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# Analysis of Problem of Stock Shortages Caused by COVID-19 Using AI and Search Data

## *Policy response by group is desirable*

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### Summary

- With the spread of COVID-19 infections, a variety of products are running out of stock. The utilization of search data on various keywords was examined in order to find information useful for policymakers and others to consider a response, taking into account the tighter supply and demand situation from a broader perspective. However, it may be difficult to intuitively understand the data characteristics of individual items at a glance. Therefore, in order to extract the essential structure from a complicated situation, we tried to understand the features of each group after classifying the data into several groups. AI (machine learning) was utilized in the classification process in order to eliminate arbitrariness as much as possible while ensuring high accuracy.
- As a result, the four groups could be classified into (1) items chronically low on stock, (2) items suffering more serious shortage, (3) items experiencing a temporary increase in demand; and (4) items relatively unaffected by the COVID-19 epidemic. Policymakers may be encouraged to ask manufacturers to increase production for groups (1) and (2), while in the case of product group (3), policymakers may want to look for the source of the product group to confirm whether the shortage is actually a false rumor, and if it is, the policymaker may want to inform people, manufacturers, and retailers, etc. On the other hand, it is unlikely that there is a need to take immediate action regarding product group (4).
- While there are of course things to keep in mind in using these tools, the combination of AI and search data can be a powerful tool for visualizing the degree of anxiety that people have when they cannot purchase foodstuffs and commodities, and for policymakers to respond more quickly and appropriately.

#### Attention

This report is a summary translation. The official document is only in Japanese.