



Elsevier Response to the ARC ERA & EI Review

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Elsevier Response to the ARC Review of ERA & EI

Introduction

Elsevier welcomes the opportunity to provide a response to the consultation paper released by the Australian Research Council (ARC) for the review of ERA and EI.


Elsevier has been a long term partner with the ARC to assist in the structure and delivery of ERA in past renditions and we will continually aim to work closely with the ARC for any requirement that it may need in relation to ERA, in whichever form it may take.

As an organization, Elsevier understands that our world class data and big data technologies and staff support ERA and EI. As such, Elsevier takes the position that it is not our role to necessarily provide feedback on the process, or expected business rules for ERA or EI but to provide ongoing support and the use of our ever adapting and best-in-class technology to assist and to ensure that, where possible, the workload impact on the ARC and sector is as light as possible.

Track record of global assistance through national assessment

Elsevier has a demonstrated track record of assisting and being involved in national assessments across the globe. Our expert team assisted the ARC in the development of SEER and the first ever ERA more than 10 years ago. Since that time, Scopus has been the tagging source for ERA in all but one iteration. Our Scopus data was also used to complement ERA 2018.

Globally, Elsevier has met the needs and requirements for assessment across many countries and as an organization has consistently met the needs and demands of those countries. Technology and resources have been dedicated to national assessments in countries such as Australia, Italy, Portugal and Japan. In addition, Scopus is also the preferred data source for the top university rankings agencies globally such as Times Higher Education and QS, further demonstrating the established trust in Scopus for global assessment of citation data.



As an organization, Elsevier and moreover the Scopus team, are always looking to provide solutions and assistance with approaches that are consistent and as efficient as possible. As the Minister for Education Dan Tehan quoted on the 29th of March on the release on the last ERA results “*The transparent reporting of university performance will encourage universities to focus on working with industry and other stakeholders on research projects that deliver real results for real people.*”¹ Further improvements can only assist this further.

Current technology and future developments to complement ERA & EI


Elsevier has in-house solutions that are recognizing, resolving and linking, very efficiently, entities including individual researchers and organizations across various data sources such as journal article publications, conferences, books, research datasets, grant data and patents. For example, in Scopus and SciVal we can determine which awarded grants and which patents are associated with an individual expert’s profile and also their organization. The sophistication and quality of these links is continuously improving as we use state of the art artificial intelligence and machine learning technologies in combination with input from end user interaction with our widely used tools such as Scopus.

These disambiguation and linking techniques allow for the categorization of organizations into academic, government, institutes and industry groupings. This is key for analyzing research themes such as knowledge exchange, industry engagement, researcher mobility and cross-sector collaboration. The same technology is used to link references, for example from citations in patents, or awards, to research articles in Scopus. Some examples of the data that we link include 1) principal investigators and their affiliations in grant data, 2) or inventors and their organizations in patent data, and 3) author profiles in Scopus, and this facilitates the analysis of research influence on technology and its application.

These technologies are also used to appropriately classify articles of scientific journals and high-impact conferences correctly to their domains or areas of research. The technologies used for the maintenance and disambiguation of these profiles are proprietary and involve state-of-the-art unsupervised and supervised machine learning techniques.

The above in, combination with our analytical capabilities, enables us to produce a wide range of performance indicators ranking from bibliometrics (citation based) to social media and news metrics. These indicators – both quantitative and qualitative – provide a complementary lens to expert review

¹ <https://www.arc.gov.au/news-publications/media/media-releases/uni-research-delivering-real-benefits-australians>



that facilitate informed conclusions and decision making. Elsevier is always looking to validate data sources and where possible triangulate data points. With this in mind, Elsevier understands that the use of machine learning, combining data sources and validating researcher disciplines will create time and economic efficiencies for the ARC in the assessment process, as well as the preparation time for all universities and Higher Education Providers (HEPs) who submit into such assessments.

Conclusion

In summary, Elsevier have an established track record of partnering with institutions and funding bodies globally to facilitate national assessments such as ERA and EI, including THE and QS world university rankings. Elsevier use state-of-the-art-technology to link data from a variety of sources and facilitate informed decision making it as efficiently as possible.

Similar to our position with the review of the FoR codes, as an organization, Elsevier considers the discussion and inevitably the decision around best practice for ERA should be guided and driven through the feedback of those who are completing the work, specifically those HEPs. The team at Elsevier are committed to the ongoing success of ERA and EI in whatever form that may eventuate and will continue to develop our technology and expertise to best assist the ARC and the HEP's across the sector for a successful ERA and EI. We will continue to work in partnership with the ARC and universities across Australia into the future.

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How Scopus delivers value:

Scopus is a source-neutral abstract and citation database curated by independent subject matter experts. It provides powerful discovery and analytics tools that allow users to track, analyze and visualize scholarly & industry research. Scopus is coupled with quality, comprehensive content & enriched data, and unrivalled linking between content and its respective author and affiliation entities. All from one, easy-to-use database and in a single subscription.

Execute on these four key use cases:

- **Track research trends:** Stay ahead of research trends and the latest innovations with rich search and analytics of literature, authors, and affiliations
- **Identify key contributors:** Find the best minds in a specific field of study or industry for collaboration or benchmarking; or potential hires
- **Analyze peer & competitor output:** Examine scientific discoveries from key market players to benchmark competition and uncover white space
- **Accelerate discovery process:** Stay up to date on new and disruptive innovations with personalization & alerts

How Scopus enables effective and efficient execution of these use cases:

- **Comprehensive, quality literature & platform capabilities:** Spend less time finding and staying up to date on relevant research. Confidently access only trusted and high-quality content. Leverage various altmetrics, filtering, personalization, and alerts.
- **Content that is linked with high accuracy:** View reproducible results in context and quickly gain innovation insights. View related articles, find and track researchers and institutions contributing to specific innovations, and review the funding sponsors associated with a publication
- **Superior author and institution profiles, reliable metrics, and best in class built in analytical tools:** Identify subject matter experts worldwide for collaboration / validation; Analyze researcher and affiliation output; and benchmark competition

Each year Elsevier invests in new features and content to improve Scopus and the value we deliver to you.



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