

Changes in movements of people to prevent the spread of COVID-19 in Japan since January 2020 based on geotagged Twitter data

*Takashi Kirimura¹

1. Kogakkan University

In order to curb the spread of COVID-19, the prefectural governors in Japan began requesting that inhabitants avoid going out, and the Japanese government also issued the declaration of a state of emergency. As a result, the daily movement of people had been substantially restricted. Although the declaration of a state of emergency has been lifted along with the decrease in the number of new cases of COVID-19, it is expected that the movement of people will continue to decrease to some extent due to the practice of the "new lifestyle." Therefore, this paper clarifies a part of the decrease in the movement of people due to the request for avoiding going out after the end of February 2020 and the declaration of a state of emergency after April 2020 using geotagged Twitter data. In particular, this study focuses on the difference in movement between weekdays and holidays, and the difference in movement according to the time of day on weekdays, because the avoiding going out on weekends and working from home on weekdays are mainly required. It is considered that the decrease in daily commuting, going to school and shopping and sightseeing activities especially on weekends, will have a great impact on functional regional connections and regional economies.

As a result of the analysis, before the request of avoiding going out, Twitter users tended to move more easily on holidays than on weekdays. However, after the end of February when there were requests for avoiding going out by the prefectural governors, they became less mobile on holidays rather than weekdays. Also, in the two metropolitan areas of Tokyo and Osaka, the ratio of the number of Twitter users in the daytime to the number of them in the nighttime on weekdays increased even in the suburbs due to the spread of working from home. In the central areas of the two major cities, the proportion of users staying in the early morning is increasing due to the effects of staggered working hours.

Keywords: COVID-19, avoiding going-out, declaration of a state of emergency, geotagged tweets, metropolitan area