



July 29, 2020

Keio University

## Research on Telework and the Actual Conditions of Workers Under the Spread of COVID-19

Professor Toshihiro Okubo of the Keio University Faculty of Economics carried out a study on telework and the work, lifestyle, and attitude of workers in Japan under the spread of COVID-19 (coronavirus disease), clarifying the actual conditions of workers and telework during the coronavirus pandemic. According to the study, the rate of telework increased by 11 percentage points between January and June 2020; nevertheless, this remains lower than in other countries, and notable differences were also found depending on the type of industry, occupation, and region. The more unsuitable an industry is for telework, the greater the decline in income, and organizational issues specific to Japanese companies and society became more obvious.

This study used a survey ("Questionnaire Survey on the Effects of the Spread of COVID-19 on Telework-based Work Styles, Lifestyle, and Awareness") carried out in a joint research project conducted with the Nippon Institute for Research Advancement (NIRA), and an academic paper was accepted by and published in "Covid Economics."

### 1. Main points of research

- Telework is rapidly expanding as a work style. The national average rate for telework increased from 6% in January to 10% in March before reaching a high of 25% in April and May when a state of emergency was in effect, although after this was lifted, it went down to 17% in June. Telework grew significantly after the declaration of a state of emergency, and while it dropped slightly in June, it remains higher than it was in January, and it is thought that telework has become established to a certain extent.
- There are significant differences by prefecture, with noticeably higher telework rates seen in Tokyo and in neighboring prefectures such as Kanagawa, Chiba, and Saitama. Additionally, big differences were seen depending on the type of industry and occupation, with industries such as those related to IT and communications having a higher telework rate, while for face-to-face service industries including the restaurant and lodging business sectors the rate was low. As we progressed from January through March to June, it was found that the rate of telework increased in industries for which the implementation of telework is potentially easier.
- It was found that industry types and occupations for which the telework rates are lower tended to be less suitable for telework to begin with, and at the same time, it became clear that these were the industries which saw the greatest loss of income. In these types of industries, it is not possible to uniformly promote telework or substitute the duties that had been carried out up to now, and it can be thought that there are many obstacles to advance telework including

the organization of companies, employment systems, and social practices.

- The telework rate in Japan has always been relatively low compared to other countries, and although there has been an increase in the rate of telework due to the coronavirus shock, it still remains low. Factors thought to influence this include continuing economic activities with a considerable number of people commuting to work as normal due to the low numbers of patients and deaths caused by the infectious disease compared to other countries as well as the fact that no punishments were introduced, many companies not being fully prepared to introduce telework, corporate institutional problems, and a corporate culture that values face-to-face meetings.

## **2. Background of research**

2020 began with COVID-19 spreading around the world, and the global economy fell into a state of chaos. In Japan, as the situation gradually worsened in February and March, the government asked people to refrain from going out and commuting to work, while telework was promoted. In April, a state of emergency was declared and telework was further advanced.

Under an emergency situation such as this, the working conditions, behaviors, and attitudes of workers change from one minute to the next. It is therefore extremely important to thoroughly observe the changes caused by the coronavirus pandemic from a fixed point, practically carry out complete statistical surveys, and keep detailed records, not only to provide objective evidence to implement current policies but also for verification purposes in the future. Although the infection status and social movements have been quantified and digitized, the reality of the situation is that studies relating to the economic activities and attitudes of individual workers are lacking, and objective evidence, which is important for discussing and making decisions on governmental policies, is also inadequate. Under these circumstances, a questionnaire survey of over 10,000 workers was conducted through joint research carried out by Keio University and NIRA.

## **3. Content of research and results**

Keio University and NIRA conducted a questionnaire survey on telework ("Questionnaire Survey on the Effects of the Spread of COVID-19 on Telework based Work Styles, Lifestyle, and Awareness"). Surveys were conducted in April 2020 (before the declaration of the state of emergency) and June 2020 (after the declaration of the state of emergency was lifted), asking more than 10,000 workers across Japan about their employment and living conditions as well as their attitudes. The survey was conducted from the perspectives of workers in various industries, occupations, and regions, and problems in implementing telework were identified. Since the continuous sample (those who participated in both surveys) over the 2 surveys amounted to over 8,000 people, it is possible to observe changes in individual behavior and attitudes before and after the declaration of the state of emergency.

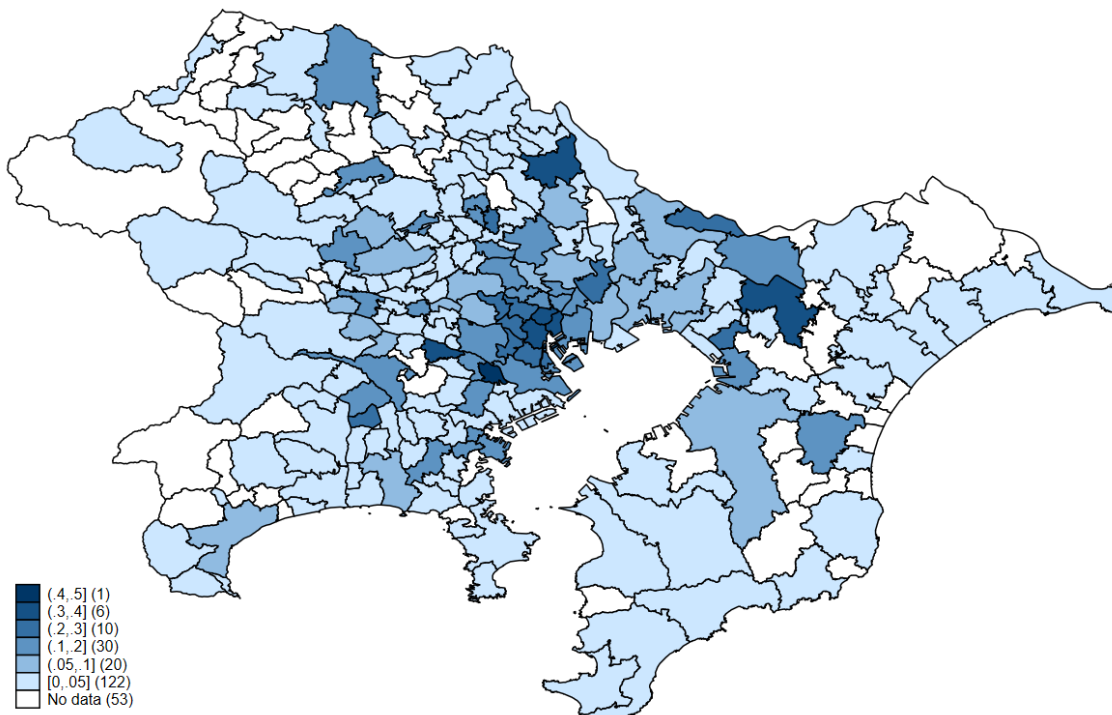
The national average rate for telework increased from 6% in January to 10% in March, rising to 25% in April and May when the state of emergency was in effect, but after this was lifted, it went down to 17% in June. Telework grew significantly after the declaration of the state of emergency, and although it dropped slightly in June, it was higher than it was in January, and it

can be thought that telework has become established to a certain extent.

On the other hand, there is a big difference among the prefectures. In Tokyo, it was overwhelmingly high in June at 33%, which was followed by Kanagawa, Saitama, and Chiba, prefectures neighboring Tokyo. The map shown below focuses on the Greater Tokyo (Tokyo, Chiba, Saitama and Kanagawa Prefectures). The map displays the telework utilization rate at municipality level as of March 2020 (based on place of work). The darkest municipalities on the map indicate 40-50% of workers use telework, whereas the lightest ones indicate the rate for telework is only 0 to 5%. Municipalities in central Tokyo see the highest utilization rates of telework. This indicates that people who live in the suburbs of Tokyo and commute to the central Tokyo area tend to use telework.

There is also a significant disparity among the different industry types and occupations, with a high telework rate seen in industries related to IT and communications (46%), while the telework rate for the restaurant and lodging businesses were found to be low (5%). Furthermore, as we progressed from January to March and onto June, it was found that the telework rate became greater in industries for which telework is potentially easier to implement. Industry types and occupations for which the telework rates are lower tend to be industries less suited for this style of work, and at the same time, these industries are seeing the greatest loss of income, making it clear that it is impossible to uniformly promote telework. If telework is examined by company size, telework rates become higher as the number of employees increase. At companies with 500 employees or more, the rate rose to 31%, while at small companies with 5 to 29 workers, the telework rate was 8%.

Telework utilization rates in the Greater Tokyo area (working place basis).



#### 4. Research to date and future developments

To date, Professor Toshihiro Okubo has carried out studies on international trade and spatial economics following large-scale natural disasters. Specifically, he has conducted an empirical study on the survival and productivity of companies following the Great Hanshin earthquake (reference 1); an empirical study on the impact of corporate disaster prevention, BCP, and mutual aid on the resumption of corporate activities in the aftermath of the Great East Japan Earthquake (reference 2); a study on the quantitative economic history relating to the creative destruction hypothesis of companies in Yokohama City after the Great Kanto Earthquake (reference 3); investigated the effects of geographic distance from a nuclear power plant and changes in people's degree of happiness following the Great East Japan Earthquake (reference 4); etc., and each have been published in an international peer-reviewed journal.

The current spread of COVID-19 can also be positioned as a "disaster" in a broad sense. Regarding the economic impact of COVID-19, a survey on workers was conducted and study reports produced (references 5, 6). Opinion papers were also prepared to make policy recommendations (references 7, 8, 9). Internationally, research outcomes have also been published on VoxEU, a website created by the Centre for Economic Policy Research (CEPR) to distribute the latest international research (reference 10).

Next, the results of the June 2020 survey will be summarized and published as soon as possible. By showing actual situations through data, much useful evidence will be presented to establish policies that shed light on a corner of the crisis. In addition to telework, the real picture of the economy, the actual state of workers, and the future of the Japanese economy as a result of the coronavirus pandemic will be clarified.

#### <References>

1. Cole, M. A., Elliott, R. J., Okubo, T., and Strobl, E. (2019) . "Natural Disasters and Spatial Heterogeneity in Damages: The Birth, Life and Death of Manufacturing Plants," *Journal of Economic Geography*, 19 (2) pp.373-408.
2. Cole, M. A., Elliott, R. J., Okubo, T., and Strobl, E. (2017) . "Pre-Disaster Planning and Post-Disaster Aid: Examining the impact on plants of the Great East Japan Earthquake," *International Journal of Disaster Risk Reduction*, 21, pp.291-302.
3. Okazaki, T. Okubo, T and Strobl, E (2019) "Creative Destruction of Industries: Yokohama City in the Great Kanto Earthquake, 1923," *Journal of Economic History*, 79(1) pp.1-31. Lead article.
4. Rehdanz, K, Welsch, H, Narita, D and Okubo, T. (2015) "Well-being Effects of a Major Natural Disaster: The Case of Fukushima," *Journal of Economic Behavior & Organization* 116: pp.500-517.
5. Toshihiro Okubo, NIRA (2020), "Report on the Results of the Questionnaire Survey on the Effects of the Spread of COVID-19 on Telework-based Work Styles, Lifestyle, and Awareness," NIRA research report <https://www.nira.or.jp/pdf/NIRA20200430-telemigration1.pdf>
6. Toshihiro Okubo, Nippon Institute for Research Advancement (2020), "Report on the Questionnaire Survey on the Effects of the Spread of COVID-19 on Telework-based Work

Styles, Lifestyle, and Awareness," NIRA research report  
[https://www.nira.or.jp/pdf/NIRA20200417\\_telemigration.pdf](https://www.nira.or.jp/pdf/NIRA20200417_telemigration.pdf)

7. Toshihiro Okubo (2020) "Do not end telework with infectious disease control – difficulties and contradictions seen from fact-finding surveys of workers –," NIRA Opinion Paper No. 47
8. Toshihiro Okubo (2020) "Telework and Infectious Diseases Control," Japanese Electrical Electronic & Information Union NAVI Issue III, 2020 (forthcoming)
9. Okubo, T. (2020) "Telework as a Long-term Solution: Problems and Contradictions to Overcome," NIRA Opinion Paper No. 47
10. Okubo, T. (2020) "COVID-19 and Telework in Japan," VoxEU, June 2020

<Details of original paper>

Title: "Spread of COVID-19 and Telework: Evidence from Japan"

Authors: Toshihiro Okubo

Journal: Covid Economics (2020.6.26)

<https://cepr.org/content/covid-economics-vetted-and-real-time-papers-0>

---

※Please direct any requests or inquires to the contact information provided below in advance.

• Inquiries about research

Keio University Faculty of Economics Professor Toshihiro Okubo

Tel: +81-3-5418-6589 E-mail: [okubo@econ.keio.ac.jp](mailto:okubo@econ.keio.ac.jp)

• Inquiries about press release

Keio University Office of Communications and Public Relations (Ms.Yasunobe)

Tel: +81-3-5427-1541 Fax: +81-3-5441-7640

E-mail: [m-pr@adst.keio.ac.jp](mailto:m-pr@adst.keio.ac.jp) <https://www.keio.ac.jp/>