

Book Review

**Informetric Studies on Physics Theses of Indian Institute of Science. By K.G. Sudhier
Delhi: B.R. Publishing Corporation, 2017. 240 p. Rs. 1250 (hardcover).
(ISBN: 9789386223548)**

The abundance of information poses a problem of a different kind just as lack of information does. Comprehending information and filtering it for consumption and decision-making are the major challenges faced by the modern society. Quantitative measurement techniques have been developed and used for the analysis of production and use of information. These techniques are in vogue for a few decades now, and these techniques form the basis for 'bibliometrics', 'informetrics', 'scientometrics', 'webometrics' etc. Altmetrics is the new research area added to this group. Purists do make a distinction in the scope and application of these fields of study, although from a student perspective they are overlapping disciplines. It may be mentioned that Indian literature on the subject refers to S.R. Ranganathan who introduced the term 'librametry' even before terms such as bibliometrics, informetrics, etc. came into vogue (Sen, 2015)¹⁰.

The book, which is under review in this article, is on 'informetrics' which is canonically a part of library and information science domain. In 1979 the term was first introduced by L. Blackert and S. Siegel, and also by O. Nacke. But, it is B.C. Brookes who popularised the term in 1987 by including the term for an international conference.

An early definition is: "Informetrics is the study of the quantitative aspects of information in any form, not just records or bibliographies, and in any social group, not just scientists" (Tague-Sutcliffe, 1992)¹¹. Egghe (2005)³ includes all other related fields under the umbrella term 'informetrics'. According to him informetrics is used "as the broad term comprising all the *metrics* studies related to information science including bibliometrics (bibliographies, libraries, . . .), scientometrics (science policy, citation analysis, research evaluation, . . .), webometrics (metrics of the web, the Internet or other social networks such as citation or collaboration networks), . . .". Informetrics involves both theoretical and practical aspects.

The book '*Informetric studies*' by K.G. Sudhier provides an overview on various aspects of the application of informetrics in measuring the impact of research publications of individuals, universities, and scientific institutions through citation analysis, authorship studies, aging and obsolescence studies, ranking of journals, core book study and application of bibliometric laws. The book serves as a start-up source for students and novice researchers. The bibliography included in the book also serves as a significant reference source for those interested in having a basic understanding of what informetrics is all about.

Chapter 1 of the book is "Evolution of Metric Studies". In this chapter, the author tries to delineate the historical underpinnings of informetrics. Normally the historical instances in the evolution of the field of informetrics are traced from 1969 when the term 'statistical bibliography' was replaced with the term 'bibliometrics' by Alan Pritchard. However, this book considers the growth of the field from the late 1910s when the statistical analysis of published literature on anatomy was made by Cole and Eales. The chapter succinctly introduces the concepts such as bibliometrics, scientometrics and informetrics, webometrics and the new field of metric study altmetrics and their interrelationships. The author cites various definitions to provide initial background to understand various terms associated with informetrics and how informetrics ambit is wider compared to bibliometrics and scientometrics. In a nutshell, this chapter justifies what Hood & Wilson (2001)⁶ have said about bibliometrics, scientometrics and informetrics that "Each of these terms has a particular historical origin which is generally well documented. In addition, each of these terms has a range of definitions that have been applied to them by the authors who are working in this field. These definitions indicate considerable overlap in the meaning of the terms, but they are not necessarily synonymous. Over time, the popularity (or usage) of the terms has changed, with the older term 'bibliometrics' fairly stable and the newer terms, 'informetrics' and 'scientometrics' gaining in usage" (p. 309).

Chapter 2 is devoted exclusively to discuss the theoretical and practical applications in the field of "Informetrics". The author details the early developments in the field. The role played by Fédération Internationale de la Documentation (FID) committee under Nacke's chairmanship for using informetric as generic term for bibliometrics and scientometrics (p.25), Wilson's (1999)¹³ insightful article on Informetrics in ARIST Review, significant books on informetrics and journals carried publications of informetric research have been discussed in this chapter. Although there is a slight overlapping of certain concepts found in chapter one, this chapter provides additional information and discusses the use of informetrics in measuring information. The concise details on the classical laws of bibliometrics – Lotka's, Bradford's and Zipf's – will

be of definite help to the readers in understanding the basics. The list of software/web tools available for carrying out informetric studies given in Chapter 2 may be of help to students/researchers in informetrics.

Citations are the backbone of informetric studies. Chapter 3 of the book is on "Citation Analysis". The book rightly recognises the contributions of Eugene Garfield – the father of citation indexing. The discussion on citations, references, citer motivation, and criticism of citation-based studies found to be useful for the students. This chapter serves as a mini-handbook for those who are interested in concise information on various citation-based indices (impact factor, immediacy index, h-index, bibliography coupling, and so on) and citation databases (Web of Science, Scopus, Indian Citation Index, CitSeerX, and Google Scholar). Readers of the book would have appreciated it if a comparative analysis of the databases had been given.

Chapter 4 is on 'Authorship Studies'. It is not rare to find informetric studies falling under this category as can be seen from the review given by the author of the book. Researchers in the field who are interested in analysing authorship patterns, the degree of collaboration, publication output, scientometric portrait, research mapping and other related studies (Garg & Tripathi, 2017)⁵ may find this chapter useful. In this chapter, the author introduces the basic concepts and gives his study as an illustrative example of the collaborative research trends in the physics literature. The author uses physics literature cited by the physicists of IISc, Bangalore in their doctoral theses to illustrate the authorship pattern, degree of authorship collaboration in physics journals and books.

'Aging & Obsolescence Studies' are the core concepts discussed in Chapter 5. The chapter gives a brief review of selected literature on obsolescence and aging, particularly concentrating on Indian contributions. Reading the text gives one the feeling that the core terms 'obsolescence', 'aging', 'half-life', 'Price index', could have been briefly explained in greater detail to make the chapter more useful. This chapter also includes some illustrative examples to show the decreasing use of scientific literature and books over a period of time.

Chapter 6 on 'Ranking of Journals' explains the concept of identifying the core journals and ranking of journals based on their use, citation pattern or impact factor. It is needless to emphasise that this chapter will be of interest to practising librarians. The citation databases have now virtually replaced the manual identification of core journals and ranking of journals. However, it is still useful to understand and learn the techniques. From this perspective, the author provides a detailed overview of how the ranking of journals could be done through citation data and illustrates them through the data that he gathered for his doctoral research.

Chapter 7 is on 'Core Book Study'. This chapter is similar to the previous chapter 'Ranking of Journals'. Lack of comprehensive citation databases on books (more so for Indian books) makes this chapter useful. The chapter concentrates on applying the citation techniques for ranking of books. As cited in the book, in 2011 Thomson Reuters (now taken over by Clarivate Analytics) launched Book Citation Index (BKCI) - first of its kind - to provide comprehensive citation data for books. This index is slow in its evolution and expansion of coverage. The author provides some examples of book ranking studies and gives his own study as an illustrative example.

Chapter 8 and 9 are on 'Application of Bradford's Law of Scattering' and 'Applications of Lotka's Law of Scientific Productivity' respectively. These two chapters serve as a how-to-do manual. The reviews of previous studies – found in all other chapters as well – provide an excellent literature source for those who are engaged in these kinds of studies.

Chapter 10 is on 'New Trends in Informetrics and Altmetrics'. Altmetrics is the buzz word in the field of informetrics today. The discussion on h-index, g-index, i10-index and other metrics though given as supportive information to the core content of the chapter, the reader may find the discussion redundant as these have been discussed elsewhere in the book. However, the brief description about the difference between conventional metrics and altmetrics and new platforms for evaluating scholarly communications (p. 196-200) is quite useful. In the early 21st century webometrics was identified as one of the emerging subfields of informetrics (Bar-Ilan, 2008)². Today Webometrics has grown itself as a major field of study of web phenomenon (Thelwall, 2009)¹². Altmetrics is an offshoot of webometrics. It would have been better if the author had discussed webometrics before introducing 'Altmetrics', which would have helped the readers to have a glimpse of kind of research that has been done in Webometrics (Bar-Ilan, 2008)².

Indian LIS literature is dominated by studies in the areas of bibliometrics, scientometrics and informetrics. In a study on bibliometrics of library and information science research in India, it was found that 35% of library and information science (LIS) research is done in the field of quantitative analysis of research literature (Garg and Sharma, 2017)⁴. However, there are hardly any Indian textbooks which provide a detailed overview of bibliometrics, scientometrics, informetrics and other metric based studies in India except those from Ravichandra Rao (1983, 2010)^{7,8} and Ravichandra Rao and Neelameghan (2014)⁹. In this context, this book is a useful addition to Indian LIS literature.

As pointed in the foreward (p. viii) by Gangan Pratap, this book contains comprehensive bibliography which portrays

the corpus of work on informetric studies in India. By and large the book serves as a useful compendium on informetrics. A meticulous reader may feel that the book is not free from typos and language errors. The reviewer has no hesitation in recommending this book as a textbook to informetrics. The author deserves all appreciation from the LIS community for his efforts.

1. References

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