Google Scholar Metrics updated: Now it begins to get serious

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ABSTRACT

In this paper we perform a first analysis of the new version of Google Scholar Metrics (November 2012). Significant improvements have been detected, such as the possibility of consulting the most prominent publications by areas and disciplines, although only for those in English language. The citation statistics have been updated to 15 November 2012. Also the original set of journals has been modified along with the journal impact indicators, which has resulted on the entry of new journals. Finally, another major issue is the change of policy regarding the processing of documents indexed in repositories. Despite the improvements made, Google Scholar Metrics remains an inadequate product for scientific journal evaluation due to its methodological shortcomings.

KEYWORDS: Google Scholar, Google Scholar Metrics, H Index, Repositories, Scientific Journals, Research Evaluation.

INTRODUCTION

Google has caught by surprise once again the academic community by updating Google Scholar Metrics on 15 November 2012. It looks like Google is determined to distinguish itself from its competitors. If other producers of journals rankings (mainly Thomson Reuters and Scopus) update their products annually, Google has done it seven and a half months after its first release.

We must confess that we expected the company to do something like this. Joyously received by bibliometricians and painfully received by other competitors, the updating and revision of the Google product is a natural step in the expansion of the Scholar family. It seems now that it is no longer a mere amusement [1] and it is in fact becoming a serious product. It is 'becoming' serious as it still suffers many limitations. The criticisms made in our document series [1-6] appears to have had some effect and many of the problems mentioned have been corrected, being the most striking one the inclusion of rankings by areas and disciplines, as well as a major policy shift regarding repositories.

In this paper we review the most significant features of the revised version (November 2012) of Google Scholar Metrics, highlighting novelties and weaknesses identified on a first and quick analysis.

DESCRIPTION

Scholar Metrics continues offering in this version the classification of the top 100 journals worldwide by publication language, ranked by their h index and the median number of citations to articles contributing to the h index. The period of analysis used remains on a five-year period (2007-2011), but now the number of citations retrieved dates to the day 15 November, 2012 instead of 1 April, 2012.

What has not changed?

- It only includes journals that have published at least 100 articles in the 2007-2011 period and which have received at least one citation (ie journals with h index=0 are excluded).

- The rankings are presented by language (the same ten languages are still used: English, Chinese, Portuguese, German, Spanish, French, Korean, Japanese, Dutch and Italian). A ranking listing the 100 journals with the highest h index can be found for every language.

- It only shows papers contributing to the h index of a given journal (citing documents can be consulted by clicking on *cited by)*.

- It allows searching by words included in the title of a journal. In this case, only top 20 results are shown.

What's new?

The big news is undoubtedly the ranking of the journals by eight scientific areas (Humanities, Literature & Arts, Social Sciences,...) and 313 categories (Religion, Language & Linguistics, History, Algebra, …). Unfortunately this option is only available for English speaking journals. The rankings show the top 20 journals ranked by their h index for each category.

Journals may be classified into more than one area or category, although most of them are usual included just in one area and category. Clicking on a journal's h index lets you know in what disciplines and areas it is classified (provided it is one of the twenty first journals), and which is their position.

The help screen now indicates more clearly which sources are covered by Google Scholar Metrics (journal articles from websites that follow Google's inclusion guidelines; selected conference articles in Computer Science and Electrical Engineering; and preprints from arXiv, SSRN, NBER and RePEC) and which are not covered (court opinions, patents, books, and dissertations). But one of the most important updates concerns concerning repositories which have their calculations no longer based on the entire repository (which involved a great distortion in the rankings[6]), but on each of its series and collections. Thus Arxiv, RePEc and SSRN no longer appear as a whole, but instead every collection in Arxiv (table 1) or working papers series hosted on SSRN or RePEc (eg World Bank Policy Research Working Paper Series, or OECD Economics Department Working Papers) can be found as separate items.

Table 1: H index and median of citations for top 20 Arxiv collections.

COLLECTION	H INDEX	MEDIAN OF CITATIONS
arXiv Astrophysics (astro-ph)	176	245
arXiv High Energy Physics - Theory (hep-th)	137	180
arXiv High Energy Physics - Phenomenology (hep-ph)	135	182
arXiv Mesoscale and Nanoscale Physics (cond-mat.mes-hall)	132	193
arXiv Materials Science (cond-mat.mtrl-sci)	132	191
arXiv Quantum Physics (quant-ph)	126	181
arXiv Superconductivity (cond-mat.supr-con)	125	202
arXiv Cosmology and Extragalactic Astrophysics (astro-ph.CO)	107	140
arXiv Information Theory (cs.IT)	88	140
arXiv Other Condensed Matter (cond-mat.other)	85	127
arXiv Strongly Correlated Electrons (cond-mat.str-el)	84	108
arXiv General Relativity and Quantum Cosmology (gr-qc)	80	109
arXiv High Energy Physics - Experiment (hep-ex)	78	113
arXiv Optics (physics.optics)	77	99
arXiv Physics and Society (physics.soc-ph)	73	117
arXiv Nuclear Theory (nucl-th)	72	109
arXiv Statistical Mechanics (cond-mat.stat-mech)	72	107
arXiv High Energy Astrophysical Phenomena (astro-ph.HE)	70	91

arXiv Galaxy Astrophysics (astro-ph.GA)	67	91
arXiv Solar and Stellar Astrophysics (astro-ph.SR)	67	86

All in all, the new features are:

- Searchable rankings of the top 20 publications in eight knowledge areas and 313 disciplines.

- Updated impact indicators for publications in all languages up to 15 November, 2012 (previous timeframe: 1 April, 2012)

- Changes in rankings by language, and entry of new journals given the expansion of the citation window.

- Change of criteria regarding repositories, which now are segmented by collections or series.
- Major improvement in the help screen which now lists the document types included in the h index of each journal. Thus, along with the h-index and the median of citations, the position of the journal within each area and/or category can be consulted, as long as it appears in the top 20 of its category.

SHORTCOMINGS

The main shortcomings of this new version of Google Scholar Metrics refer to the categorization performed by the company, since there is no explanation on the criteria followed neither when establishing areas and categories nor when classifying journals within a field or discipline. Moreover, it can also can be criticized the fact that this division has not been made for journals in other languages rather than English.

As an example, a Library and Information Science flagship publication, *the Journal of the American Society for Information Science and Technology*, does not appear in the *Library & Information Science* discipline as expected, but in *Databases & Information Systems*. The same applies for *Information Processing & Management,* other traditional journal in the discipline.

There is also no explanation about in how many areas or categories each journal is included. So, although most publications seems to be included only in one area and category, journals such as *PLoS One* are categorized in two different areas, while others such as *Nature Materials* are classified within one subject area (*Engineering & Computer Science*) and three categories (*Materials Engineering*, *Nanotechnology*, and *Chemical & Material Sciences*). Likewise, Economics journals (but not Finance journals) are listed both within the *Business, Economics & Management* and *Social Sciences* areas.

Similarly, we have to note the lack of access to the previous version of the classification, so chronological analyses of the publications' impact evolution cannot be performed. This fact, along with the lack of information about the lapses of time between each upgrade (once a year, twice, every seven and a half moths?) and the changes in citation window (which is not

stable over time) causes inconsistency in the indicators generated and confusion when interpreting the results.

Finally, in terms of bibliographic control, Scholar Metrics seems to have improved a little: journals' titles have been standardized and abbreviations have been removed, but there are still duplicated titles and many of the errors previously reported also persist, especially those regarding the search and location of journals.

Following we describe the main limitations found.

- The inability to access Google Scholar Metrics' previous version, thus preventing from longitudinal studies on the evolution of journals' impact.

- Little consistency in the time frames chosen for the calculation of the indicators. There is no justification for extending the time frame seven and a half months for citations while maintaining the 2007-2011 period for the journals' output.

- Changes on the criteria regarding repositories, which substantially alter the results presented in the first version of the product.

- It does not specify in how many series or collections each repository is divided.

- Classification of English speaking journals by areas and categories. For all other languages, indicators have been updated but it is still impossible to access the most prominent journals by category.

- Only the top 20 journals are displayed for each area or category. It is not possible to know the position of journals with lesser impact.

- Lack of information about the criteria taken into account for the categorization of journals within areas and disciplines.

- Lack of information about the number of disciplines into which each journal is classified.

- Inaccuracy arranging journals within areas and disciplines.

CONCLUSIONS

As stated in the title of this Google Scholar Metrics new version quick review, it seems that Google is beginning to take seriously the evaluation of scientific journals by bibliometrics methods, and in fact, some improvements have been made. Besides correcting some evident errors reported in previous studies, the human touch (and not just robots' touch) can be seen now in the areas and disciplines' definition and in the journals' categorization. However, although this is true and it seems that the product is evolving in the right direction, Scholar Metrics remains far from being a reliable and valid tool due to the multiple methodological limitations identified. To our regret we must emphasized what we stated before [5]: Google Scholar Metrics is "an immature product, which presents several shortcomings in its current

configuration for evaluating scientific journals, making its use inadvisable for assessment purposes"

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SUPLEMENTARY MATERIAL

Index of areas and disciplines included in Google Scholar Metrics

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