



EBL 101

Research Methods: Bibliometrics

Virginia Wilson
Librarian, Murray Library
University of Saskatchewan
Saskatoon, Saskatchewan, Canada
Email: virginia.wilson@usask.ca

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Bibliometrics! Metrics about biblios: A set of measurements about a book, or books, or text. The *Oxford English Dictionary* defines bibliometrics as “The branch of library science concerned with the application of mathematical and statistical analysis to bibliography; the statistical analysis of books, articles, or other publications” (2012). As a research method, Beck and Manuel state that “essentially, if you can count something without too much debate over what it is—and it has something to do with any type of recorded information source—it could become the subject of a bibliometric study” (2008, p. 165). Bibliometrics can also be referred to as informetrics, webometrics, scientometrics, and cybermetrics. The different terms basically

reflect the types of information to which the analysis is applied.

Bibliometrics involves the measurement of data not intrinsic to the text, i.e., the text does not need to be read in order for analysis to be conducted. Instead, extrinsic measures such as affiliation of author, word frequency, usage statistics, and, most commonly citations are measured. There is a school of thought that combines bibliometrics with content analysis (extrinsic *and* intrinsic) but for the purposes of this column, I intend to focus on bibliometrics alone.

While bibliometrics has been around for decades, and “is one of the oldest research

methods in library and information science," it's only since the advent of high powered computer technology that bibliometrics has exploded (Beck & Manuel, 2008, p. 166). "Bibliographic databases, citation indexes, and statistical programs" have added ease, depth, and breadth to bibliometric analysis (Powell & Connaway, 2004, p. 63). Another major development for bibliometrics has been the internet and the publishing of "an increasingly broad range of research-related documents, from articles to email discussion lists, allowing the creation of a range of new metrics relating to their access and use" (Thelwell, 2008, p. 605).

A quick scan of the articles returned on a search for "bibliometrics" and "librarian research" in the Library and Information Science (LISA) database shows a variety of ways that this research method has been used:

Sengupta, I. N. (1990). Bibliometrics and the identification of core periodicals. *Herald of Library Science*, 29 (3-4), 226-245.

Mancall, J. C., & Drott, M. C. (1979). Materials used by high school students in preparing independent study projects: A bibliometrics approach. *Library Research*, 1(3), 223-236.

Houston, W. (1983). The application of bibliometrics to veterinary science primary literature. *Quarterly Bulletin of the International Association of Agricultural Librarians and Documentalists*, 28(1), 6-13.

Hersberger, J., & Demas, C. (2001). The current state of public library research in select peer reviewed journals: 1996-2000. *North Carolina Libraries*, 59(1), 10-14. Retrieved 20 Aug. 2012 from <http://www.ncl.ecu.edu/index.php/NCL/article/viewFile/288/306>

Powell and Connaway pulled together applications of bibliographic research outlined by a number of authors into the following list:

1. Improving the bibliographic control of a literature
2. Identifying a core literature, especially journals
3. Classifying a literature
4. Tracing the spread of ideas and growth of a literature
5. Designing more economic information systems and networks
6. Improving the efficiency of information handling services
7. Predicting publishing trends
8. Describing patterns of book use by patrons
9. Developing and evaluating library collections (2004, p. 63)

Bibliometrics can also be embraced by librarians as a core service relating to the scholarly communication process. By honing skills in bibliometric analysis, librarians can develop expertise which "can be used to help [their] faculty prove their scholarly contribution and achieve success in their tenure process" (Kear & Colbert-Lewis, 2011, p. 470).

As always, this column can only give a minimum overview of any research method, and immersion into the method is necessary when undertaking the research. Here are some resources that can get you started on your bibliometric journey:

Andrés, A. (2009). *Measuring academic research: How to undertake a bibliometric study*. Oxford: Chandos Publishing.

De Bellis, N. (2009). *Bibliometrics and citation analysis: From the Science Citation Index to cybermetrics*. Lanham, MD: Scarecrow Press.

Thelwall, M. A. (2009). *Introduction to webometrics: Quantitative web research for the social sciences*. San Rafael, CA: Morgan & Claypool Publishers.

Wolfram, D. (2003). *Applied informetrics for information retrieval research*. Westport, CT: Libraries Unlimited.

It seems like a logical progression to go from the tried and true method of bibliometrics to a newer and quicker type of analysis called altmetrics, so that's what I'll look at next time. And if you have any comments, questions, or suggestions for this column, please comment on this article by signing in to the Open Journal System as a reader and joining in the conversation.

References

Beck, S. E., & Manuel, K. (2008). *Practical research methods for librarians and information professionals*. New York, NY: Neal-Schuman.

Kear, R., & Colbert-Lewis, D. (2011) Citation searching and bibliometric measures: Resources for ranking and tracking. *College and Research Library News*, 72(8), 470-474. Retrieved 21 Aug. 2012 from <http://crln.acrl.org/content/72/8/470.full.pdf+html>

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