

What Lies Behind Altmetrics Scores? Guidelines on How to Use Qualitative Approaches in Altmetrics

Fraumann, Grischa

Veröffentlichungsversion / Published Version

Sonstiges / other

Empfohlene Zitierung / Suggested Citation:

Fraumann, G. (2020). *What Lies Behind Altmetrics Scores? Guidelines on How to Use Qualitative Approaches in Altmetrics*. The Hague: LIBER (Ligue des Bibliothèques Européennes de Recherche - Association of European Research Libraries). <https://doi.org/10.5281/zenodo.4475465>

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What Lies Behind Altmetrics Scores?

Guidelines on How to Use Qualitative Approaches in Altmetrics

LIBER Innovative Metrics Working Group



December 2020 | www.libereurope.eu





About this Report

This report has been authored by Grisca Fraumann, a Member of LIBER's Innovative Metrics Working Group. The author would like to acknowledge the support of Giannis Tsakonas, the Chair of LIBER's Innovative Scholarly Communication Steering Committee, Charlotte Wien, the Chair of LIBER's Innovative Metrics Working Group, and Xenia van Edig, the Manager of TIB – Leibniz Information Centre for Science and Technology's Open Access Publication Platform.

LIBER Innovative Metrics Working Group members who contributed to this report:

- Author: Grisca Fraumann (0000-0003-0099-6509)
- Editor: Giannis Tsakonas (0000-0002-8786-9440)
- Project member: Charlotte Wien (0000-0002-3257-2084)
- Project member: Sofia Fernandes (0000-0003-2038-5027)

Suggested citation:

Fraumann, Grisca (2020). What lies behind altmetrics scores? Guidelines on how to use qualitative approaches in altmetrics. A report from LIBER's Innovative Metrics Working Group. LIBER. [DOI].

About LIBER

LIBER (Ligue des Bibliothèques Européennes de Recherche – Association of European Research Libraries) is the main network for research libraries in Europe. Founded in 1971, LIBER has grown steadily to include more than 400 national, university and other libraries from over 40 countries.

Together we work to represent the interests of European research libraries, their universities and their researchers by advocating on issues such as Copyright and Open Access, by collaborating on European-funded projects, and by meeting and learning at events such as our Annual Conference.

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1. Who is this Report for?

This report¹ from LIBER's Innovative Metrics Working Group is for those based in libraries and information centres with an interest in altmetrics who would like to know how qualitative approaches could be used to study altmetrics sources. Qualitative measures could be of interest to scholars, librarians, information professionals, and providers of research metrics and altmetrics. The topic was a key theme informing the work of the LIBER Innovative Metrics Working Group. Other reports in this series include 'Why Do Measures Fluctuate? Metrics Report – Guidelines for Talking to Management'.

2. Qualitative Measures for Altmetrics

The Altmetrics Workshops are well-known venues for the international library and information science community to present and discuss current altmetrics research. It was during one of these workshops, in September 2018, that Barata (2018) suggested a discussion on qualitative measures for altmetrics. While such perspectives on research metrics, in general, had been proposed before, for example by the authors of the Leiden Manifesto for research metrics (Hicks et al., 2015), and members of the LIBER Innovative Metrics Working Group (Coombs et al., 2018), we consider such a discussion especially important for altmetrics. The Leiden Manifesto has also been contextualized for libraries and information centres by this LIBER Working Group (Coombs & Peters, 2017; Slowe & Schwamm, 2020). Since libraries and information centres are more and more active in the field of altmetrics, they might also benefit from a discussion on altmetrics. This report is intended to raise awareness and provide practical advice on this topic.

Research metrics are often displayed in aggregated scores; for users, it is sometimes unclear how these scores have been calculated because the underlying data sources are usually not transparent. Taking into account the rise of altmetrics in academia and the library and information sector, it is important for users to know what lies behind these aggregated scores, how they can be influenced (Dorch et al., 2020), and what the values and limits of altmetrics are (Fraumann, 2018). Thus, the use of qualitative measures has been proposed by several scholars (Holmberg, 2014).

The evaluation of altmetrics sources might benefit from a qualitative perspective. This perspective enables the validation of some findings from quantitative research metrics, such as the engagement of users through online platforms and online mentions of scholarly articles. We define qualitative measures in this context as peer review, but also as qualitative content analysis. Taking into account information theory, a qualitative approach aims to analyse the meaning of information (Cropley, 1998), in this case, altmetrics scores. Altmetrics scores as such have no meaning at all if they are not contextualized. For example, what does it mean if a paper has been retweeted one hundred times? This number only becomes meaningful if the reasons for the retweets become clear. Did the users look at the paper as an object of humour or were they interested in sharing research that is important to them? The answers might become clear, for example, if one looks at what Twitter users have written about the paper, and not just by counting the number of retweets. As Robinson-Garcia et al. (2017) put it: "A multi-year campaign has sought to convince us that counting the number of tweets about papers has value", while they found the opposite to be true after analysing tweets about publications in the research area of dentistry.

1. This document is based on the following conference presentation that was cancelled due to the COVID-19 pandemic: Fraumann, G. & Fernandes, S. (2020). Qualitative Measures for Alternative Metrics. ILIDE (Innovative Library in Digital Era) Conference 2020, Jasná, Slovakia.



Qualitative measures have been used to evaluate blogs and news sites as altmetrics sources (Barata, 2018; Fraumann et al., 2015). In particular, news stories that mention research publications are investigated based on qualitative perspectives (Matthias et al., 2020). For the sake of clarity, even before altmetrics data providers harvested data from blogs, the representation of research in blogs had been studied using a qualitative approach, for example by Bukvova et al. (2010).

More recently, the focus has shifted to 'community of attention networks' (CANs) of single publications on Twitter, as proposed by Araújo (2020). CANs are about analysing and visualising how users engage with scholarly outputs online and to what user groups they belong (Haustein et al., 2015). Another emerging source is Stack Exchange, a Q&A forum for several topics that are not limited to software development. Bowman (2020) considered briefly, how a closer look at public user profiles and Q&A pages provides a deeper perspective than purely quantitative analyses. This approach can also be combined with quantitative analyses, as has been suggested for studying other online communities (Bonenfant & Meurs, 2020).

3. Guidelines

We consider the following valuable when working with altmetrics, although please note that this list is only a selection of potential guidelines:

1. Consider qualitative measures instead of relying only on aggregated altmetrics scores. For example, have a look at what was reported in various altmetrics sources (e.g., blogs compared to news sites).
2. Consider combining a quantitative approach (e.g., counting the number of tweets) with qualitative analysis (e.g., qualitative content analysis of user profiles) when studying and interpreting altmetrics.
3. Advise researchers on the different meanings of altmetrics scores, for example, by providing information literacy resources.
4. If you report altmetrics scores in institutional reports, consider including a note on qualitative measures. For example, do not only report aggregated scores but also explain what these scores mean in a broader context.
5. Do not overstate the value of altmetrics as a librarian and information professional, as suggested by Barnes (2015). As often mentioned, altmetrics provide only an overview of how research has been mentioned on the Internet and should not be misinterpreted as some kind of quality indicator.

4. Outlook

As mentioned in the previous sections, altmetrics are gaining momentum in academia and the library and information sector, for example in institutional reports and might be even used to support the development of collections in libraries (Nariani, 2020; Sutton et al., 2017). Given the increasing importance of altmetrics, qualitative measures in addition, or in combination with quantitative measures should be considered more frequently.

The videos of the Altmetrics Conferences and Workshops are available through the TIB AV-Portal, a platform for scientific videos. The AV-Portal is hosted by the TIB Leibniz Information Centre for Science and Technology, which is a LIBER member institution. Making these videos available in a public archive has been another initiative of some members of the LIBER Innovative Metrics Working Group (Drees et al., 2020).



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