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Abstract

This textbook aims to present in a simple way the basic concepts, techniques, theoretical foundations and historical developments of the subfield of information science, which deals with quantitative methods and the analysis of scientific literature. The term "Bibliometrics" or "Bibliometrics" (from the words " biblos" and "metron") is proposed for this area, and the term-reference is a choice dictated by defined terms for the type of information to be measured. Reports are a channel that connects evidence and are tasked, through analytical tools, to provide answers about how they are connected and about the knowledge produced, with the aim of understanding what reports measure and what the distinction between the quality and impact of a publication is. Quantitative methods techniques are then used to evaluate the research performance of the evidence. It is shown how research impact tools are created using citations and documents, and how bibliometric indicators investigate areas such as author production and collaboration, the scholarly activity of research teams, country researchinstitutions of interest, and research orientation. The problems of the nature and functions of references are analyzed. The sources used in research are studied through the indexes produced by the Institute for Scientific Information, through its three indexes and all subsequent indexes. It is shown that bibliometrics is an interdisciplinary field of research that can be extended to many disciplines, with its methodology including components from mathematics, the social sciences, and beyond. The research structure of the field is described and an overview of its methodology is given.



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