

Fields of science and research topics

Publication metrics are used in the analyses of the fields of science in a number of contexts. Many national evaluations of fields of science use metrics to evaluate, for example, the number of publications, citation impact and interdisciplinarity in the field. The field of science is often included in analyses of research organisations or countries as a factor through which publishing activities are analysed. In many university rankings, it is possible to examine universities by field of science. The field of science is also a key factor in overall evaluations of university research.

When analysing or evaluating the publishing activities of different fields of science through the means of publication metrics, or when using the field of science as a variable in analyses of units such as research organisations or countries, it is important to take into account the differences in publishing and citation practices across different fields of science.

How are fields of science and research topics analysed?

Publication metrics are used in the analyses of the fields of science in several contexts. For example, publication metrics can be used to observe changes in science or to describe the state of a field of science at a certain moment. Many national evaluations of fields of science use metrics to evaluate, for example, the number of publications, citation impact and interdisciplinarity in the field, alongside peer review and various statistical sources. For examples, see the Research Council of Norway's (Forskningrådet) [evaluations of fields of science](#) and the Swedish Research Council's (Vetenskapsrådet) evaluation Quality and [impact of research in political science in Sweden, PDF](#).

Fields of science are often included in analyses of research organisations or countries as factors through which publishing activities are analysed, for example, in the comparison of organisations or countries by field of science. Learn more about the use of metrics in the analysis of [research organisations](#) and [countries](#). Examples of such use of metrics are the various reports and databases published by research funders or similar organisations for science policy purposes (in Finland, for example, [the State of scientific research in Finland reports](#) carried out by the Academy of Finland and the Vipunen service's bibliometric reports based on the [Scopus \(only in Finnish\)](#) and [Web of Science \(only in Finnish\)](#) databases). In many university rankings, it is also possible to examine universities by field of science. Learn more about [university rankings](#).

The field of science is also a key factor in overall evaluations of universities' research, where universities' research activities are typically divided into evaluation units representing one or more fields of science. In addition to peer review, publication metrics are often used to evaluate the research and publishing activities of units. Learn more about [the evaluation of university research](#).

The analysis of fields of science can also be carried out using analysis products from private companies:

- [Dimensions](#)
- [InCites](#)
- [Essential Science Indicators](#)
- [SciVal](#)



Responsible evaluation of fields of science and research topics

When analysing or evaluating the publishing activities of different fields of science through the means of publication metrics, or when using the field of science as a variable in analyses of units such as research organisations or countries, it is important to take into account the differences in publishing and citation practices across different fields of science. Key differences include variations in the prevalence of co-publications and the average number of authors per publication, as well as differences in average publication speed and citation numbers. There are also differences between fields of science in how well the citation databases used in the analyses cover the research outputs. Learn more about the [differences between fields of science](#).

Evaluation based on citation data is best suited to fields of science where publishing is concentrated on international journal articles and where there is good coverage of research outputs in citation databases. Other evaluation methods, such as a combination of a comprehensive national publication data collection and a classification of scientific publication channels (in Finland, this is provided by the Publication Forum), should therefore also be used in the fields where books and conferences are the focus.