Introductory Guide to SciVal for Lancaster University Users

What is it?

SciVal is a research intelligence solution providing users with research performance data from over 7,500 research institutions in 220 countries worldwide. It allows users to search for research output data for their own publications, for the university as a whole, or for other researchers and institutions, both in the UK and overseas. SciVal uses data from Scopus; therefore you will only be able to gather data based on the content of Scopus. SciVal does not use data from other citation databases such as Web of Science.

Why is it useful?

Different users will have different needs. At a strategic level, SciVal may be used to identify partners for future collaborations at overseas institutions in order to access specific funds, or to highlight strengths and weaknesses in research output in order to optimise an institution’s strategy. From a researcher’s perspective, SciVal may be used to identify specific researchers for potential collaborations, both internally and externally, or to see how their team’s research output and impact compares to that of a team in the same field at another institution.

Here are some examples of possible questions that SciVal can help provide answers to, including:

How can my institution demonstrate research excellence?

How can my institution evaluate the impact of its research portfolio?

How can my institution attract talented researchers?

How can my institution find collaboration partners?

How can my institution identify its research strengths?

What is the impact of adding a new researcher to my team?

How does it work?

SciVal is a module-based solution. Lancaster University users have access to the Overview, Benchmarking and Collaboration modules, and these modules are explained in more detail below. All data within SciVal can be exported to PDF or to a spreadsheet so that the user can display the data as they wish. Users have the option of drilling down the data where the
text is blue, for example to “Analyze in more detail” or “View data sources” and where there is a metric based on number of publications, for example Outputs in Top Percentiles, users are able to drill down and view the entire list of publications behind that particular metric.

Overview

The Overview module allows you to access high-level data on the research performance of your own institution, another institution, an individual researcher or groups of researchers, and countries. The bird’s-eye view of data in this module provides a range of metrics based on publications, citations and collaborations. Data in this module can be analysed at an institutional level or filtered by specific subject areas and data goes back to 2011. Users are able to define their own research areas and groups of researchers, and review their performance.

Example of summary institutional data in the Overview module.

Benchmarking

The Benchmarking module allows you to benchmark the research performance of your institution against that of other institutions, researchers and groups of researchers, using a variety of metrics. Again this can be at an institutional level or can be filtered by discipline. Data in this module goes back to 1996 and can be viewed in table or graph format. As previously mentioned, results can also be exported into a spreadsheet to be displayed as the user wishes.
Collaboration

The Collaboration module in SciVal allows you to explore your institution’s existing collaborations and to identify potential collaboration opportunities with other institutions, both nationally and internationally. As with the other modules, this can be done at an institutional level or filtered by a specific subject area. SciVal can be used to identify potential collaborations with institutions based on discipline or perhaps certain levels of publication output, for example Publications in Top Journal Percentiles, or by citation impact, for example to identify academics with a certain level of Field-Weighted Citation Impact. It also allows you to see who other institutions are collaborating with.

If you are using SciVal to perform regular searches on the same groups or institutions, you can define a set of entities and set up groups for quick reference, saved under My SciVal.

When using SciVal to answer a specific question, although not always possible, it is useful to have a few facts in mind as a complement to other sources of information, for example keep in mind factors beyond performance that can influence the value of metrics or results such as;

- **Publication type** – journal reviews are the most highly cited publication type, whilst journal articles have a higher citation rate than conference papers.

- **Discipline** – e.g. life sciences tend to publish more than arts and humanities, therefore the citation count of arts and humanities will likely be lower than that of life sciences.

Other factors to consider include the **size of an entity** - citation count will generally be higher for a large collaboration network than for a small research team; **database coverage** - SciVal is based on output and usage data from Scopus, which has its limitations, so if a publication is not indexed by Scopus then it won’t be included in the metrics calculations in SciVal; **time** – some metrics, such as citation impact or $h$-indices require the passage of time to enable useful information to be derived from them, for example early-career researchers will have a lower citation count or $h$-index than more established researchers.

It is important to remember that no metric is perfect. Triangulation is key. Always try to use at least two metrics when attempting to answer a question and where possible, reinforce your results with peer review or expert opinion, or ideally both.

**Snowball Metrics**

SciVal allows users to analyse research performance using a variety of quality metrics, including Snowball Metrics. Snowball Metrics are a specific set of “bottom-up”, universally agreed research-related metrics, created by 8 research-intensive institutions with the aim of creating a set of metrics that could be used to provide standard and trusted comparisons.
These metrics each have standardised “recipes” for how they should be calculated to ensure consistency and reliability for users. They are easily identifiable by the snowball logo 🍃, as can be seen in the picture below.

There are 24 Snowball Metrics in total, the most common of which are;

**Field-Weighted Citation Impact**

This is defined as “actual citation count relative to the expected world citation count”. Different disciplines will have different research outputs. This metric takes into account the output differences across different disciplines and calculates the actual number of citations received by an author’s output compared to the average number of citations received by publications of the same type, in the same subject area, in the same year. The world average Field-Weighted Citation Impact is 1, so any number above this would be better than average, for example 1.25 would mean that citations are 25% more than expected based on the global average.

**Outputs in Top Percentiles**

This is defined as “outputs that have reached a particular citation threshold in the data universe”. The Outputs in Top Percentiles metric indicates the extent to which an entity’s publications are present in the most-cited percentiles of a data universe; i.e. how many publications are in the top 1%, 5%, 10% or 25% of the most-cited publications.
Publications in Top Journal Percentiles

The Publications in Top Percentiles metric is defined as “outputs that have been published in serials with a particular average citation threshold in the data universe”. This metric indicates the extent to which an entity’s publications are present in the most-cited journals in the data universe; i.e. how many publications are in the top 1%, 5%, 10% or 25% of the most-cited journals indexed by Scopus. The most-cited journals are defined by the journal metrics SNIP (Source-Normalized Impact per Paper) or SJR (SCImago Journal Rank), and both options are available to search within this metric.

International Collaboration

This metric is concerned with publications co-authored with Institutions in other countries and calculates the number and percentage of outputs that have international co-authorship.

Further details on Snowball Metrics can be found via this link
https://www.snowballmetrics.com/

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