



What Is Altmetrics Counting and How Do Altmetrics Help Authors?

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As an author, you might be curious about the altmetric score and how altmetrics can help you. Fundamentally, altmetrics concerns the measurement of the use of your research article beyond the traditional measures of a journal impact factor, which uses citation counts in scholarly information sources. There are many types of “use” measured by altmetrics—mentions in Wikipedia, social media like Twitter, saves in Zotero, links in bookmarking services like Delicious—and much more. Altmetrics measures uses in scholarly and non-scholarly outlets. Think of altmetrics on a continuum, with scholarly impact on one end (traditional citations and bookmarks in reference management databases) to popular and societal impact on the other end (tweets and Facebook mentions).¹

The list below represents many of the data sources and types of data tracked for the research outputs noted. For some sources, only one type of research output is tracked; for others, several may be counted. Not all altmetrics sources or aggregators use the same terminology for their measures, count the same metrics, or count the metrics in the same manner, frequency, or with the same methods. Some may employ weighted measures too for some metrics. Thus it is not statistically correct to compare altmetrics scores across aggregators or social media. The following list includes overlap to familiarize you with the terms that altmetrics aggregators use and report to you.

- **Usage:** Can include clicks on your works, downloads of the article, views, library holdings, or plays of a video.
- **Readership:** Can include number of views, saves, downloads, comments, or scholarly (or popular) mentions (sometimes called buzz) on publisher sites or other integrated sites.
- **Captures:** A term that counts a bookmark to your article.
- **Twitter:** Number of tweets that mention the resource and/or the number of Twitter users that have tweeted (or re-tweeted) a publication.²
- **Reference managers:** Number of “saves” in online reference managers.
- **Blogs:** Number of times a publication has been mentioned in blogs.²
- **Mentions:** Some measures count blog posts, comments, reviews, and Wikipedia links as a mention.
- **Social networking platforms:** Number of links or references to the resource.
- **Number of discussions:** Recommendations or copies made of the resource.
- **Facebook walls:** Number of times a publication has been mentioned on a wall on Facebook.²
- **Google+:** Number of users that have mentioned the publication.²

- **News outlets:** Number of mentions of scholarly articles in magazines and news² including mainstream media and press releases.
- **Citations:** Social media counts citations from non-traditional sources like citation indexes, patent citations, clinical citations, and public policy documents.
- **Wikipedia:** Number of mentions of articles or other academic outputs in the English-language version.³

Altmetrics aggregation services

There are aggregation services that measure how much an author’s works are used within social media. To make better sense of the diverse altmetrics measures, and to save time, authors should use an aggregator service.⁴ There are currently three main products: Altmetric.com, Impact Story (impactstory.org), and Plum Analytics (plumanalytics.com).⁵ These services normalize the data for use by individuals, institutions, publishers, funders, and others. Authors can see how they compare to others and can access, see, and share the reports and reuse the data as needed. Not every service measures all social media, and not all services measure in the same way.

Availability of aggregation services to authors

Not all services are directly accessible via an author registration or individual subscription, which can be confusing. Altmetric.com and Plum Analytics data are licensed by institutions, though the data is available to authors for free via an institution or publisher page. Authors can see their data from these services on their article page from their journal publisher, or an author page, from their institution when they have faculty status, or via a library licensed database like Scopus. Altmetric.com also licenses to publishers or institutions.

Impact Story is available to the individual and uses data from Altmetric.com. The service is currently free to authors, supported by the Sloan Foundation, but it may or may not have an annual fee after a free access period. Impact Story uses CrossRef for article metadata and ORCID for author identity management.

Additionally, there are other services an academic institution may use like the Mendeley Institutional Edition (MIE) that functions as an analytics tool. MIE is built on top of Mendeley, so an academic institution can understand its research output⁴ and impact.

Other ways publishers and aggregators are helping authors is by putting the altmetrics data in context for interpretation. For example:

- Impact Story normalizes data by publication year and includes percentiles—it might, for example, note that a given paper has more readers on the online reference manager Mendeley than 97% of papers indexed that year.⁶
- Altmetric.com shows results normalized by journal, which allows fairer comparison of papers in discipline-specific publications.⁶
- Google Scholar Citations is a service that allows authors to track their publications and influence using Google Scholar metrics.⁴

Overview of Altmetrics Measures Collected by Aggregators*

Altmetrics type	Impact Story ⁷	Altmetric.com ⁸	Plum Analytics ⁹
Views, downloads	X Uses data from Altmetric.com to track online impact	X (optionally available and embedded on publishers’ journal articles in badges and detail pages, but not	X (number of times abstract or full text was viewed, or the HTML was viewed or downloaded on various sources including the vendor’s products

	of publications	included in score)	(EBSCO) as well as PLoS, PubMed Central and others, see vendor site for listing)
Readers, bookmarks, tags		X	X
Comments		X (peer review)	X
News media		X	X
Blogs		X	X
Policy documents, reports		X	X
Books, book chapters		X	X
Journal articles		X	X
Presentations		X	
Data sets		X	X
Syllabi		X	X
Specific social media	Impact Story⁷	Altmetric.com⁸	Plum Analytics⁹
BASE – Bielefeld Academic Search Engine	X Identifies free full text articles, calculates #OAScore as the percentage of work free to read in open repository		
Bit.ly			X (number of clicks of the URL)
CiteULike		X (coverage ended Dec. 2014)	
Delicious	Uses data from Altmetric.com to track online impact of publications		X (Number of times an artifact bookmarked)
Dryad			X (number of times the artifact has been viewed)
F1000 Reviews		X (links)	
Facebook		X (posts on public pages, not individual timeline posts)	X (number of times a link was shared, liked or commented on)
figshare			X (number of times the artifact viewed, recommended)
GitHub			X (number of collaborators of an artifact, and number of times artifact followed, or repository 'forked', and number of people watching the

			artifact for updates)
Google+	Uses data from Altmetric.com to track online impact of publications	X (public posts only)	
Mendeley		X (number of readers, not included in score)	X (number of people who added artifact to their library)
OCLC's WorldCat			X (number of libraries that hold the book artifact)
Open Syllabus		X (link syllabi's contents)	
Publons		X (peer review comments)	
PubPeer		X (peer review comments)	
Q&A (Stack Overflow)		X (links)	
Reddit		X (original posts not comments)	
Scopus		X (citation counts, but not included in score)	
Slideshare			X (number of times the artifact has been viewed, and number of times the artifact marked favorite)
Twitter		X (public tweets, quoted tweets, retweets)	X
Vimeo			X (number of times the a video played, and number of people subscribed for an update)
Wikipedia (English language)		X	
YouTube		X (links to outputs in video comments)	X (number of times the a video played, and number of times the artifact marked favorite, and number of people who have subscribed for an update)
*Note: This listing is not all inclusive and does include or describe all the metrics from these aggregators. Not all data that is counted and displayed may actually be used in the aggregator's altmetrics score. Not all metrics may be counting the same items, or counting in the same way. Check the aggregator's websites for details.			

The value of altmetrics to authors

A Lippincott, Williams & Wilkins (LWW) survey reported that authors used social media to help identify areas of interesting research and to find fellow researchers worth noting.¹⁰ So this data supports the current awareness need for

authors when interacting with social media. Altmetrics has other uses, too, such as identifying collaborators and providing deeper insight into your research impact for your CV, for tenure or promotion applications, or grant proposals—to name a few.

Altmetrics data can provide authors help

- **Support for tenure or promotion:** A *Nature* article noted that Steve Pettifer and his colleagues wrote a paper on digital library tools (D. Hull et al. PLoS Comput. Biol. 4, e1000204; 2008). Imagine his surprise in 2012 when the Public Library of Science (PLOS) said at that time, it was the most-accessed review ever on any PLOS journal, viewed or downloaded 53,000+ times. Nice to know, and he added it to his CV. After initial skepticism about what it was, it got noticed, and he got promoted.⁶
- **Networking:** A professor and author noted in a YouTube video that if you are new to a field, or a just beginning your career path in academia, interacting online with senior authors and researchers via social media is low-stress, easy to do, and does not need to be time consuming. Such social media interaction paves the way to make a networking introduction easier for you when you finally do get to meet that senior author you admire and read.¹¹
- **Showcase a paper, perhaps one without many citations:** A librarian noted that the published paper is not the end goal of most authors. All of these measures of what is published are outputs. It is what is *in* the paper that influences and directs future studies and advances science and medicine that is the real measure of impact. Altmetrics helps an author “see” the full nature of the paper, measuring collaboration, dissemination patterns, grants, research trends, new techniques, etc.¹²
- **Support a grant funding proposal with impact data your team can efficiently find and use:** Some funders have criteria that include documenting broader societal impacts from your research.⁴ And sometimes your works allows no time to track that impact!

Altmetric.com’s case study of Terrie Moffitt, the Nannerl O. Keohane University Professor of Psychology and Neuroscience at Duke University,¹³ explains this value. She needed to demonstrate broader impact of her work in her grant application to the U.S. NIH and the U.K. MRC programs. Using altmetrics she learned her work had been referenced in policy documents published by two major organizations.¹⁴ The professor learned her lab and its work was in the top 1% with global reach, found new collaborators from comments, and identified their methods were highly tweeted. They now emphasize methods in social media and follow commenters. The aggregated data used by her lab staff from Altmetric.com provided efficiency, eliminating the time-consuming or impossible task of chasing such data down manually.¹⁵

Action Plan

So now that you are convinced altmetrics can help you and you want to get started, where do you begin? The following list of techniques and tips provide a simple plan.

Always keep in mind two guiding principles:

1. **It is important to maintain and manage any and all online presences you create.**⁴ Don’t start and then stop.
2. **Your social media and altmetrics success depends on discipline regarding⁴ best practices and feedback loops.** The latter can be your own observations and preferences after learning more about a tool, as well as input from colleagues.

Techniques and Tips

- **Choose one or two primary platforms⁴ and choose carefully.** If your colleagues do not use Facebook, consider another. Some institutions limit access to social media, so don’t choose one if you need access during your workday and it is blocked. If a tool seems too complex or time consuming for you, start with an easier one.¹⁶ Perhaps choose one that your institution includes in a workshop, or one that is popular with your discipline. Including Twitter at the start is generally easy and often used by authors in medicine and the life sciences.

- **Get an ORCID identifier or other author identifier if you do not have one.** If you are unfamiliar with ORCID, read more at orcid.org. Use DOIs and URLs whenever possible on your works and reuse them in social media to assure accurate attribution and counts. (An article DOI can be used on Impact Story to discover its metrics, for example.⁴)
- **Choose an altmetrics aggregation service**, perhaps one offered by your institution, to discover and track altmetrics of your works. Or get started with a free one mentioned in this article.
- **Read the terms of service** and create an account/profile with each tool and/or platform you choose to use. Keep track of your logins and passwords!
- **Spend time crafting your profile to reflect your research interests and authorship using your tools of choice.** Remember, this is often the first impression others get of you as an author and your research.⁴
- **Keep your profile up-to-date.** Journals, vendors, and institutional repositories and others can capture and display your altmetrics and link back to your profile.⁴
- **Invite colleagues** to link, follow, join, bookmark, etc. your presence.
- **Spend a week or two reading and watching what other researchers do with social media to promote their works.** Watch when and how they promote their works—learn by observation.
- **Actually use the tools for current awareness**, regularly monitoring scientific social networks⁴ you select and explore platforms that may link to your research.
- **Visit publishers' sites like LWW.com** regularly to see data and uses, as many journals display some form of altmetrics on their sites automatically.⁶ LWW uses Altmetric.com, for example. View the trademark Altmetric “donuts” used for your article or of a colleague.⁵

The Colours of the Donut



Score is weighted to reflect the relative importance of each type of source. It's easy to imagine that the average newspaper story is more likely to bring attention to the paper than the average tweet. This is reflected in the default weightings.

Example default score contributions for different sources:

News	Blogs	Q&A forums	Twitter	Google+	Facebook
8	5	2.5	1	1	0.25

- **Get and use the [free Altmetric Bookmarklet](#)** from Altmetric.com to instantly view the altmetrics of a paper. It has drag-and-drop installation for Chrome, Firefox, and Safari and lets you see the online shares and mentions of the article with a single click from within your web browser.
- **Get your feet wet by using one tool to accurately attribute your research⁴** and promote one work. Use the DOI when possible, and remember the current awareness rule. Why should someone pay attention to your authored research object and use that in your post or other initial use of social media?
- **Monitor the altmetrics impact** to your post in your social media aggregation tool. Did anyone retweet, mention, link, blog, or otherwise notice your authorship?
- **Promote your works based on your observations and altmetrics data.** Does a catchy headline gets more retweets, or is it a topic? Does your presence get more attention after significant sharing of the work of others? What else can you test?
- **Reflect and plan.** Maybe you have used social media for many months or years and know the steps outlined here. Do you have a plan for using the tools to promote your research? If you are serious about accruing altmetrics for your professional profile, creating and using a plan can make all the difference.

- **Ask yourself, what could you do with these tools?** What do you want to achieve? How can social media and altmetrics help you with any of that? Write down your own “manifesto” and a simple manageable plan. Integrate it into your work-life and be sure you note how often you will check your social media and altmetrics data. Keep a copy of it on your desktop and revisit it regularly and revise it at least annually.
- **Do you separate your personal and professional online personas?** It’s a matter of personal preference and some authors do, some do not. Do you need two accounts on any one tool for that purpose? Should you post separately to family and friends, from your professional colleagues? Do you have time to separate out public posts from private ones, and does the tool allow that? Stop and consider the impact of intermingled information over the long term and if there are any significant negative possibilities. Alternatively, consider using one tool for only personal social interactions and another tool for professional purposes. What makes sense for you?
- **Some online content never dies.** Never tweet, blog or use social media on any platform for anything you may someday want to forget or could regret later. The Internet can be unforgiving, and deleted information may continue to live online in archives, news sites, or the [WayBack machine](#). There are some countries with regulations in this regard, generically called the right to be forgotten, but are the exception.
- **Learn the “settings” and set-up of the tools/platforms.** If you are doing a lot updating, turn off “update alerts” so you do not unintentionally overload or mislead your social network. For example, a colleague updated her long-outdated online profile because of upcoming candidate interviews for a vacant position. This led colleagues to think the “updated” job title was a recent promotion, and created a lot of “confused buzz.”
- **Remember, you can’t control the message.** After your message is sent externally, it generally can’t be recalled if unread. Where your message is forwarded, the comments or reactions to your message, or even who reads it, are all out of your control. A message about your research often finds its own path. The best way to create influence and attention for your profile as an author is to show up, help colleagues, and honestly and authentically participate with the individuals in your social media/networks.
- **Be humble.**¹⁶ Sure your work may be the best, but let others say that—it goes further.
- **Engage your followers.**^{4,16} Be interesting, creative, offbeat, enthusiastic, and honest in your social media messaging rather than boring.¹⁶ Your altmetrics scores may positively reflect all of that. Be certain to engage with the attention you receive to identify new collaborators, new audiences, and new opportunities.¹⁵
- **Be careful of language.** Don’t complain about anything or anyone or use words that may be sensitive to people, especially when promoting your work, even if it gets attention. What is inappropriate in the workplace is the same online. Don’t use negative commentary when responding to negative commentary by others. Turn it around if possible.

Potential Pitfalls and/or Limitations of Altmetrics

Like traditional citation metrics, altmetrics are subject to many pitfalls and fraud. For example, be wary of:

- Author disambiguation. Is your data mixed in with someone else? If so, contact the altmetric aggregator.
- Is some of your data missing or lower because it is older? Over time, social media has assumed more import, so comparing a score in 2010 to 2015 is inaccurate and misleading.⁶
- Data sets might not be comprehensive for example with services detecting news stories. If the URL for the study is not in the news, the data count of that news mention is missed and thus undercounted. Check in with the public relations office issuing the press release.⁶
- Is someone gaming data⁵ and you are caught in the cross-fire? Are your comparisons significantly lower than expected because another article is artificially higher? How can you really know? For example, Jeffrey Beall notes companies sell Facebook recommendations for a price, and anyone with enough technical skill and maliciousness can program phony social media profiles to endorse their links to inflate data. Altmetric.com reports that gaming is simple to spot algorithmically for Twitter, for example.⁵

- No one is monitoring conformance to standards, so a lack of authority and regulation of social media means that you should use the data carefully on grant applications or promotion materials.⁵
- Lack of altmetrics data comparisons between disciplines can lead to skewed comparisons. All altmetrics data should NOT be treated equally. Be wary of dashboards comparing schools or departments, or across different altmetrics aggregators. One discipline may use Twitter, another may prefer Mendeley.
- Some disciplines are just not sexy like analytical chemistry and altmetrics may be non-existent.¹⁵
- No attention does not mean the research work is bad, and conversely, a high attention score may be for negative comments. Attention can be positive, negative, or neutral, and it is all measured. Only a qualitative assessment of the altmetrics scores and comment can identify its value to you as an author. Standard altmetrics do not do this.¹⁵

Libraries and librarians as altmetrics resources

Librarians are delivering workshops at colleges and universities to educate faculty and graduate students about social media. They are offering best practices, discussing the tools and measures and what data the university may offer to authors. Librarians are advocating altmetrics to showcase the research of the institution's authors for use perhaps in a research assessment system. Librarians now view altmetrics as a part of the research lifecycle and some formally include it on their menu of library scholarly communication services for their university.^{4,17}

Visit the website of the library or your alma mater to learn more. Most medical, nursing and allied health schools have guides on this topic and use keywords like altmetrics or scholarship to locate their LibGuide. Many libraries also list reputable social media or scholarly sharing sites specifically for medical disciplines for example see the website of Weill Cornell Medicine, Samuel J. Wood Library, aptly named [SCISSORS - Scholarly Communication Information Services in Support of Research](#).

References

1. Collister, Lauren B. and Timothy S. Deliyannides. "Altmetrics: Documenting the Story of Research." *Against the Grain*, February 2016, pp 16-18.
2. Costas, R., Zahedi, Z., & Wouters, P. (2014). Do altmetrics correlate with citations? Extensive comparison of altmetric indicators with citations from a multidisciplinary perspective. arXiv preprint arXiv:1401.4321.
3. "Altmetrics," *Online Searcher*. March-April 2015. Vol. 39(2):6.
4. Galloway, Linda M. "Introduction to Altmetrics for Medical and Special Librarians," National Network/Libraries of Medicine - Middle Atlantic Region (NN/LM MAR) Boost Box Series. March 2014.
5. Brigham, Tara J.(2014) An Introduction to Altmetrics, *Medical Reference Services Quarterly*, 33:4, 438-447, DOI: [10.1080/02763869.2014.957093](https://doi.org/10.1080/02763869.2014.957093)
6. Kwok, R. "Research impact: Altmetrics make their mark" *Nature*, 500, pp. 491–493 (22 August 2013) doi:10.1038/nj7463-491a Published online 21 August 2013.
7. "About the data." Impactstory <https://impactstory.org/about/data>
8. "Tracking and Collating Attention." Altmetric.com <https://www.altmetric.com/about-our-data/how-it-works>
9. "Usage Metrics." Plum Analytics. <http://plumanalytics.com/learn/about-metrics/usage-metrics>
10. Scheponik, Nick, Amirah Lawson, Tom Pacific. "Altmetrics: Becoming More Than Just a Buzz Word," [Unpublished]. Poster at the Lippincott Williams and Wilkins Symposium, 2014.
11. Van Bergen, Penny. "Why academics should use social media (Education)" 11:08 min. [Video]. August 20, 2015. YouTube <https://www.youtube.com/watch?v=-ViQlOuVn7Y&feature=youtu.be>
12. Holmes, K. "Librarians & altmetrics: Tools, Tips and Use cases" [webinar]. Feb 20, 2014 - 59 min. <http://libraryconnect.elsevier.com/library-connect-webinars?commid=96059>
13. "Terrie Moffit." Wikipedia. https://en.wikipedia.org/wiki/Terrie_Moffitt
14. The Evolution of Impact Indicators: From Bibliometrics to Altmetrics." Altmetric.com and Scholastica. [2015]. pp. 26. <http://scholasticahq.com/altmetrics-the-evolution-of-impact-indicators>

15. Rouhi, Sara. Emerging Discovery Tools. "Altmetrics: Unlocking Opportunities for Discovery." Paper presented to the NFAIS Hybrid Workshop: Discovery for Scholarly Research: Evolving Needs and Services, Alexandria VA., June 29, 2016. Annapolis, MD: National Federation of Advanced Information Services.
https://nfais.memberclicks.net/assets/docs/Discovery_Workshop/sara%20rouhi.pdf
16. Kaplan, Andreas M. and Michael Haenlein. "Users of the world, unite! The challenges and opportunities of Social Media," *Business Horizons* (2010) 53, 59—68. doi:10.1016/j.bushor.2009.09.00310.
17. Roemer, Robin Chin and Rachel Borchardt. "Keeping Up With... Altmetrics." Association of College and Research Libraries. January 2014. http://www.ala.org/acrl/publications/keeping_up_with/altmetrics