

The Evolution of Impact Indicators:

From bibliometrics
to altmetrics

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Looking to the Future of Research Impact



As scholarly communication and publishing models continue to evolve, it is crucial 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. This ebook covers key insights about traditional and alternative research impact indicators: from the latest perspectives and thinking on research evaluation, to how new models and metrics can be practically applied by journal publishers of all sizes. We discuss how researchers are increasingly adapting their workflows to incorporate new impact indicators into their academic activity, and examine what challenges and uncertainties editors and scholars adapting to the new impact landscape might encounter.

Engaging with a wider audience and increasing your awareness of the online activity and discussion surrounding the research you author, edit, or publish need not be a daunting prospect - included in this ebook you'll find some handy tips and real-life case studies to help you get started with your own approach.

About the authors



Catherine Williams is Head of Marketing at data science company [Altmetric](#). Cat is responsible for determining and overseeing the overall marketing and outreach strategy of the company, and is actively involved in the scholarly community. Prior to joining Altmetric, Cat held roles at Nature Publishing Group, SAGE publications, and society publisher the Institution of Mechanical Engineers, where she worked in end user and library marketing across a range of science, social science and humanities titles. She is actively involved in organising the annual altmetrics conference and speaks regularly on altmetrics and their application to scholarly research.



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Reexamining Research Impact

Impact: [*n. im-pakt; v. im-pakt*] to have a strong effect on someone or something.
synonyms: affect, influence, make an impression on

Today garnering research impact is arguably easier than ever, with the rise of the Open Access Movement as well as new forms of digital research dissemination enabling journals and scholars to make their research available faster and to wider audiences. As scholarship moves beyond the confines of print pages and traditional publishing models, research is becoming more accessible both within and outside of academic institutions to be found, shared, and discussed online. The impact of modern scholarship can be seen all across the web.

In academia, simply producing influential research is not enough, though. Scholars are finding it increasingly vital to provide evidence that the research they publish is having an impact, by constructively affecting work in its respective field and beyond, in order to garner promotion, tenure, and funding opportunities. At the same time, journal editors are keen to prove that the research they publish is having such influence, in order to attract new submissions and subscriptions. While academics have traditionally used bibliometric impact indicators to track the reach of their work, the rise in alternative digital publishing outlets and venues for research discussion is expanding the scope of research impact beyond citations, and causing certain questions to arise within academia:

- What are the best ways to quantify the impact of research on the web?
- Should impact measures serve as research qualifiers as well as quantifiers - and perhaps more to the point, can they?
- How can impact indicators be used to determine the true impact of individual scholars' works and the impact of individual and collective works online both within and beyond journals?

Academics are confronting the limitations of traditional impact measures in our increasingly digital world and working to find the best means of combining new and old impact indicators to tell the full story of the reach and influence of their scholarly works.

The rise of the Impact Factor (IF)

Since it was proposed in 1955 by Eugene Garfield, American linguist and one of the founders of bibliometrics and scientometrics, the journal Impact Factor (IF) has been the gold standard of measuring research impact. The Impact Factor, which Garfield devised as a way to more easily identify “additional source journals,” reflects the average number of citations a journal receives for its recent articles, typically calculated at two and five year intervals. For example if there are 50 papers published in a journal in 2013-2014 and there are 10 citations made to those articles in 2015, the 2015 Impact Factor of the journal (made available in summer 2016) would be 0.2 (citations in year 3 to articles published in years 1 and 2/number of articles published in years 1 and 2).

The Impact factor citation data was first derived from the Science Citation Index, a citation index created by Garfield and produced by the Institute for Scientific Information (ISI). ISI was later acquired by Thomson Reuters along with the Science Citation Index, which Reuters grew into the Science Citation Index Expanded. That index is now housed in the Web of Science, a subscription-based scientific citation indexing service encompassing six other online databases. Today, Thomson Reuters calculates IFs using the data from all of the journals indexed in the Web of Science, and releases an IF listing on an annual basis in its yearly Journal Citation Reports, which is available to publishers and institutions with paid Web of Science subscriptions.

Over time, the use of the IF has expanded beyond Garfield’s original purpose to help scholars find source journals. Journal editors and publishers began to rely on IFs to perform market research, to determine where publications rank within their fields, and to communicate journal prominence to submitting authors. High IF journals are now generally perceived as more prestigious than low or no IF journals. The IF has also become widely adopted as a way of demonstrating research quality and impact in promotion, tenure, and funding proceedings.



Impact factor challenges

Despite its widespread use, in recent years certain cracks in the foundation of the IF have emerged challenging its position as the leading indicator of research impact. Chief among concerns about the IF is that it is a journal-level metric. While journal-level-metrics made sense in the 1950s, when scholars found research by reading print publications, in our digital world an article's association with a particular journal is much less consequential to how people find it or choose to cite it. Today, a quality online article may garner many citations, thereby having high impact. But if it is published in a less established 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 nontraditional digital research outputs, such as digital humanities websites and big data-sets, the IF offers no way to gauge 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 resulted 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. Additionally, because it relies on citation counts, there is often a significant lag between the time a paper is published and when it begins to contribute to the IF of the journal it was published in. In the current "publish or perish" culture academics are expected to publish impactful articles at unprecedented speeds, making waiting for citations - which can take anywhere from months to years to accrue - a real drag. Waiting for citation impact can be particularly problematic for early-career researchers still seeking to establish themselves in their field.

IFs also do not inherently account for the fact that scholars and journals in different fields cannot expect to garner citations at the same rate or volume. Citation patterns vary greatly between disciplines, and are often heavily influenced by many external factors. These include fluctuating dynamics such as how often scholars in STEM vs. humanities publish,

In our digital world an article's association with a particular journal is much less consequential to how people find it or choose to cite it.

the pace of research within any given field, and how quickly that research tends to be cited. Even comparisons of the IFs of journals in the same field can be flawed, since journals that publish niche research that is not applicable to as many scholars as their mainstream counterparts often have limitations in the number of citations and consequently the IF they can expect to generate. 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.

Additionally, the Impact Factor has developed into a sort of positive-feedback loop over time because academics tend to favor journals with a high IF for submissions and references, consequently causing those same journals to have high IFs year after year. In light of the Open Access Movement, scholars are being forced to reconsider the significance of high IF when choosing journals to publish in, thereby challenging this positive-feedback loop.

Mounting tensions between the goals of the OA movement and traditional corporate publishers that own a majority of high IF journals, which have been resistant to making their articles freely available, have brought many academics to a cross-roads. Scholars are being forced to choose between publishing in journals with lower IFs that have sufficient Open Access options, or continuing to favor the same high IF journals despite their closed publishing models. In order to ensure that their articles are taken seriously by tenure and funding committees, many academics are seeking ways to show how their research published in newer or open access journals - with lower IFs than more established titles - is having an influence on scholars and society. As more funders begin to require research to be published OA, the need amongst researchers to have alternative ways to distinguish the impact of their OA digital works continues to grow.



Beyond impact factor

Over time, supplemental indicators of impact and influence have arisen to address issues with the IF. Many of these new indicators have fallen under the umbrellas of author or article level metrics, which in addition to measuring citations of papers can also measure how often they publish, page views and downloads of articles, and the number of online comments articles generate. Amongst the alternate impact indicators produced by Thomson Reuters are the Immediacy Index, which calculates how soon an article is cited after publication, and the Cited Half-Life of an article, showing how often an article is referenced after being published.

Other alternative metrics include:

- The g-index: quantifies scientific productivity based on publication record
- Source Normalized Impact Per Paper (SNIP): weighs article citations based on the total number of citations in a subject field
- Eigenfactor: rates the importance of a scientific journal based on the impact of the journals that cite its research

Perhaps the most popular alternative to the IF is the h-index. Created by Jorge E. Hirsch in 2005, the h-index seeks to measure the impact of individual authors by measuring researchers' productivity and citations of their published works. For example, if an author published 5 articles and those articles received 30, 20, 15, 7, and 6 citations then the author would have an h-index of 5 because the author published 5 articles that each received at least 5 citations.

Since the h-index, like the IF, still relies on citation counts it limits research impact to the academic sphere. Scholars have also commented

that the h-index unfairly favors researchers whose papers have been out longer, because a scholar's h-index counts all citations to date without weighting by the age of the work. Since the h-index counts citations across all of a scholar's articles, in theory a scholar publishing many mediocre papers could also develop an unfair advantage because they could have a higher citation score than a scholar who published one landmark paper which, if on a niche subject, may only lend itself to a limited number of citations.

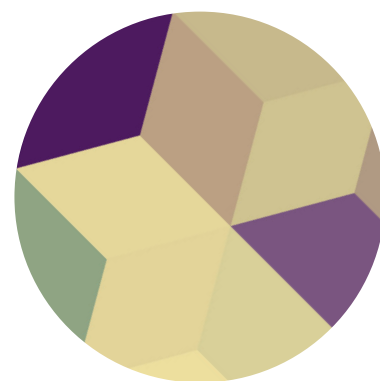
Another flaw inherent in the impact measures mentioned is that the impact they calculate is dependent on the citation indexes from which they derive their information. In addition to failing to account for alternative research outputs, these citation indexes do not take into account all journals. For example, Thomson Reuters IF only calculates citations for journals indexed in Reuters' Web of Science database. Since that database was designed to index journals following the traditional publishing model, it makes certain assumptions about how journals should work that may not apply to alternative online journals. For example, Web of Science requires journals to be "timely" in publishing a certain number of pre-determined issues a year. Publication "timeliness" is difficult to calculate for online journals publishing articles on a rolling basis. While Thomson Reuters developed a "timeliness" standard for rolling publications, stating that rolling publications must produce a "steady flow of articles," ultimately the definition of "steady flow" is a matter of opinion. This ambiguity can result in quality digital publications that publish less frequently being left out.

Despite the imperfections of existing impact measures, evaluative bodies such as tenure and research funding committees continue to use them in decision making. According to [Rachel Borchardt](#), Science Librarian at American University Bender Library, committees still rely on IFs because it makes their jobs manageable. “Evaluators can’t read everything and, even if they could, they can’t all be experts in everything that crosses their desks,” Brochardt explained. “It would be virtually impossible for funding bodies to fairly gauge the impact of niche subject area research from content alone.”

However, a growing expectation among funding bodies for research to not only be made freely available on the web, but also for academics to ensure that their research is having an impact beyond the scholarly ecosystem, is beginning to drive a shift towards new impact standards. Bibliometric impact doesn’t take into account how research is being used in public policy documentation, or how scholars, individuals, and businesses are viewing, saving, sharing and discussing research online beyond the traditional realm of journals and conferences. In response to this reality some governmental review processes and funding bodies, such as the [Research Excellence Framework \(REF\)](#) and the [Wellcome Trust](#), are starting to embrace alternative indicators of impact that can evidence much broader influence. These funding bodies are increasingly encouraging scholars to incorporate evidence of broader influence and engagement into their research evaluations, in part through the use of altmetrics and other indicators.

So, what are altmetrics and how are they shaking up the impact game? Read on to find out!

“It would be virtually impossible for funding bodies to fairly gauge the impact of niche subject area research from content alone.”



Enter Alternative Metrics

Given the limitations of bibliometrics, many academics and editors are looking to new non-citation based article-level indicators of impact as an alternative. Altmetrics, a type of article level metric, are metrics gathered from mentions of research in nontraditional online outlets that can be used to analyze how scholarship is being found, shared, cited, and discussed. Depending on the information source, altmetrics can encompass a range of insights including the number of views and downloads a research output receives, and how often that research is referenced online in public policy documents, databases, social media, news media, post-publication peer review forums, blogs, Wikipedia, and more.

In recent years, companies have emerged with different tools and services to track article level metrics and altmetrics including Impact Story, Plum Analytics (owned by EBSCO), and Digital Science company Altmetric (co-creator of this guide along with Scholastica). These tools can be used by journals to gather altmetrics data for their publication at the journal and article level, and by individual scholars to track the online activity surrounding their published works.



What are the benefits of altmetrics?

Rachel Borchardt, Science Librarian at American University Bender Library, said it well in a recent interview with Scholastica: “different impact indicators can say different things about the same article.” Over time, scholars and journals have become increasingly concerned that traditional impact indicators may not be saying enough, and so many scholars have begun to turn to altmetrics to tell a fuller story, particularly of the impact of alternative research outputs.

Unlike the IF and other bibliometric impact indicators, altmetrics can be applied to nontraditional scholarly outputs because altmetrics consist of data from much more than journal article citations alone. Additionally, altmetrics address an important logistical challenge of the IF: it can take months to years to generate article citations, especially for research in the humanities and social sciences. Alternative metrics make it possible for authors of newer works to show that their research is being read and used long before it is formally cited, and often almost immediately following publication.

Many are beginning to embrace altmetrics as an alternative impact indicator because they:

- track the dissemination of research beyond academia
- show the attention, reception, and response to a published work prior to it being cited
- can be applied to non-traditional research outputs like data-sets and blog posts
- show research impact in real-time -- scholars and journals don't have to wait for their score to be released, like in the Journal Citation Reports

As more and more universities and funding institutions in the UK, US, and beyond seek proof of the impact of scholars' work beyond academia, prominent organizations such as the Wellcome Trust are gradually accepting altmetrics (and in particular the underlying data - such as examples of news stories featuring scholarly works) as a way scholars can show how their research is being used and commented on by non-academics in areas like business or public policy proceedings, as well as mainstream social media.

Many scholars have begun to turn to altmetrics to tell a fuller story, particularly of the impact of alternative research outputs.

Questions surrounding altmetrics

While academics, journals, and funding bodies are beginning to embrace altmetrics, certain questions remain. “For so long, many academics and journals have perceived IF as untouchable and many are quick to say altmetrics will be riddled with issues,” said Rachel Borchardt. “The truth is IFs are subject to many of the same concerns people have about altmetrics - such as gaming the system. There is no perfect impact indicator - when it comes to showing the reach of research the truth is somewhere in between. Looking at multiple impact indicators can offer a more holistic view.”

One misconception surrounding altmetrics is that high counts of online shares or media mentions are meant to show whether research is good or bad. Consequently, many people worry that scholars and journals will try to game the system by heavily promoting catchy articles that may not in fact be quality scholarship. In reality, as explained by Brochardt and stressed by altmetrics producers like Altmetric, alternative metrics are meant to be impact indicators showing that research is being discussed but leaving it to the reader to determine whether that buzz is warranted, or indeed occurring for positive or negative reasons. The cause of altmetrics impact can vary, much like high counts of bibliometric article citations can be linked to article endorsements or references to previous articles’ errors.

As scholars, journals, and funders continue to navigate what altmetrics are meant to be and what they are not, many are seeking greater standardization of these new impact indicators. The National Information Standards Organization (NISO) has heeded the call by launching the [Alternative Assessment Metrics \(Altmetrics\) Initiative](#), which has the goal of developing greater standardization of altmetrics for use in displaying research impact on the journal, article,

and individual scholar level. Rachel Brochardt is a member of NISO’s committee on altmetrics definitions and use cases, which has been looking closely at the [Becker Medical Library Model for Assessment of Research Impact](#) (known as the Becker Model) as they try to come up with standards for altmetrics use. The Becker Model offers an organized list of different indicators that can be used to show biomedical research impact.

“Standardization has been the biggest impetus for this committee,” Brochardt explained. “For altmetrics toolmakers, journal editors and publishers, and researchers, we want to determine the best ways to use altmetrics to be as rigorous, unambiguous and productive as they can be.”

The NISO committee hopes these standards will encourage journals, scholars, and funding bodies to use altmetrics to their full capacity. In the meantime, many scholars and journals are beginning to adopt these indicators on their own to show the value of the research they produce and to make for a richer scholarly discourse.

For more details on how journals are using altmetrics to improve their publications check out [Scholastica’s recent interview](#) with Catherine Williams, Head of Marketing at Altmetric.

How Are Altmetrics Becoming a Part of the Scholarly Publishing Process?

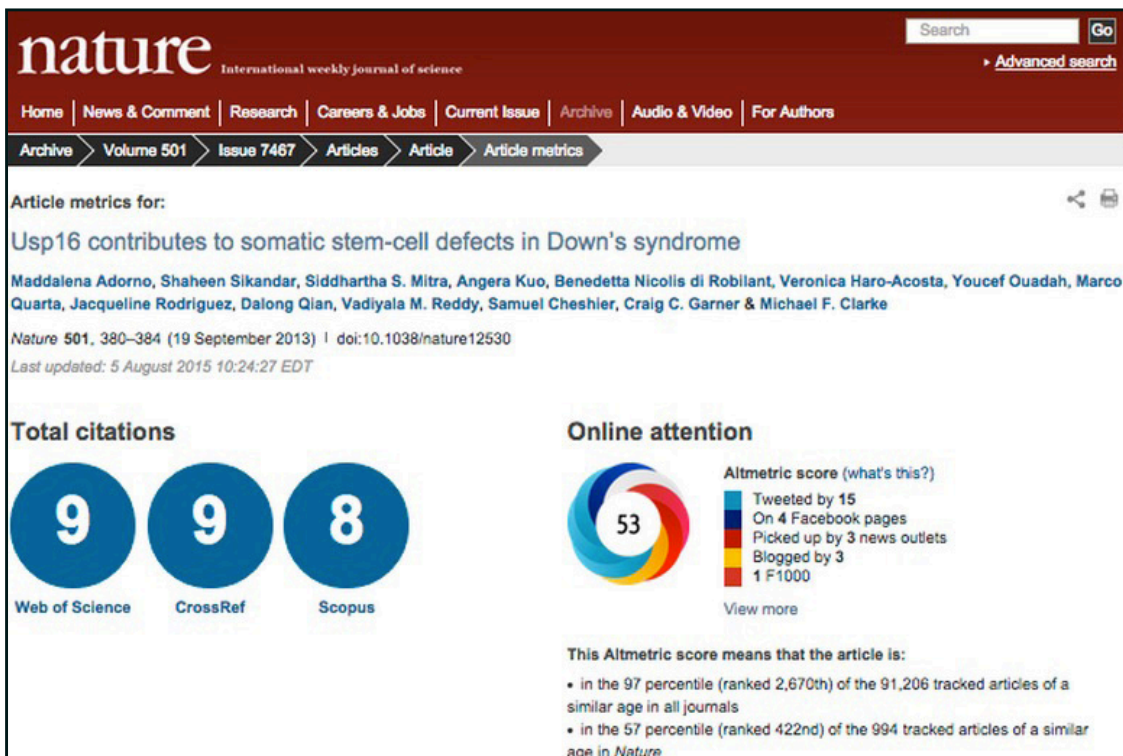
Over the last few years publishers have been increasingly adopting altmetrics across their publishing platforms. Their decision to do so is doubtlessly driven in part by a desire to be innovative (and increasingly to keep up with their peer publications) but also by the growing author-pays model of Open Access article processing charges (APCs), which leaves publishers looking for new ways of adding value to the service they offer in order to entice submissions.

Altmetrics provide instantaneous and easily accessible feedback directly to the author on the conversation and reach of their work, and often reflect any press outreach or online promotion undertaken by the publisher - thereby reinforcing the benefits of choosing to publish in that particular journal.

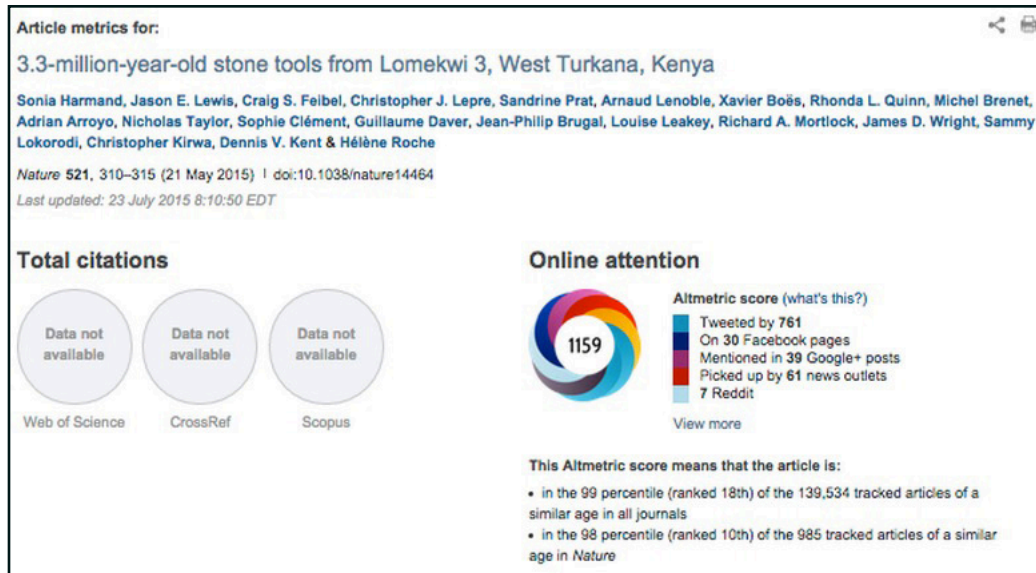
Integrating altmetrics into a publishing program does not just add value for authors. Such data can also help publishing teams measure the effectiveness of existing journal activities and develop future strategies. In this section we'll also take a look at how publishers are using altmetrics data to monitor and report on the success of their marketing activity, and explore how they are taking into account factors such as audience feedback and article reach to inform marketing and editorial planning.

Complementing, not replacing bibliometrics

In the majority of cases, altmetrics are being offered by publishers as a supplement to more traditional bibliometrics data (such as downloads and citation counts) to help give authors and readers a fuller picture of the broader impacts of published research. You can see this in action on the *Nature* metrics pages, where altmetrics data from Altmetric.com is combined with citation counts from a variety of providers:

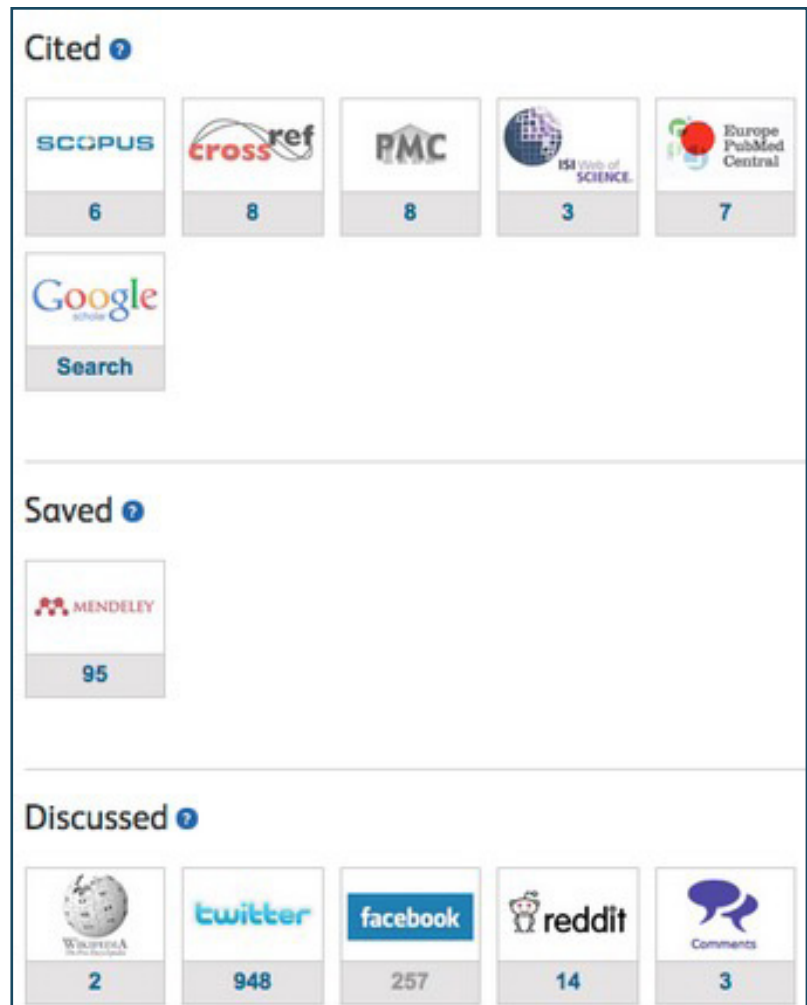


Key to altmetrics is their ability to offer real time and near instantaneous feedback. This is reflected in the example below, where a look at a more recently published article highlights a large amount of online activity, long before any citations have had time to accrue:



In another example of an integrated approach, PLOS journals have also implemented a home-grown article-level metrics package that includes shares, mentions, and captures of the work from both traditional and nontraditional sources.

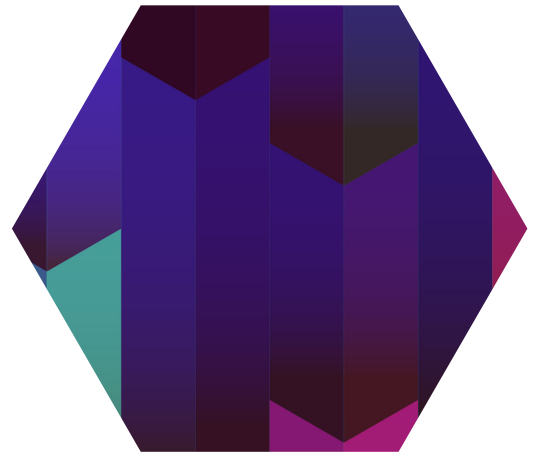
For publishers, offering such altmetrics data is a clear value-add for authors who often get little to no feedback about the broader dissemination of and response to their published work. Doing so in an automated way makes the information instantly available for authors, and can help them to better manage their online reputations, and to provide evidence of the influence and reach of their research in funding or job applications.



Demonstrating the benefits of effective outreach

Altmetrics present a massive opportunity for publishers of all sizes to showcase the value and reach of their content. Articles in established journals like *Nature* and *Science* have long been recognized as those that will often receive the most press coverage, and eventually high numbers of citations. However, through the application of altmetrics, publishers of smaller journals are also getting the chance to showcase the online activity and attention surrounding their articles, even in less high-profile outlets. Channels such as niche blogs or subject specific media are becoming much more visible via the application of altmetrics, and publishers are beginning to take a much more proactive role in building strategies to effectively promote and share their research online.

Beyond the article level, publishers are finding innovative ways to display and make use of altmetrics data. Elsevier, for example, has chosen to feature a shortlist of the articles that have attracted the most attention on the journal homepage of some of its titles. Upon launching Altmetric badges across their platform, Taylor & Francis also showcased their Top 20 articles, as ranked by Altmetric data.



Through the application of altmetrics, publishers of smaller journals are also getting the chance to showcase the online activity and attention surrounding their articles.

Integrating altmetrics at Taylor & Francis

The situation

A leading scholarly publisher, with content spanning many disciplines, Taylor & Francis identified a need to offer their authors and readers additional insight into how research articles are being shared and discussed online. They wanted a straightforward solution from a reliable data source, which could be easily integrated into their existing journal platform (on individual article pages).

The solution

Having noted the spread of non-traditional metrics throughout the platforms of many STM publishers, Taylor & Francis felt that the data they provided their authors should reflect attention from the sources that would be most relevant to them. To do this, they decided to embed the Altmetric donut badges on all of their article pages. Authors and readers can click on the badges to view the 'details page,' the collated record of the attention the research has garnered from public policy documents, mainstream and social media, blogs, and other interactive mediums such as Wikipedia and online reference manager Mendeley.

Roll out

Taylor & Francis took a number of steps to announce and introduce the launch of Altmetric data across their journals to their key stakeholders. This included publicity, blog posts for specific audiences (such as editors, authors and their wider readership), promotion via e-bulletins, an ongoing social media campaign across all channels, and the building of a Top 20 microsite to highlight the research that had generated the most online engagement across their portfolio.

Feedback so far

The integration of Altmetric data across Taylor & Francis content has generated a very positive response from their key stakeholders so far. Authors report that they are excited to see the comments their work is getting in near real-time, and editors are already starting to benefit and take note of which articles are getting the most traction.

An internal feedback loop

In addition to showcasing altmetrics for articles on their journal websites, publishers are finding innovative ways to make use of the data internally.

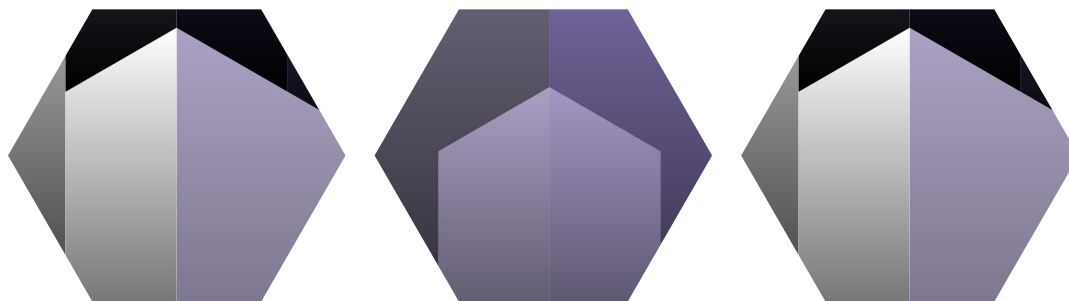
Some publishers are using altmetrics insights to guide editorial strategy and report back to editorial boards – to identify content that attracts a lot of attention or to keep an eye out for new authors that they might like to invite to publish with them. A particular example of this is in the case of MIT Press, who used Altmetric data in determining which of their previously published articles should be used to form the content for their new ‘Batches’ eBook series - collections of specially curated journal content for the Kindle. MIT Press incorporated altmetrics attention data with other metrics and expert review to form what has proved to be a successful series of new titles focussing on specific subject areas.

Similarly to MIT Press, journal editors can examine the online attention data for their articles published over the previous year or two to understand which content resonated most with their intended audiences, and identify key pieces

across subjects to highlight further - perhaps even pulling together a multidisciplinary overview on a specific topic that incorporates research from multiple fields, such as climate change.

Marketing and press departments are also using altmetrics to monitor the broader uptake of their content, and in part to measure the success of outreach activity and campaigns. The geographical data altmetrics feature helps determine which global regions are the most engaged, and highlights any possible gaps in strategy or target markets. Journals are also keeping a close eye on the activity and attention surrounding their competitor titles, using tools like the Altmetric Explorer database to benchmark the online activity surrounding their own articles with that of peer publications.

Actively evidencing to institutional libraries the broader attention generated by research published in a publisher portfolio by their faculty provides a chance for publishers to demonstrate a commitment to a shared goal of scholarly dissemination and advancement, and can help to encourage renewal of titles under review.



Accessible metrics

A key benefit of altmetrics for younger or smaller publishers is that, unlike the Thomson Reuters' Impact Factor, there is no criteria applied to make a title eligible for altmetrics. Beyond assigning a unique scholarly identifier (such as a DOI or handle.net identifier) to each individual output, publishers are not required to demonstrate any of the benchmarks required for obtaining an Impact Factor (such as publishing regularly and typically being around for about 3 years before they will be considered for inclusion).

Increasingly, it's not just journal articles to which publishers are interested in applying altmetrics. Publishers such as Springer and Michigan Publishing have rolled out similar data to other forms of content - books in the case of Springer, and reports and grey literature at Michigan Publishing.

Charles Watkinson, Director at University of Michigan Press, has been particularly innovative in his thinking on the adoption of altmetrics across their content. As an institutional publisher, he states, they not only place a focus on supporting the academics who publish with them, but there is also a need to demonstrate the value and worth of their publishing activities back to the institution that funds them. Using altmetrics to evidence engagement of their research amongst a broad audience plays a big part in this, and helps the publishing team articulate their successes back to their internal stakeholders.



Altmetrics at Michigan Publishing: applications for a university press, publishing services program, and institutional repository

The situation

As part of one of the world's leading research libraries, the staff of Michigan Publishing are responsible for a large portion of the publishing activity within the University of Michigan. Their activities include book publishing through the University of Michigan Press imprint, an open access journal publishing program, and the institutional repository, [Deep Blue](#), which hosts a wide variety of grey literature outputs such as technical reports, white papers, and electronic dissertations. Substantially supported by the University (and as a fully open access publisher), Michigan's team members are keen to consistently demonstrate their support for furthering the disciplines in which they publish, which include a mixture of humanities and the social sciences. A second key priority for Michigan is demonstrating the value of their activity to the publicly-funded parent institution that supports them. As such, they are constantly looking for ways to help researchers not just further progress in their field, but also to maximize the broader influence and awareness of their work in a way that can be captured and given context.

The solution

Michigan saw that incorporating altmetrics data across their platforms could provide valuable feedback for their authors, as well as data that could be used to report on the reach and influence of their publishing activity internally. Starting with their journals, with the intention of expanding coverage to other outputs later on, Michigan has begun to use the Altmetric badges to track and report on the online attention their publications receive.

Roll out

First incorporated on their journal articles, Michigan has now rolled out Altmetric data on their open access book program, [Digital Culture Books](#), and on the institutional repository, [Deep Blue](#). They hope to find ways of including other content over the next few years, especially the monographs they publish through University of Michigan Press. A particular aim across all this activity is to provide authors whose impact is often underrepresented via traditional measures (books, for example, do not get an Impact Factor) with a much more granular picture of how their work has been interpreted and reused. Through altmetrics, Michigan can deliver these faculty members examples and evidence that can be used to demonstrate their influence and the reach of their research.

Feedback so far

Particularly internally, Michigan Press has seen a really positive response to the inclusion of Altmetric data. The management committee values being able to have a wider view on the impact of their publishing program, and the staff within the press are using the data to identify success stories and to help build future outreach strategy. Feedback from authors is also proving positive, with many reporting that they regularly check in on the altmetrics for their own work and that of their peers.

Altmetrics also offer great potential to provide better feedback to authors and readers of Digital Humanities content. Although such applications of the data are only in the early stages of being properly explored, altmetrics have the potential to deliver valuable insight and evidence of broader engagement and influence that was previously unattainable for scholars in those disciplines.

The key message for publishers and journals of all disciplines and sizes to take away from altmetrics is: don't be overwhelmed. Altmetrics are easy to use - and you can pick and choose those that are the best fit for you and your audience. There are lots of free tools out there to help you start incorporating altmetrics into your workflow, and an increasing number of conference presentations and case studies of publishers sharing their experiences using these new data.

5 ways to get started with altmetrics

Journals of all sizes can benefit from the data and insight that altmetrics can provide. Here's some easy ways you can get started:

1. Install the free [Altmetric Bookmarklet](#) in your browser toolbar - this can be used to see a summary of the online attention for any article with a unique identifier (such as a DOI), including those in your own journal!
2. If you publish research yourself, set up a trial [ImpactStory](#) profile to create an online CV that showcases the altmetrics for your own work
3. Get yourself an [ORCID](#) profile and then try out the [Altmetric.ID](#) bookmarklet on it
4. Take a look at your competitor journals - what metrics do they provide? Where is their content getting the most attention online?
5. Think about your audience and authors: what sources of attention are likely to be of most interest to them? This can help you determine what altmetrics data might be best to provide.

What Are the Benefits of Altmetrics for Researchers?

It's not just journals and publishers that can benefit from altmetrics – they offer huge value for authors and readers of scholarly content as well. Broadly, the potential uses of altmetrics for academics fall into three main categories: for monitoring and tracking early attention, for showcasing engagement, and for discovery purposes.

Monitoring and tracking early attention

At present, authors rely on download stats, citation data (which takes a long time to accrue), and direct feedback from the academic community to gauge how their work has been received. With altmetrics, those same authors can start to see not only how academics but also how the wider public are responding to their work as soon as it is published. If a fellow scientist writes a blog mentioning their work, an influential figure shares it on Twitter, or it is highlighted in the mainstream media, altmetrics enable the author to see this immediately and without the need for intervention from any third parties. The aspects of which altmetrics data are most important and considered an indicator of potential impact will differ from researcher to researcher. For example, someone publishing a study on water use in Africa may be particularly keen to see that many of those tweeting and sharing the work are based in that region, whereas economics scholars might want to keep track of where their work is being referenced in public policy or by leading think-tanks.



A key advantage of altmetrics is that they enable authors to see not just how many people are talking about their work, but also what is being said. This means that authors can now be quickly alerted to any misinterpretation or misuse of their research, and have the opportunity to respond directly to the source - a key factor in enabling them to more easily manage and retain control of their professional reputation and online presence.

For readers of scholarly content, altmetrics add context that was previously unavailable directly from the publisher site. Along with the abstract giving a summary of the content, altmetrics make it possible for readers to also see the attention that research has generated from media sources and social networks, reviews it has attracted on post-publication peer-review forums, and what the people making those comments thought of it. This, combined with their own analysis of the article, can help the reader decide the importance and relevance of the publication to them.

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Showcasing Engagement



Authors are facing more competition than ever for funding and career development opportunities. The volume of scientific content has risen dramatically in the last 10 years, and continues to do so. Processes in place to evaluate research vary greatly from country to country, with criteria coming from a range of governmental initiatives, funders, and even internal review bodies. Demonstrating the broader impacts of your work is crucial to telling the full story of your research, and the benefits that it gleans.

But how can scholars demonstrate, or even at first identify, these broader impacts? Altmetrics, although of course not the whole story, can provide a handy indicator for identifying where there is a tale worth telling. As we discussed previously, the importance of the different sources of altmetrics data captured will vary enormously based on the criteria of the author.

Showcasing insights gathered via altmetrics (for example, that your work has been featured in news outlets local to the geography that the work focuses on, or that it has been shared and discussed amongst a certain target community online) alongside things like citation counts, face to face interviews, economic measures or other quantifiable types of impact, can really help to highlight the full picture of your research.

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 accrue 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.

Researcher use case: using altmetrics to identify and showcase the influence of your work to funders

The situation

Terrie Moffitt is the Nannerl O Keohane University Professor at Duke University. In looking to demonstrate the broader impacts of her work to her NIH and MRC program officers, Terrie was keen to understand more about the attention and online activity relating to her work, and to determine if any of that information would be good to include in her report.

The solution

Terrie used Altmetric data to uncover a lot of activity around her work that she was previously unaware of. Altmetrics were able to show her that her work had been referenced in policy documents published by two major organizations - evidence she considered “bona fide data demonstrating that practitioners – not researchers – but folks who can affect lives through legislation, health care, and education, are using my research to better their work.”

Terrie realized she had previously had no idea of the scope of news coverage or people sharing her work online, particularly on Twitter where she found practitioners discussing her research, and this made her think that perhaps she should reconsider her approach.

Feedback from program committee

On receiving Terrie’s application the program officer gave very positive feedback on the additional context she had uncovered via altmetrics. Her NIH program officer commented, “[This Altmetric data is] fantastic information for [our] budget report.”

Using altmetrics to identify this influence saved Terrie a lot of time, and helped her see and interpret how broadly her work was disseminated, and via what channels - information that she can use to improve future outreach strategy.



Terrie Moffitt,
*O Keohane University
Professor at Duke University*

A tool for discovery

Identifying the most relevant and interesting content to read in the limited time available in the day is an ongoing challenge for academics. The criteria for determining where to start is likely to differ depending on the objective. For example, a skim of the table of contents of a regularly read journal would of course be done in a very different context to gathering background information for a paper or new project.

Although 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 (it might be that someone has spotted a mistake that has been widely publicized, or that the research represents a particular breakthrough).

Being able to see who is taking an active interest in research in any given field can also be a useful channel for identifying potential new collaborators, or new communities to engage with. This can help build a very effective outreach strategy to help ensure a researcher is being seen by the people

they want to see it. It might be useful to know, for example, which influential bloggers are discussing research in their field, and where it would be worth reaching out to to build a relationship with the aim of raising the visibility of future publications. Similarly, a researcher might identify media outlets they should specifically target with news of their publication, or develop a presence in online discussion forums that would also be interested to hear about it. Altmetrics enable scholars to take a look at the other work being published and publicized in their field and identify the most effective routes to the engagement and attention they want to generate for their own work.



The Mondoux Lab @MondouxLab · Jul 13

Found out about @altmetric (TY @NateHafer). Discovered that @GabriellaCeresa tweeted our #GENETICS paper back in '11!
bit.ly/15icmD0



Dr M. Charalambous @MariosDVM · Feb 24

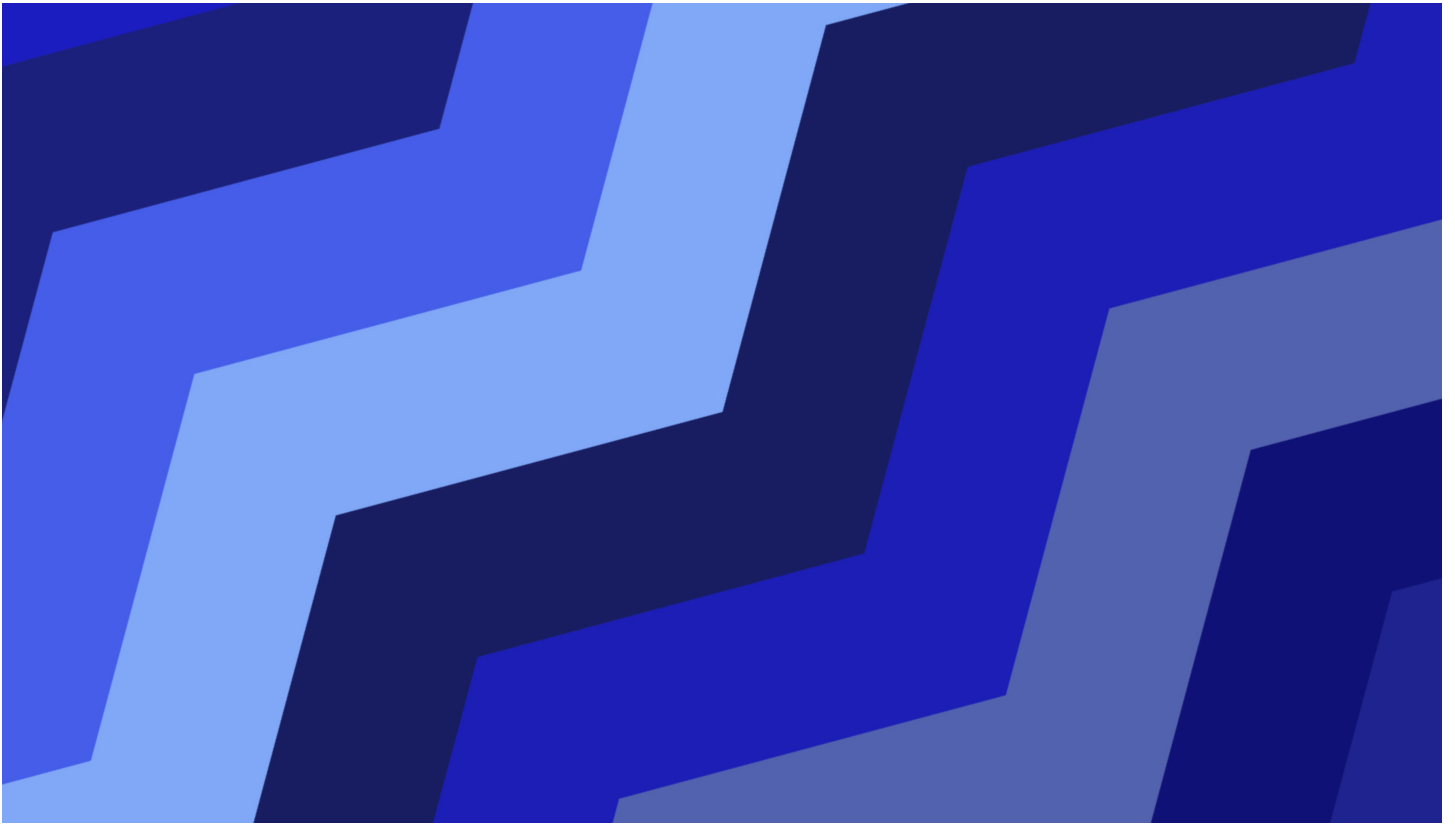
@altmetric Hey altmetric team I found that my article (which you track) is cited by Wikipedia :-D
en.wikipedia.org/wiki/Epilepsy_...

There are various tools available directly to researchers for tracking and capturing the online attention and activity around theirs and others' work. These include:

- The freely-available [PLOS metrics](#) (available directly from PLOS article pages)
- [ImpactStory](#) profiles – which, for a small fee each month (and an initial free trial period), enable a researcher to build an online CV that pulls in the associated attention and citation data for their works
- Altmetric – which provides [details pages](#) collating the attention for research outputs that can be accessed via the free-to-install [Altmetric Bookmarklet](#), or is often accessible via the colorful 'donut' visualization found on many publisher and institutional repository sites

Top tips: Getting your work the attention it deserves

1. Early on in your research, determine what success will look like for you: who do you want to see this work? What influence or impact do you want it to have? Use this to determine your outreach and engagement strategy.
2. Where possible, publish your work Open Access or get a sharing link from your publisher that will allow people you share it with direct access to your work.
3. Tweet about your work at conferences (you could even set up some tweets to automatically post during your presentation), and promote it via your other social profiles.
4. [Take a look at altmetrics for other articles](#) in your field, and use this to identify channels and sources that might be interested in your work.
5. Set yourself up a trial [ImpactStory](#) profile to start monitoring the effect of your outreach activity.
6. Write a short lay summary of the key objectives and outcomes of your work to help make it more accessible to a wider audience.
7. Work with your university and/or publisher press team to plan well ahead for the announcement of any major findings.
8. Share a link to your latest research in your email signature.
9. Get yourself an [ORCID ID](#) so people can easily identify which research is yours, and ensure you get credit accordingly.
10. Make your data, posters, images, and other supporting files available (and citable) via a platform such as [figshare](#) or [Dryad](#).



Looking to the Future of Research Impact

Academia has come a long way from the age of traditional print journal publishing. As scholars embrace 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. While scholars have yet to find an infallible impact indicator, the combination of altmetrics and bibliometrics presents an exciting opportunity to get a more accurate representation of the reach and influence of new scholarly outputs.

Ebook brought to you by:



About Altmetric

Altmetric are a data science company based in London, UK. Supported by Digital Science, Altmetric was founded in 2012 with the aim of helping publishers, authors, funders and institutions more easily track and report on the online activity surrounding their research. Altmetric believe that researchers should get credit for their research no matter what format the output, and that metrics can provide a useful indicator of the potential broader impacts and influence of scholarly work. Altmetric data is currently being utilized by leading publishers, funders and institutions large and small, including Springer, Nature Publishing Group, Taylor & Francis, Wiley, Michigan Press, the Genetics Society of America, Duke University, Cambridge University, the Wellcome Trust, and the Templeton Foundation.



About Scholastica

Journal management streamlined.

Scholastica is an end-to-end academic journal management platform with all the tools needed to track submissions, automate administrative tasks, and coordinate communication throughout peer review. Along with a complete peer review management system, Scholastica offers open access publishing software and webpage hosting to its member journals. Among Scholastica's journal users are MIT Press and Johns Hopkins University Press journals, as well as open access journals *Sociological Science* and *Journal of Applied Bioanalysis*. Scholastica is hosted, managed, and updated by our team in the cloud, so journals don't have to worry about IT at all.

Further reading

- [Altmetrics Manifesto](#)
- [Altmetric, Social Media, and Impact](#)
- [From bibliometrics to altmetrics: A changing scholarly landscape](#)
- [The History and Meaning of the Journal Impact Factor](#)
- [How to Track the Impact of Research With Data Metrics](#)
- [Impact and Attention: What Can the Metrics Tell Us?](#)
- [The Impact Factor Game](#)
- [The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management](#)
- [Three Simple Ways to Improve the Tenure Process in the United States](#)
- [The Thomson Reuters Impact Factor](#)