significant declines in income, working hours, and happiness. We can therefore say that the negative impact of the COVID-19 shock was already generally apparent in March, but certain specific occupations experienced a more serious negative impact. Importantly, the occupations that experienced the most significant negative impact were those with the lowest rate of utilization of telework (Figure 1), in addition to those most unsuited to telework (Table 1).

The main measure for the prevention of infection during the current pandemic is the avoidance of person-to-person contact, and the utilization of telework has therefore been recommended. Face-to-face services, in which person-to-person contact is fundamental, have been a central focus of government requests for businesses to suspend their activities, but tasks in these industries are also the least suited to telework. These industries have already suffered significant negative economic impacts, and it would be unreasonable to call on such industries to promote telework. This would only exacerbate a potential recession by increasing unemployment and business closures. Simply put, it is important to uniformly control socioeconomic activities as a countermeasure against infectious diseases, but at the same time, it is extremely difficult to uniformly promote telework and maintain economic activity. We can say that this is a typical contradiction between measures against infectious diseases and economic policy. More generous economic assistance will be an urgent requirement in order to prevent bankruptcies and unemployment in industries and occupations unsuitable to telework.

Figure 5: Changes in income (By industry)

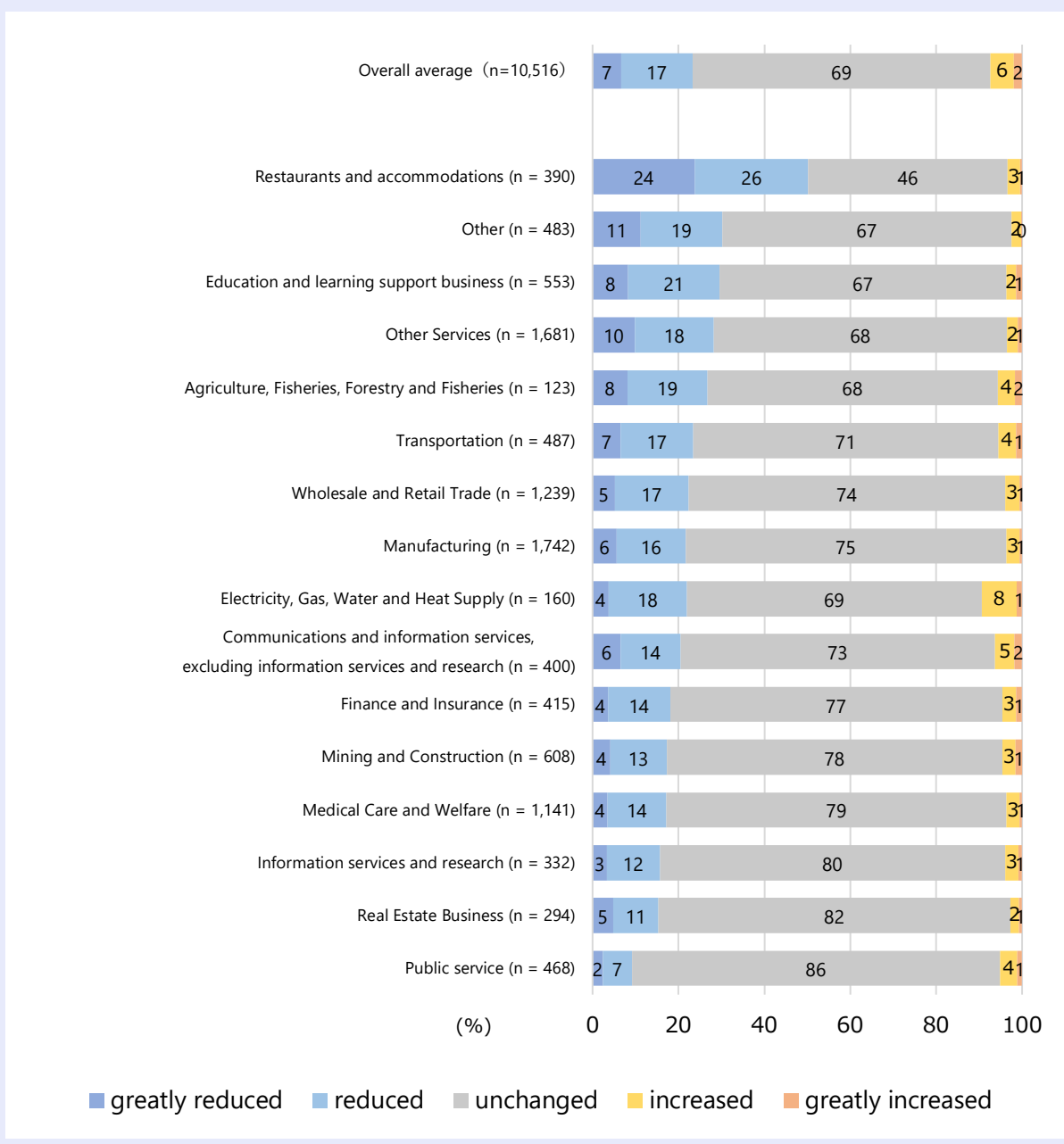


Figure 6: Changes in working hours (By industry)

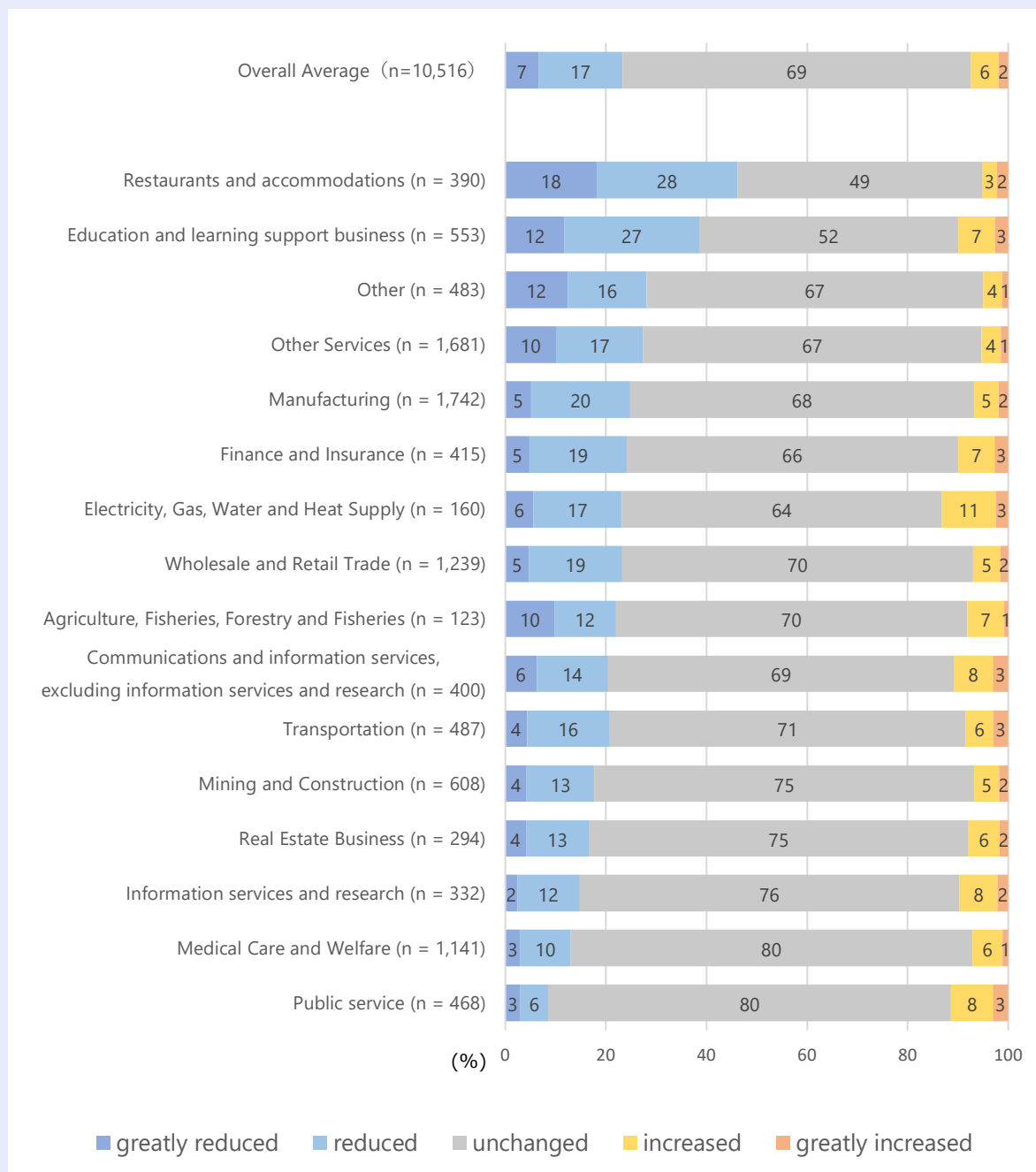
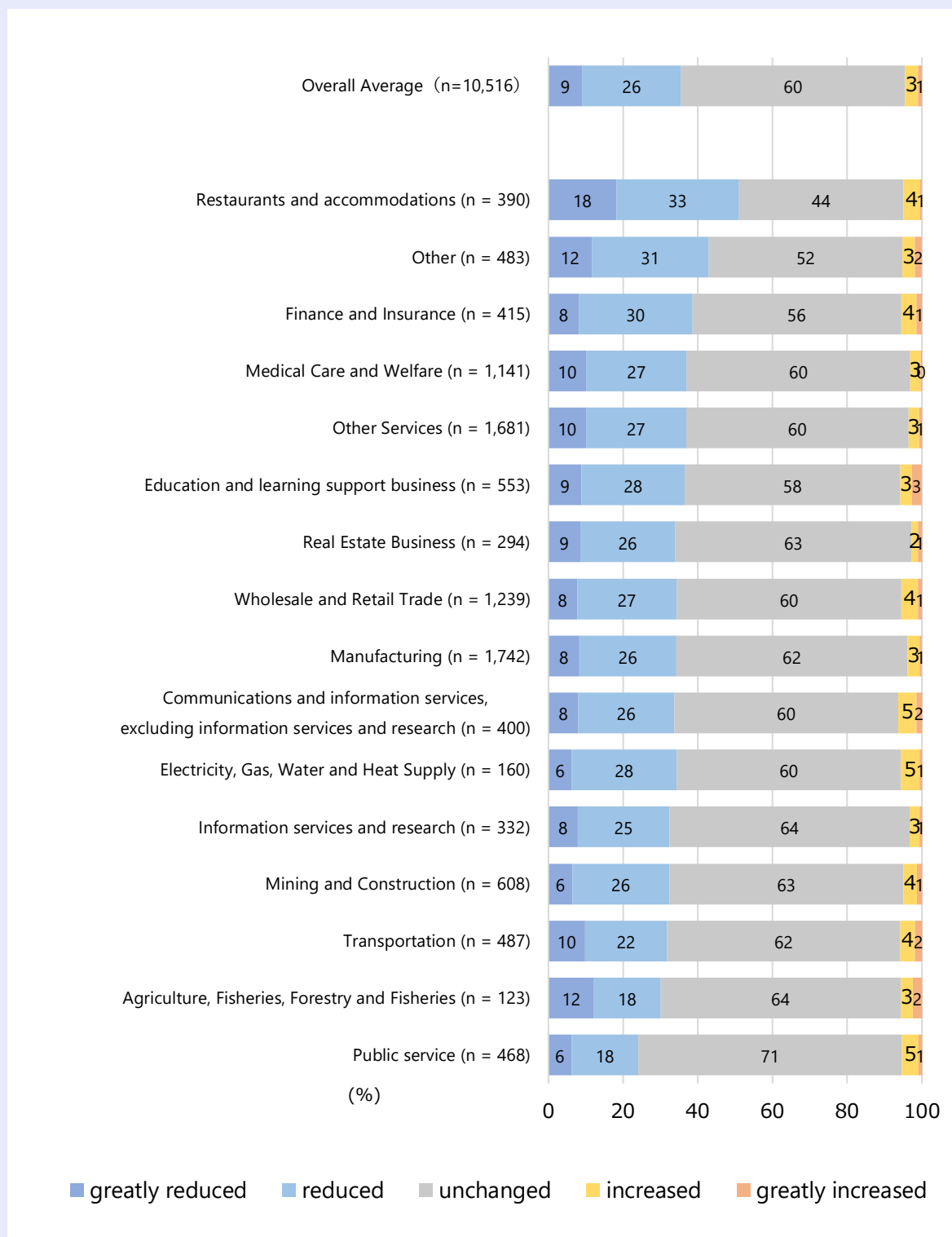


Figure 7: Change in level of happiness (By industry)



## **There is a Need to reform the Traditional Japanese Work Culture**

Many Japanese companies have maintained traditional business practices that promote face-to-face communication and close human relationships. The exchange of business cards, numerous face-to-face meetings, and drinks with the boss and colleagues are good examples.

However, in the face of COVID-19, Japanese firms have to rethink their traditional labor practices and the customs of Japanese business culture. The use of paper documents, the holding of lengthy formal meetings, and numerous other outdated practices such as the use of seals (“inkan”) and business cards need to change. It will be necessary to focus on the creation of a new employment environment that facilitates telework (for example, the establishment of flextime systems and evaluation-based systems for job advancement).

With regard to issues related to the working environment and the abilities of workers, it will be necessary to improve the ICT environment and provide ICT training. At the same time, however, protecting information, guaranteeing privacy, and ensuring security are expected to become more difficult when workers are teleworking from home.

## **Long-term Perspectives: How will Telework change the World?**

Telework will certainly change work styles in addition to workers’ values. First, face-to-face communication and relationships will become even more important. New ideas that generate innovation arise from casual chats and everyday conversations. There are subtle nuances that cannot be conveyed through teleconferencing, and unique problems that cannot be solved via telework. The transmission of tacit knowledge is also problematic when using telework. We must remember that telework is not a perfect solution, but rather merely a supplement to regular work, and thus we need to consider how to combine the two.

Second, service industries and office work, which have previously been protected from global competition, will now be exposed to such competition. As a result, people will work on a “job basis” rather than an “organization basis”. Telework will result in rigorous evaluations of individual work performance. Workers will no longer be evaluated merely on the basis of being seen to make an effort; generating work outcomes will be the goal.

At the same time, because of the establishment of performance-based systems, competition between companies and between employees will increase in ferocity, and some underperforming employees will be culled. Telework as described above is just the beginning. In the near future, new technologies that affect our working lives and new industries using a variety of innovative tools such as virtual reality (VR) and white-collar robots will appear. The meaning of work and the direction of society will change even further.

In addition, further advances in ICT could transform the relationship between rural and urban areas. The utilization of telework between head offices in the Tokyo metropolitan area and local factories and worksites may be promoted, and its use in the areas of agriculture, forestry and fisheries, in service industries, and in office work may significantly increase. This could diversify



the way that people work, and increase the number of people who work in Tokyo via telework while living in rural areas. Peoples' living arrangements will change from being based on the location of their companies to being based on considerations of lifestyle. They will be able to live without being tied to their workplace, escape from the need to commute, choose a place of residence that suits their lifestyle, and work through telework. It would be possible, for example, to work for a company in the Tokyo metropolitan area by telework while enjoying the benefits of nature in the countryside. In recent years, rural areas in Japan have increasingly become depopulated, and the remaining population is aging; the problem of empty houses and the hollowing out of shopping districts has become increasingly serious. The creation of teleworking hubs and living facilities in these areas would solve numerous problems and serve as a significant catalyst for regional revitalization. At the same time, this may also help to correct the concentration of Japan's population in Tokyo, and help to ease the vulnerability of densely populated cities, which has been revealed by the COVID-19 pandemic.

### **Toshihiro Okubo**

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