



Case Study:

Objectively Distributing Research Funds
Tohoku University





Executive Summary

Tohoku University, one of the top research universities in Japan, is aiming to become a world-leading university. Along with their Inoue Plan, created in 2007, the university management has prepared a special funding budget (\$14M USD as indirect funds over five years) to allocate to select internal research groups, so that the institution can develop future research strengths.

The issue at hand was how should the university allocate the funding. Should they follow the traditional way, based on only peer review, or should they also consider other factors, such as results from data analysis? Executive Vice President Kitamura decided to utilize data from SciVal Spotlight and SciVerse

Scopus, in addition to internal data and feedback from top researchers in each department.

As a result, eight research projects out of 48 applicants were selected with a combination of data and peer review, making the decision process objective and transparent.

Background: An institution with a tradition of research excellence

Tohoku University, established in 1907, is the third oldest national university in Japan. It is located in Sendai-city, 350 km north of Tokyo (1 hr 40 min ride on the Tohoku Shinkansen (Bullet Train)). With more than 5,800 publications annually, the university is the home of four Nobel Prize Winners and 31 recipients of the Order of Culture.

Some of the top research initiatives at Tohoku came from the Institute of Materials Research; the Institute of Development, Aging and Cancer; the Institute of Fluid Science; the Research Institute of Electrical Communication; and the Institute of Multi-disciplinary Research for Advanced Materials.

Challenge: Distribute funds to stimulate research activity

How can the university make a decision that is objective, fair and transparent?

Executive Vice President (EVP) Kitamura says “With the Inoue Plan, led by our president Akihisa Inoue, we are introducing various organizational and operational changes which were difficult to imagine several years ago. The process has been tough, but we did it because it was necessary for us to become a world-leading university. Especially in the area of research, global competition is becoming more intense. Our neighbors in China are introducing various measures to attract global talent, so that they can build up their research strengths. Japanese universities are too slow. We need to move faster.”

EVP Kitamura and the management team decided to create a special funding budget to allocate to selected research groups. The funding will be used as “indirect funds”, in other words, to support hiring additional research support staff and cover travelling costs to facilitate collaboration with global peers, amongst other activities. The total size of the funding was approximately \$14M USD, to be allocated to eight research groups over five years. A total of 48 research groups from various departments applied for the budget. Most of the applicants were well-known researchers/groups within the institution, making the selection challenging.

Solution and Methodology:

Traditionally, these decisions were made based only on peer review. Top researchers from each department would get together and make decisions based on their impressions of the applications and their knowledge of the candidates.

EVP Kitamura and his team decided they should take a different approach. They chose to include insight from data analysis in their decision making process, in addition to the results from peer review. Peer review, as a qualitative analysis, was still needed to help evaluate the innovative nature of the topics and identify subject areas that may not be suitable for an evaluation solely on publication data. For this reason,

EVP Kitamura and his team believed that the combination of data and peer review was necessary to conduct a comprehensive and transparent evaluation.

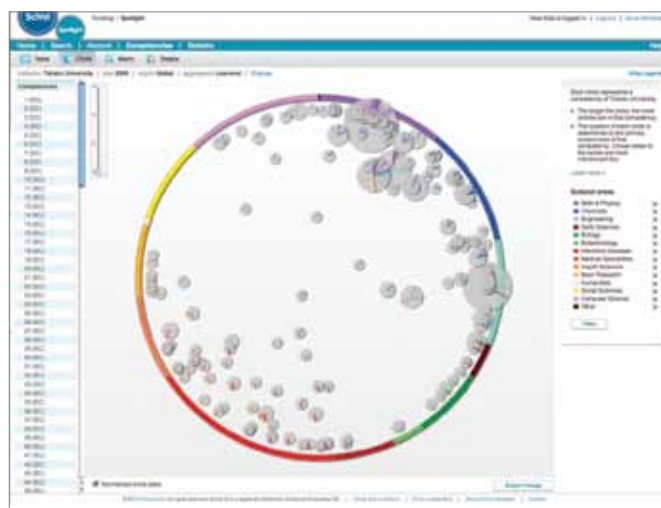
SciVal Spotlight and SciVerse Scopus were among the data sets used to evaluate the research performance of the applicants.

Using SciVal Spotlight to see how groups are contributing to research strengths:

Step 1: Get a list of members included in each application. Incorporate not only the head of the group, but all members included in the project. (500+ at Tohoku University)

Step 2: Search each name in SciVal Spotlight. Check if their research activities (publications) are related to the research competencies at Tohoku University.

Step 3: Add up the total competencies for each research project. If the total number is high, it indicates that the research group has a high contribution to Tohoku University's research activities.



SciVal Spotlight

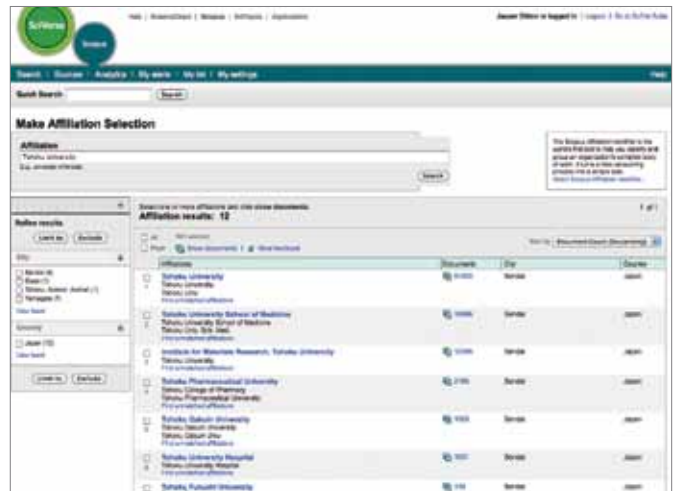


Using SciVerse Scopus to calculate the average h-index of the research groups:

Step 1: Get a list of members included in each application. Same list as used previously.

Step 2: Search each name in SciVerse Scopus to obtain the number of publications and h-index.

Step 3: Calculate the average h-index for each of the research groups. If the number is high, it indicates that the research group members have high stability in publishing high quality research.



SciVerse Scopus

Conclusion:

“SciVal Spotlight helped us get an objective understanding of our strengths and potential weaknesses. Some people criticize using publication numbers and citations when evaluating research activities. Although it is not 100%, it does give a good overview of the research performance. I think there are more ways to use SciVal Spotlight data to further strengthen our research strategy.”

Out of the 48 applications, eight research groups were granted funding. The breakdown of the eight groups per subject area were as follows: Social Sciences (1), Physics and Engineering (2), Life Sciences (3) and Multi-disciplinary Research (2).

EVP Kitamura stated: “I think we have a good portfolio of research topics for these funds. Since we included data analysis results to complement the peer review evaluation, we have more accountability in the whole process.”

1 Based on search result from SciVerse Scopus.

2 Hans Heinrich Rohrer (1987), Ahmet H. Zewail (1999), Koichi Tanaka (2002), Peter Grunberg (2007).

3 J. E. Hirsch (2005) An index to quantify an individual's scientific research output, Proceeding of National Academic Science of the United States of America, November 15; 102(46): 16569–1657.