

Altmetric is Tool to Measure the Impact of Scholarly article: A Review

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Abstract

As scholarly communication and publishing models continue to increase, it is critical that those involved in the publication and dissemination of research, develop a good understanding of the changing environment in order to identify opportunities to improve how we understand the reach and influence of research. Different tools and metrics are used to measure the quality of scholarly work. Altmetric is a article level metric used to analysis how scholarship is being found, shared, cited, and discussed. This score reflects the overall attention that an article gets. This paper revealed that how the altmetric score can become as part of scholarly publishing.

Key Words: Impact factor, Altmetric, and Article citation

1. Introduction

In recent years, the explosion of scientific literature makes it increasingly important and challenging for researchers to identify high-quality articles relevant to their field and advocacy efforts. Theoretically, prestigious journals are read widely because of the high impact of their articles. Journal reputation has traditionally been quantified with the journal impact factor. The journal Impact Factor (IF) has been the gold standard of measuring research impact . Today, a quality online article may get many citations, thereby having high impact. But if it is published in a less recognized journal, then relying on the IF alone will make it impossible to see the full picture of that article's influence.

Further, for researchers publishing in non-traditional digital research outputs, such as digital humanities websites and big data-sets, the IF offers no way to measure their impact at all. The fact that, the IF cannot be applied to legitimate but non-traditional research outputs poses a problem.

In addition to failing to show the true impact of individual scholarly works and the impact of alternative research outputs, the Impact Factor's reliance on citations has rose in many other logistical challenges. Because the IF only calculates citation impact, it limits the scope of impact assessment to a select list of scholarly journals, not taking into account the ways other scholarship is having an influence, such as in public policy documents or popular media. Journals can also manipulate their publishing methods to increase their IF, such as publishing a higher percentage of review articles, which tend to be cited more than regular articles, or by encouraging authors to frequently cite other articles in their journal, thereby gaining IF via self-citations. As a result of both intentional and uncontrollable variations in citation patterns, comparing journals via their IF can be quite lopsided.

Given the limitations of bibliometrics, many academics and editors are looking to new non-citation based article-level indicators. Altmetrics, a type of article level metric, are metrics gathered from mentions of research in non-traditional online outlets that can be used to analyze how scholarship is being found, shared, cited, and discussed. This paper discusses about the altmetric score, it's calculation and how it become as a scholarly publishing process.

2. Altmetrics: article-level metrics

Contrary to citation-based metrics like the journal impact factor and h-index, altmetrics promptly measure the impact of an individual article's dissemination. The common implementation of electronic publishing, paired with the rise of social media for dissemination and discussion of scientific literature, makes it practicable to quantify the discussion of an article on blogs, podcasts, social media platforms, and news media. It measures dissemination of individual article. As a result, highly disseminated articles may be identified within days of their publication. Altmetrics have some advantages over citation-based metrics such as the journal impact factor and h-index, the type of impact that they measure, although related, is not the same, but altmetrics be thought of as measures of "disseminative impact," whereas traditional citation-based metrics be considered measures of "scholarly impact."

3. Altmetric score calculation

One system, Altmetric.com's proprietary altmetric score, as gained traction. Altmetric is a composite quantitative measure based on 3 main factors,

1. Volume: With the score increasing as more sources mention the article
2. Authors: Weighted by 3 factors:
 - i. Reach (eg, number of followers)
 - ii. Promiscuity (eg, a source that mentions many articles in a short time is weighted less)
 - iii. Potential bias (eg, multiple mentions of the same article by the same publisher are given less weight)
3. Sources: News articles, blog posts, tweets, Facebook and Google+ posts, and other social media

The resultant altmetric score reflects the overall attention that an article gets. An important contrast to journal impact factor, citations in peer-reviewed articles are not included in the calculation of altmetric scores, so there is less recognition of the formal scientific impact of an item. altmetric scores for individual articles are freely available, whereas access to journal impact factor scores must be purchased by institutions if they are not disclosed by the journal. altmetric scores are represented visually as a colored “doughnut” or brick, which conveys the sources that contribute to an article’s score, and the center of the doughnut contains the summary numeric altmetric score.

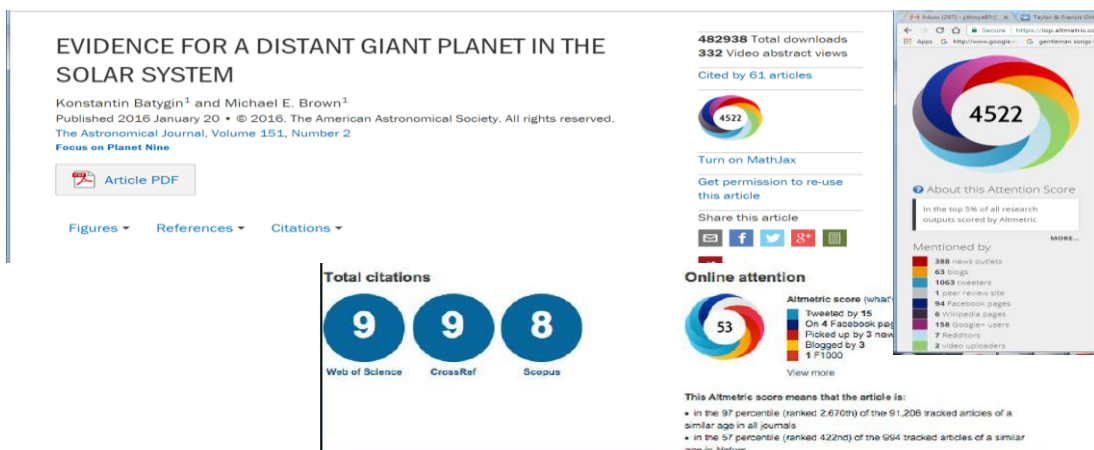
4. Altmetric score and the scholarly publishing process

Publishers have been increasingly adopting altmetrics across their publishing platforms.

Altmetrics provides easily accessible feedback directly to the author, reach of their work and reflect press outreach or online promotion carried out by the publisher. Therefore it’s promotion by publisher to make the authors to publish their work in a particular journal. Integrating altmetric with publishing program, not only value added to author, but also, it help the publishing team to measure effectiveness of journal. Also helpful for future strategic development. Below factors express how altmetric score taken in to account by the publishers for their monitoring, reporting and marketing activities.

4.1 Supplementing the bibliometrics

Altmetrics are offered by publishers as a supplement to bibliometric data. Authors and readers can get the full picture of, how the research work had impact. Following figures shows how, altmetric data shared with citation details. It show the on time impact and immediate feedback.



4.2 Effective outreach

Altmetric give a huge chance for publishers to reflect their value and reach of the content. Article published in high impact factor journals or popular journals, obviously receive good recognition, but through the altmetric score publishers getting chance to reflect the online activity impact among the society.

4.3 Accessible metrics

The main benefit of the score for early stage publishers are, there is no criteria to calculate altmetric score and not required any bench marks required for obtaining this score like impact factor. Publishers not only place focus on supporting researchers, who publish with them, but also show the value and worth of their work. Altmetrics are easy to use and lot of free tools available to incorporate into their activity.

4.4 Internal feedback loop

Publishers are using altmetric scores internally, to direct the editorial strategy and report back to editorial board, which will identify the content that, have more impact.

Journal editor and publishers can analyse their online attention data for their publication to get an idea about which content recognized most with their intended audiences. Altmetric can be tool measure the success of the outreached activity and campaign by the marketing team. Geographical data in altmetric, point out the usage pattern among the region, which help marketing team to develop strategy.

5. Benefits of altmetric for the researchers

5.1 Monitoring and tracing early attention

At present, authors rely on download stats, citation data, and direct feedback from the academics to gauge how their work has been received. The aspects of which altmetrics data are most important and considered an indicator of potential impact will differ from researcher to researcher. A key advantage of altmetrics is that they assist authors to see not just how many people are talking about their work, but also what is being said.

5.2 Showcasing tool

Altmetrics can be particularly useful for early-career researchers and authors who do not typically select to publish a journal article as their main form of research output. In both instances it is possible that the author would struggle to get citations and other more traditionally recognized indicators of impact. altmetrics offer a record of the wider attention and engagement that their work has generated: where it has been shared, where someone influential has picked it up, perhaps even where it has gone on to influence public policy or product development.

5.3 A tool for discovery

Altmetrics cannot offer any insight into the quality of the article or the author, they can help you see which articles have received a lot of attention – and by digging into the original comments you'll be able to easily identify why they had a lot or not much attention. Being able to see who taking an active interest in research in any given field can also be a useful channel for identifying potential new collaborators.

5.4 Looking to the Future of Research Impact

Open access models and alternative publishing outlets online, the nature of research impact is becoming broader and more multifaceted than ever. The rise of altmetrics presents an opportunity to get a more holistic view of research impact and influence, by factoring in new methods of capturing and reporting on the online communication and activity surrounding research, in addition to traditional bibliometrics.

6. Limitation of altmetric

Journals, publishers, and specialties with a substantial social media presence may have more articles with higher altmetric scores than those that have a smaller social media presence. The utility and reach of altmetrics may be limited in countries with restricted social media access and in developing countries with scarce Internet resources. It is often difficult to assess the credibility of commentators and the validity of their comments.

7. Conclusion.

Academia has come a long way from traditional print journal publishing. As scholars are involves open access models and alternative publishing outlets online, the nature of research impact is becoming wider and more multifaceted than ever. The altmetrics is an opportunity to get a more holistic view of research impact and influence, by factoring in new methods of capturing and reporting on the online communication and activity surrounding research, in addition to traditional bibliometrics. Even though it has some limitation, we can use this as tool to measure the impact of scholarly work.

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A Scientometrics Study of the Research Publication on Nanoscience (2011-2016): the Global Perspective

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Abstract

The Scientometrics Analysis of Research Output performance of Nanoscience research literature is an important aspect of the present study. Scientometrics studies are used to identify the pattern of publication, authorship, citations and secondary journal coverage in the hope such regularities can give an insight into the dynamics of the area under consideration. During 2011-2016 a total of 21927 papers were published by the scientists in the field of Nanoscience research. The average Number of Publications produced per year was 17%. The highest number of publications 236 was produced in 2013. The most productive author is Weiss PS with 17 papers dealing with Nanoscience research and 1.3% of all papers published in this research field. The highest number of publication is accounted to 877 (67.7%) Vs LCS 314 as Articles and lowest is as Article; Book Chapter - 1 Vs LCS 2. The highest number of publication is at USA and lowest number of publication is at Poland.

Keywords: Scientometrics, Nanoscience research, Scientometrics Analysis

Introduction

‘Scientometrics’ the branch science of science that describes the output traits in terms of organizational research structure, resource inputs and outputs, develops benchmarks to evaluate the quality of information output. Scientometric studies characterize the disciplines using the growth of the pattern and other attributes. These studies have potential particularly in assessing the emerging disciplines. In the present study, we are doing the scientometric study of the research performance on Nanoscience, a significantly growing area in the knowledge driven world.

Scientometrics

Scientometrics is “the study of the measurement of scientific and technological progress” (Garfield, 1979). Its origin is in the quantitative study of science policy research, or the science of science, which focuses on a wide variety of quantitative measurements, or indicators, of science at large.

Objectives of the Study

The main objective of this study is to examine the current status of Nanoscience, as reflected in the country research output during 2011–2016. The researcher has framed the following objectives for the purpose of present research.

- To examine the Year wise distribution of publications;
- To identify the Document wise distribution of publications output;
- To analyse the ranking of authors based on publications output;
- To identify journal wise distribution of publications output;
- To assess the Institution wise research concentration;
- To analyse the Country wise distribution of publications;

Methodology

The present study aims at analysing the research output of Researchers in the field of Nanoscience. The growth rates of output in terms of research productivity is analysed from 2011 to 2016. The authorship pattern and author productivity are examined to identify the pattern of research contribution in the field of Nanoscience. The data has classified into Histcite Software. The data so retrieved were downloaded and later imported into a database management system for data cleaning and coding. In data cleaning, all duplicate records as well records pertaining to publication years not under the purview of our study, were eliminated.

Data Collection

The basic publication data used in this study is derived from the Expanded Version of Science Citation Index (SCI) database, available in Web of Science. The raw publications data along with their citations has been downloaded from the Web of Science in December 2016. Publications data for 6 years from 2011 to 2016 were used for analyzing the growth and impact of Nanoscience research.

Growth of Publications and Citation Scores

The table 1 depicts the Nanoscience research output in the Indian level. From the below table, we could clearly see that during the period 2011 - 2016 a total of 1295 publications were published. Table 1 show that a chronological histogram of citations, demonstrating that citation frequency grew steadily from 2011; it reached a