

# The effectiveness of Japanese public funding to support science research

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Research funding drives advances in research and leads to discoveries. In the field of basic research, research funds allocated to researchers by public organizations (in Japan, Grants-in-Aid for Scientific Research:

KAKENHI) account for a large portion of research funds.

However, there is an ongoing debate about whether "distributing a small number of research funds to a large number of researchers" or "concentrating a large number of research funds on a small number of excellent researchers" produces more new results and leads to innovation, particularly Nobel-Prize-class discoveries.

A new study published in *PLOS ONE* comprehensively investigated the relationship between the research funds (amount and research category) and the research outcomes (number of publications, number of emerging topics created, and number of Nobel Prize topics created). It considered all Grants-in-Aid for Scientific Research allocated to [life sciences](#) and medicine since 1991.

The findings show that the higher the amount of research funds received, the more the number of research results generated. However, the findings also highlighted that the generation of research results becomes stagnant at 50 million yen. In particular, the generation of Nobel Prize topics decreased compared to the number before the receipt of research funds.

In terms of the efficiency of research output creation based on the total amount of investment, it is clear that distributing smaller amounts of research funds of 5 million yen to a large number of researchers is more effective than distributing a higher amount of research funds to a limited number of researchers, who have excellent research records, in a limited number of research fields.

This research group has established a quantitative identification method for emerging topics and Nobel Prize topics and has also clarified the involvement of researchers in the generation of these topics. The results of this study are expected to provide fundamental insights that can

contribute to research policy and research funding administration.

**More information:** Ryosuke L. Ohniwa et al, The effectiveness of Japanese public funding to generate emerging topics in life science and medicine, *PLOS ONE* (2023). [DOI: 10.1371/journal.pone.0290077](https://doi.org/10.1371/journal.pone.0290077)

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