

Introduction: Metrics & ASIS&T

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Metrics & ASIS&T

EDITOR'S SUMMARY

Bibliometrics takes center stage for this *Bulletin*, with a review tracing its historical foundation in the mid-19th century through forecasts of its expanding uses in future research. The scope of bibliometrics has grown from generalized statistical bibliography, the quantitative study of patterns and references in written communication, to an increasing range of identified subfields. SIG/MET, the recently established ASIS&T special interest group (SIG), reflects the growing research focus on metrics in information science. This issue explores bibliometrics within and outside the information science field, the webometrics of the links to the ASIS&T website, an altmetric view of *JASIST* readership and metrics-based visualizations of co-authorship patterns in the field of bibliometrics itself. Interviews with four distinguished ASIS&T members active in bibliometrics consider where metrics research has come from and where it may be headed.

KEYWORDS

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This 75th anniversary of ASIS&T presents an opportunity to reflect on the field of information science (IS) and one of its main subfields, bibliometrics. Information science examines the processes, phenomena and institutions that bring people, technology and written records together. It is an adaptable and dynamic field, especially in response to technological innovation. Bibliometrics is one of the rare methods and metatheories used in IS that originated within the field. Joining the traditional methods of bibliometrics are *scientometrics*, *informetrics*, *webometrics* and most recently *altmetrics* to describe quantitative studies that use scientific information, information phenomena, online data and non-traditional scientific data, respectively, to observe the creation, diffusion and interaction of information.

The coining of the term *bibliometrics* is frequently credited to Pritchard [1], who proposed it in 1969 to replace the rarely used and somewhat ambiguous term *statistical bibliography*. Pritchard defined bibliometrics as “the application of mathematical and statistical methods to books and other media of communication” (p. 348). In the same year, Fairthorne [2] widened the scope of bibliometrics to include the “quantitative treatment of the properties of recorded discourse and behaviour appertaining to it” (p. 341). Other definitions include the following:

- In 1987 Broadus [3] defines bibliometrics as the measurement of patterns in written communication.
- White and McCain in 1989 [4] define it as “the quantitative study of literatures as they are reflected in bibliographies. Its task ... is to provide evolutionary models of science, technology, and scholarship” (p. 119).

- Tague-Sutcliffe defines it in 1992 as “the study of quantitative aspects of the production, dissemination and use of recorded information” (5, p. 1).
- In 2002 Borgman and Furner [6] state that “bibliometrics offers the powerful set of methods and measures for studying the structure and process of scholarly communication” (p.4).

Scientometrics, defined as the quantitative studies of science or, as Hess puts it, the “quantitative study of science, communication in science and science policy” [7, p.75] has its roots in the 1950s and 1960s and stems from the work of the historian of science Derek de Solla Price (for example [8, 9]) in parallel to the development of the citation indexes by Eugene Garfield [10, 11]. *Informetrics*, defined by Egghe [12, p. 1311] as a research area “comprising all-metrics studies related to information science,” came into use as a term in the late 1980s [13]. Almind and Ingwersen consider *webometrics* to be “the application of informetrics methods to the World Wide Web” [14, p. 404]. Finally, *altmetrics* “expand our view of what impact looks like, but also of what’s making the impact” [15] by extending our measurements from citations to information from social media such as storage, links, bookmarks and conversations.

Metrics research continues to be important to the ASIS&T community. In recent years, this role was demonstrated by the transformation of a virtual special interest group (SIG) to a recognized SIG. Within the first year, the newly established SIG/MET organized a highly successful workshop that attracted paper and poster presentations from eight countries and nearly 30 participants. SIG/MET also hosted a paper contribution attracting submissions from an international and talented group of metric neophytes demonstrating the continued growth and interest in metric-related research.

This special issue of the *Bulletin* is a continuation of the activities of SIG/MET. The goals of this special issue are two-fold. First, we want to

provide a history of some aspects of IS and ASIS&T using metric approaches. Second, we want to describe the past, present and future of metrics-related research. As will be shown, these goals overlap in many ways.

The issue begins with a bibliometric article by **Vincent Larivière**, who provides a brief introduction to bibliometrics and demonstrates the method by examining the place of metric-related research within library and information science (LIS) broadly and the ways in which metrics-related research has been received outside of the field.

Mike Thelwall provides an overview of the history, theory and application of webometrics and demonstrates the use of the tools on the ASIS&T website. This overview provides an introduction to a vibrant and emerging area of IS research.

As mentioned, there is a growing interest in examining scholarly metrics that are not commonly associated with publishing and citing. **Judit Bar-Ilan** demonstrates how altmetrics can be empirically applied by combining bibliometrics (citation analysis) and altmetric (readership counts) metrics to 10 volumes of the *Journal of the American Society for Information Science and Technology (JASIST)* (2001-2010).

Angela Zoss applies the latest visualization techniques to the co-authorship patterns of a handful of ASIS&T award winners who have shaped the field of bibliometrics and scholarly communication. This provides not only a historical overview for the perspective of these canonical authors, but also serves to highlight the importance of visualization in metric-related research.

In the final article of the special issue, we give voice to the luminary figures visualized by Zoss. **Cassidy Sugimoto** interviews Christine Borgman, Blaise Cronin, Katherine McCain and Howard White. Their responses provide a rich encapsulation of the past, present and future of metrics-related research. ■

Resources on next page

Resources Mentioned in the Article

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