



The Bibliometrics Group's publishing recommendations for research scientists at Karolinska Institutet

Summary

- **Before you publish, do a little background research into the journal to which you intend to submit your article;** it should be included in the Web of Science index.
- **Check the journal's impact factor** and consider whether you can choose one with a higher value.
- **One high-cited article usually gives better returns on the bibliometric indicators than several low-cited articles.**
- **Verify all your publications.** It is essential to the quality of the database, and there is an explicit intention for the choice of bibliometric model to be such that the verification of all your publications has an aggregate positive effect.

How are your published papers measured and assessed by bibliometric methods and how can you influence the results?

Bibliometrics is the application of statistical methods to publications and is commonly used to assess scientific research through quantitative studies on research publications, primarily articles in peer-reviewed journals.¹

The primary aim of the Karolinska Institutet/SLL bibliometric database is to furnish Karolinska Institutet/SLL managers, departments/clinics and employees with high quality bibliometric analyses and reports (regarding e.g. publication patterns, co-publication partners and/or by-subject breakdowns). The results provide overviews of the research being conducted by KI/SLL researchers as well as tools that enable scientific results to be compared internally and with the work being done in other countries. Analyses results can also be used to follow up and plan activities, and sometimes even to assess and reward quality.

The Karolinska Institutet management believes it imperative that KI takes steps to continually improve its quality and competitiveness, especially given that other leading research institutions around the world are also doing so, and with considerable success. Bibliometric measures and analyses are becoming increasingly popular internationally for the assessment of research quality at both an individual and institutional level. Bibliometrics is more than just a visible tool for rewarding good, high-quality research; it is also a tool for incentivising the development of research quality.

¹ The Karolinska Institutet bibliometric database contains information about international scientific publications from 1995 onwards. It is directly based on the Science Citation Index, Social Science Citation Index and Arts and Humanities Citation Index (the three databases comprising the Web of Science) created and maintained by Thomson Reuters.

In light of this, the allocation of direct funds from Karolinska Institutet/SLL to the departments/clinics is an important area of application for bibliometrics. The current bibliometric model reflects the aggregate and average quality of publications from each such unit.

The Board of Research does not generally recommend that the bibliometric model used in the allocation of funds to the departments be also used by the individual departments to allocate funds to particular researchers or research groups. This is because the statistical methods used to provide data for the activity model are invalid when it comes to smaller selections of publications. A department may, however, opt to use appropriate bibliometric measures as a complement to other allocation principles.

How you publish affects you, your department and KI/SLL as a whole

A large number of publications is not a good thing *per se*, but only when the articles are of sufficiently high quality. Quality, even when measured solely with bibliometric indicators, must reflect several of a paper's attributes. From a bibliometric perspective, the journal and the number of citations to individual papers can be taken as a measure of quality.

Journal quality in the medicine and health field is traditionally measured using Journal Impact Factors (JIF). A relatively new alternative measure is the "Field normalised citation score per journal" (JCf), which factors in variations in citation patterns between different subject fields. These two measures closely correlate, and in the majority of analyses, KI uses the more internationally established JIF as a measure of journal quality.

Although the **quality of an individual article** should not only be judged by the number of its citations, there are several studies to show that citation analyses of a larger body of material correlate well with expert panels' assessments of scientific excellence. It is a known fact that citation traditions are dependent on subject field, and one measure of article quality that takes account of this difference is the field normalized citation score (Cf). Both these indicators have become standard bibliometric measures for KI and institutions around the world.

You can influence the bibliometric indicators

Many different types of analysis and report are created using KI's bibliometrics database, each of which requires a particular set of indicators. There are, however, some general tips on how you can influence the measures for your publications so that they interact in your favour.

- **Before you publish, do a little background research into the journal to which you intend to submit your article.** The journal should be included in the Web of Science index as it forms the basis of the bibliometrics database. The easiest way to check this is to search for the journal in the Web of Science (<http://isiknowledge.com/wos>). Contact the KI university library at ub@ki.se for further information about journals (e.g. the various journals available in a certain subject field, or which journals are open access).
- **Check the journal's impact factor** and consider whether you can choose one with a higher value. When choosing a journal, you must also take into account the chances of your missing the target group of people who you want to read and cite your work. You can look up all the

journals with an impact factor in the Journal Citation Reports database (<http://isiknowledge.com/wos>), or contact the KI university library (ub@ki.se) for advice.

- **One high-cited article usually gives better returns on the bibliometric indicators than several low-cited articles.** It therefore might be worth holding off publication and working more on your paper in order to render it of greater interest to other researchers.
- **Verify all your publications.** There is an explicit intention for the choice of metrics for different reports and analyses to be such that the verification of all your publications has an aggregate positive effect ². A complete database is also important for ensuring that analyses of KI's research are fair and able to provide a reliable tool for the follow-up and planning of activities.

Your publications must be traceable to you and your department/clinic

All researchers at Karolinska Institutet/SLL are requested to verify their publications in the bibliometrics database. This you do at <https://bibliometrics.ki.se/verify/users/login>.

Individual verification is important for ensuring the best data quality and coverage in connection with analyses, increasingly so as the analyses will be used for different purposes. This means that the publications must be verified continuously to keep the database updated. Co-authors should also verify their publications in order that collaboration patterns be analysable.

To ensure the best possible results in analyses including your own publications, you must verify all your publications, in particular original articles, review articles or letters. It is possible, even desirable, for you to also verify other types of document covered by the database (e.g. editorial material or meeting abstracts). Doing so will have no adverse effect on any indicators, since these document types are never used for citation analyses, for example. However, it is worth being able to include this type of material in co-publication analyses and the like or use it for identifying researchers at Karolinska Institutet that are active within a particular scientific field.

You must be actively affiliated to KI/SLL for your publications to be included in bibliometric analyses of KI/SLL research. You can check that the bibliometrics system can identify your affiliation(s) to KI/SLL at <https://bibliometrics.ki.se/verify/users/login> under the "Edit my names" tab. If the system can identify your affiliations they are active and your publications will be available for searches.

Address recommendations

Karolinska Institutet and the SLL are under continual appraisal by several external bodies such as the Swedish Research Council. Bibliometric measures are applied as standard (sometimes even exclusively) for these evaluations, which are used, for example, by the government for the purposes

² To illustrate how verification affects measures, we can take the bibliometric indicators in the Board of Research's resource allocation model. Here, two of the indicators (with a combined weighting of 70%) are aggregated measures. Each verified publication that has either citations or a journal impact factor thus adds to the respective indicator score. In combination with the inherent inertia that exists in the Cf mean indicator (which has a weighting of 30%), each verified publication will probably have a positive impact on the department's consolidated bibliometric result. For analyses of fewer publications (which is the case, for example, at group level), the principle of only measuring the mean value for the best publications, measured with each indicator, is normally used. For a group with 30 publications, for example, the Cf is measured only for the 15 articles that have the highest individual Cf values. The measure is thus not adversely affected by the verification of uncited publications etc.

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of research fund allocations to higher education institutions. It is therefore important to state your address on your publications in such a way that it can be identified by others outside to KI/SLL as belonging to one or other organisation. We recommend you give your address in accordance with the following guidelines:

- All affiliates of Karolinska Institutet should state their address as:
Karolinska Institutet, Dept X, 171 77 Stockholm, Sweden.
Hospital address should be added, when necessary, as:
and Karolinska Univ Hosp, Y clinic, 171 76 Stockholm
- The order in which you give your addresses does not affect the outcome of a bibliometric analysis but it can determine how a journal treats and displays them. We therefore recommend that you state your primary research organisation (normally Karolinska Institutet) as the first address and your other affiliation as your second address.
- SLL employees who research wholly under the aegis of that body and are not affiliated to Karolinska Institutet must continue to state their hospital as their address. This applies even if you are conducting a research project with researchers from another university.

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