

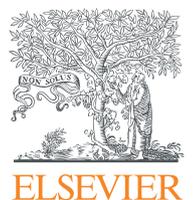
CASE STUDY

Driving the country as innovation powerhouse: National Research Foundation of Korea



EXECUTIVE SUMMARY

As South Korea's specialized research funding agency for science and technology, National Research Foundation of Korea (NRF) has the mandate to drive research and development (R&D) excellence nationally and internationally, and to reinforce Korea's standing as a global innovation leader. What has become integral to this mission is the use of Elsevier's ready-to-use research performance solution, SciVal.



BACKGROUND



English: www.nrf.re.kr/eng/main
Korean: www.nrf.re.kr/main

The National Research Foundation of Korea (NRF) was founded on June 26, 2009, as a specialized research funding agency through a merger of the Korea Science and Engineering Foundation (KOSEF), the Korea Research Foundation (KRF) and the Korea Foundation for International Cooperation of Science and Technology (KICOS). The aim of the NRF is to optimize and advance the national basic research funding system that encompasses all academic research fields.

Paralleling the country's strategic direction for science and technology, the NRF's current priority is to position Korea at the forefront of the Fourth Industrial Revolution (Industry 4.0), the intersection of physical and digital technologies.

To align its multibillion-dollar budget to the demands of Industry 4.0, it needed to stay on top of emerging insights and best practices, as well as optimize its ongoing world-class research with deeper explorations of specific domains in, namely 3D printing, artificial intelligence (AI), big data, cloud computing and the Internet of Things (IoT).

This depth of analysis required the NRF to look for a solution that could support its researchers in:

- Accessing comprehensive data that captures the latest and best international scholarly research
- Processing extensive publication records for a richer understanding of research trends
- Conducting rapid analyses on research performances for robust decision-making

SOLUTION

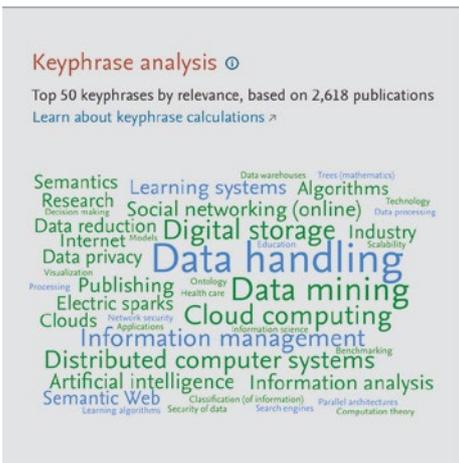


Figure 1: SciVal's compelling data visualization capabilities, including a word cloud generator for text analysis, supports NRF researchers like Dr. Chun with analysis and decision-making

The NRF's growing research needs found a match in Elsevier's SciVal, an advanced analytics solution with powerful assessment, benchmarking and reporting capabilities of global research performance. SciVal relies on data drawn from the largest abstract and citation database of peer-reviewed literature, Scopus.

Through SciVal, the NRF team gained a bird's eye view of the R&D work unfolding in its focus domains, with accurate benchmarking of its researchers against a backdrop of over 9,000 research institutions and 230 countries and regions available in SciVal.

Dr. Ki Woo Chun, Senior Researcher at the NRF Center for R&D Policy and Innovation, highlighted that SciVal's ability to access holistic research performance summaries has helped the NRF identify researchers' and institutions' subject and domain strengths.

With SciVal, he can employ a range of indicators for measuring research excellence — including collaboration, subject discipline and visibility — as well as use a combination of metrics to monitor the progress of an institution or a country over time. Such versatility enables his team to construct a comprehensive and meaningful picture of research performance, informed by multiple metrics or narratives.

One metric favored by Dr. Chun and his team is Field-Weighted Citation Impact (FWCI), used to evaluate the number of citations received by a publication compared to the average number of citations received by all other similar publications indexed in Scopus. FWCI has proved to be a solid, reliable indicator for evaluating the research impact of researchers, organizations and countries.

“The range of metrics available enables us to undertake various queries for both quantitative and qualitative analyses and receive standardized reports nearly instantaneously. The only thing more outstanding than SciVal’s fast and flexible data retrieval is its ability to bring data to life, be it through slope graphs or word clouds.”

- Dr. Ki Woo Chun, Senior Researcher, Center for R&D Policy and Innovation, National Research Foundation of Korea



CONCLUSION

“With volumes of research being generated yearly on a global scale, SciVal is key in helping us stay on track with thought leadership across multiple domains. To keep our finger on the pulse of international knowledge exchange processes, SciVal is useful.”

- Dr. Haedo Kim, Principle Investigator, National Research Foundation of Korea

With SciVal, the NRF is better positioned to apply evidence-based decision-making strategies when considering academic inquiries and research partners.

Dr. Haedo Kim, Team Leader for R&D Policy and Innovation, said his team uses SciVal in partnership development, such as with NRF’s support for several academic institutes, in benchmarking its body of work and research strengths against those of global institutions. The team at NRF’s International Cooperation, on the other hand, uses SciVal to identify outstanding research work and researchers to locate opportunities for international collaboration that drive scientific productivity and improve academic quality.

SciVal’s access to more than 170 trillion metric values, the ability to analyze large datasets and its on-demand visualization options, has freed NRF staff from the onerous task of collating and cleaning data, allowing them to better focus on their respective core work.

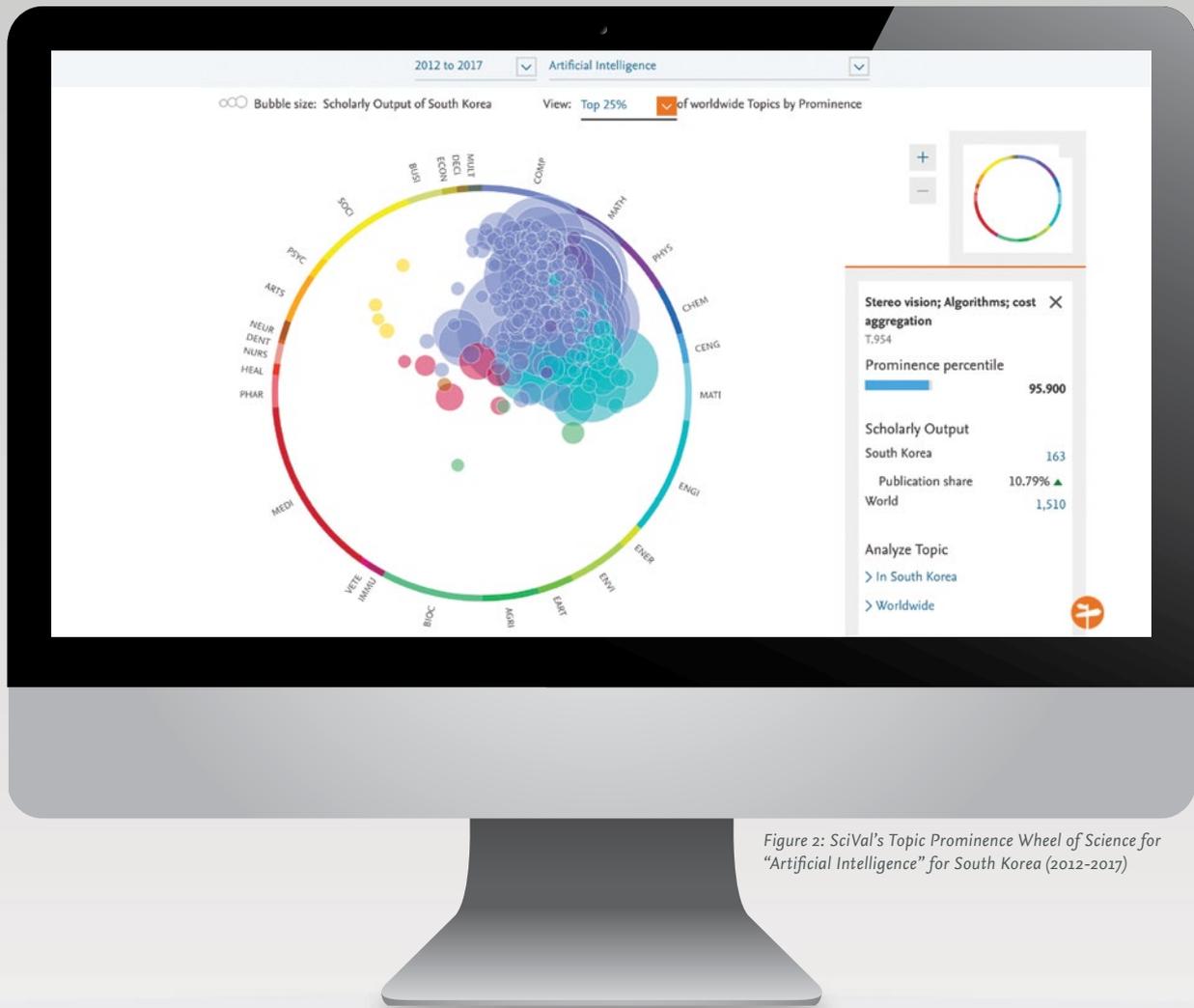


Figure 2: SciVal's Topic Prominence Wheel of Science for "Artificial Intelligence" for South Korea (2012-2017)

SciVal offers quick, easy access to the research performance of over 9,000 research institutions and 230 countries and regions, so you can visualize research performance, benchmark relative to peers, develop collaborative partnerships and analyze research trends. www.elsevier.com/solutions/scival

“If we are to push the envelope with our research strategy and support increasing the rate of technology transfer from research to industrial use in Korea, SciVal would be a necessary part of that process.”

- Dr. Ki Woo Chun, Senior Researcher, Center for R&D Policy and Innovation, National Research Foundation of Korea

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