

Altmetrics Though not a bibliometric method, altmetrics have been used to perform similar analyses as have the bibliometric methods already discussed, so they should be included here.

Altmetrics use data available on the web such as “usage data analysis (download and view counts); web citation, and link analyses” (Zahedi *et al.* 2014) are used to supplement and improve upon citation-based metrics for measuring the impact of science and research. Using information made available via the web, altmetrics can go beyond the journal articles and books included in citation-based metrics and include “other outputs such as datasets, software, slides, blog posts, etc.” (Zahedi *et al.* 2014).

So, instead of compiling citations to research in journals, altmetrics involves compiling “mentions” of research in “main-stream media sources, and social media shares and discussions”, along with statistics on downloads, and reference manager counts (Adie and Roe 2013).

Altmetrics also typically retain the related meta-data of mentions and usage statistics, which allow for more complex analyses of the information. In other words, altmetrics not only track what research is being “mentioned”, but also where it is mentioned, and who is mentioning it, which can potentially provide a richer understanding of the citations.

Bibliometrics, scientometrics, and informetrics If altmetrics aren’t bibliometrics, what are they? They are “informetrics” which is a broader field than either bibliometrics, or “scientometrics”. Bibliometrics has been defined as “the quantitative study of physical published units, or of bibliographic units, or of surrogates of either” (Broadus 1987). Scientometrics has been defined as “the study of the quantitative aspects of science as a discipline or economic activity”, which includes the practice of publication and citation, so it “overlaps bibliometrics to some extent” (Tague-Sutcliffe 1992). Informetrics, in contrast, includes quantitative studies of not only quantitative methods applied to publications, but also documentation and information (Egghe and Rousseau 1990); it has also been described as a “recent extension of the traditional bibliometric analyses also to cover non-scholarly communities in which information is produced, communicated, and used” (Ingwersen and Christensen 1997).

For a more detailed discussion of the differences between the three areas, see “The Literature of Bibliometrics, Scientometrics, and Informetrics” by Hood and Wilson (2001).

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