



Evaluation of the quality of published research papers and reports: a review

By: Zohreh Abbasi

Abstract: Different methods of evaluation of research reports and articles in different countries are studied and analyzed in this article. This article is emphasizing quality and factors affecting the quality of research reports. It is also considering criteria for acceptance of articles by journals' editors.

Keywords: research, research reports, articles, library and information science, evaluation, quality

Informetrics: from emergence to date

By: Amir Rismanbaf

Dr. Farideh Osareh

Abstract: Informetric studies was common in the academic associations of the western world, following increase in the volume of information in post-war years, emergence of information science in those years, and most important, expansion of the positivist theory. However, theoretical emergence of

“informetrics” in the last three decades lagged behind its practical emergence for several decades. Informetrics is known as an interdisciplinary area, since it is used by researchers from different areas. The present paper includes historical and conceptual reviews of such research, while in the end, the most important critical views current in informetric studies will be discussed from two aspects: epistemological and methodological.

Keywords: informetrics, quantitative methods, information science, positivism, library and information science

An analysis of the data in master’s theses and doctoral dissertations

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Abstract: Masters’ theses and doctoral dissertations are documents created in the course of a higher degree program as a result of collaboration among students and their supervisors, supported by their higher education institution. The data accumulated in these documents by themselves, as well as together with other data sources, can create new kinds of information. Different studies have analysed such data for different purposes, however, there is not a comprehensive model that covers all aspects of these documents. Therefore, in this paper different analytical aspects of these documents are identified in a literature review, and are presented in a specific comprehensive classification scheme. For this purpose, data analysis and its techniques are reviewed first, and application of these techniques in the analysis of theses and dissertations data are presented, next. Furthermore, items considered in these studies are then indicated, and a classification scheme of these items is presented in the end.

Keywords: theses, dissertations, higher education, graduate studies, data analysis, meta-analysis

Science Production in Iran in 2005 and 2006 according to ISI statistics

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Abstract: The present paper studies the status of Iranian indexed publication in the Web of Science in the years 2005 and 2006. From 6748 scientific production in 2006, 6682 titles appeared in Science Citation Index, 193 in Social Science Citation Index, and 16 in the Arts and Humanities Index. These figures show 21% growth compared with 2005 figures. In both years, most of the Iranian scientific products were English articles. However, there is a decline in language variation in 2006 as compared with 2005. According to *Web of Science*, in 2006, the most productive Iranian authors were M. Heravi and M. Dehghan who published 57 and 47 articles, respectively. These authors published around 1.55% of the total Iranian published articles. Up to Esfand 1385 (March 2006), the article “Absorption of water vapor on activated carbon: a brief overview”, cited by 16, ranked first as a cited article. Also, most of the Iranian scientific products were indexed either under Chemistry, or, under Multidisciplinary subjects. The journal *Applied Mathematics and Computation* with 161 cited articles had the highest share in scientific production in Iran in 2006. From the 19 Iranian journals indexed in ISI, only 6 appeared in the *Web of Science*. These 6 journals published about 4.18% of all the Iranian scientific products.

Keywords: production of science, ISI, science citation index, social science citation index, arts and humanities index, web of science

A Glance at Evaluative Indexes in Science and Technology

By: Narges Khaleghi

Abstract: Nowadays, science and technology are considered as among main factors in development and sustainable development in the world. Therefore, to exercise change and improvement in any country, it is necessary to understand and evaluate the present state of science and technology in that country. In the past fifty years, some indexes have been developed for evaluation of science and technology, of which *scientometrics*, *IECD* indexes, *Unesco* indexes, *ASEAN* Indexes will be discussed in this article.

Keywords: evaluative indexes in science and Technology, scientometrics, Organisation for Economic Co-operation and Development (OECD), Unesco, ASEAN.

H index: a new approach in evaluation of scientific output of researchers

By: Abbas Mirzaie

Heidar Mokhtari

Abstract: G. E. Hearsch proposed an index for evaluation of scientific output of researchers which has attracted scientists for its ease of use and its seeming advantages over other current methods. The h index indicates h number of an author's articles each of which has been cited at least h times. There are, also, other indexes such as $h-b$, g , and h_1 , that have been suggested to complement h index. In this article, h index will be introduced and its advantages and disadvantages will be discussed.

Keywords: h index, scientometrics, scientific output

Impact Factor: shortcomings in application, and complement suggestions

By: Farhad Shokraneh Nanekaran

Abstract: In the conditions of information explosion which inhibits access to all available publications by individuals and libraries, librarians and researchers need a reliable scientometric tools in selection of quality information. Journals provide the latest information and *Impact Factor* has been accepted as an index to quality of journals. There are some shortages in application of IF. This article presents some known shortcomings of IF, while suggesting some complement methods and discussing its efficiencies and inefficiencies.

Keywords: citation, scientometrics, Impact Factor, journals' quality

Scientific powers in the Islamic world

By:Dr. Ja'far Mehrad

Ali Gazni

Abstract: This article is aimed at finding about superior countries in the Islamic world. The study focusses on Iran, Turkey and Egypt as the scientific powers in the Islamic world and is based on the pioneers in science as identified by ISI in a 5-year period from 2003 to June 2007 in 22 subject areas. For this purpose, all 3248 institutions in the Islamic countries that are indexed in ISI and have appeared among the top 1% of the world countries were studied. Also, journals of the Islamic countries in Science Journals Citation Report containing 6088 titles, and the main part which included 14078 ISI journals were analyzed. Among other aspects considered are: R & D budget, status of science, volume of publications, and citations in 22 subject areas.

Keywords: Islamic world, production of science, citation, pioneers in science, Journals Citation Report, Islamic countries, ISI

Limitations and considerations in using Impact Factor

By: Sa'eedeh Ebrahimi

Abstract: Presently, Impact Factor is accepted as one of the most important tools for evaluation of scientific journals. Its vast application in different areas, has made the critics and bibliometric experts to review this tool to identify its limitations, as well as its impacting factors, and, possibly, to introduce alternative tools. This article is going to introduce Impact Factor and its limitations, and will describe its effective factors. It will then continue to look into wrong, but current, applications of Impact Factor, and will discuss some criticisms to it. This article will end up with introducing some supplement and alternative tools.

Keywords: Impact Factor, bibliometric data, citation, journals evaluation, alternative tools, supplement tools

A review of evaluation indexes of research outputs

By: Ebrahim Emrani

Abstract: There are some criteria for promotion of academics and researchers that are based on their scientific and educational activities, among which published works are the most important. The rules that apply to calculation of points required for promotion could be divided into two historic periods: pre-1375 (1996a.d.) and post-1375. The second period is marked by application of journals' "impact factor" that is introduced by Thompson's citation index. This caused some enthusiasm and motivation in some academics, though created some criticism later that led to hot debates and arguments in the public press and media. This article is looking into the experiences of other countries, especially the experiences of American and Western European scientists, with an eye to the criticisms raised in Iran, to suggest some modifications in the usage of IF. For this purpose, indexes such as Matthew index, h-index and g-index, are introduced as well as other indexes that are based on journals use such as y-

index, and, indexes that are based on normalization, such as Crown index.

Keywords: scientometric indexes, bibliometric indexes, citation

Criteria for submission of hypotheses in library research

By:Dr. Mortaza Kokabi

Abstract: Hypotheses or Questions are of fundamental bases in any research. Despite the importance of hypothesis, some believe that hypotheses are not always necessary. Evaluation of hypotheses used in some librarianship dissertations at graduate level reveals that these hypotheses are correct, according to the current criteria; however, two questions rise considering criteria developed in this article: 1) are these hypotheses necessary at all? In other words, is it necessary to develop hypotheses in the presence of research questions? and, 2) if necessary, are they correct and logical? Therefore, what will follow, firstly, investigates if it is necessary to suggest hypotheses, and secondly, presents criteria for evaluation of hypotheses, in addition to what is currently available in the research literature. Also, from evaluation of some hypotheses presented in Masters dissertations in librarianship, this article will make clear the extent to which these hypotheses are valuable.

Keywords: hypothesis, theory, hypothesis test, hypothesis in librarianship, criteria for evaluation of hypotheses

Webometrics: Foundations and Principles

By: Mohsen Haji Zeinolabedini

Dr. Farideh Osareh

Abstract: Webometrics is known as one of the highly used areas in today's library and information science which tries to quantify and measure different activities on the Web, to enable making decisions about behavior, future, improvements in methods, web designing, improving search engines, and

other activities on the Web. Having emerged in second half of the 1990s, Webometrics is rooted in bibliometrics, informetrics and scientometrics. This article, while introducing Webometrics and its history, is trying to present a general picture of Webometrics and related activities, and to address issues such as domain, usage, methods, link analysis, link motives, clustering, web impact factor, and core websites.

Keywords: webometrics, web impact factor, links, search engines, core websites, clustering, link motives

Intercitation overlap in ISI and Google Scholar: a comparative study in four disciplines

By:Dr. Keyvan Koosha

Abstract: In recent years, *Google Scholar* has been considered as a multi-discipline source of citation that covers a wide range of different periodical and non-periodical information sources. The present study aimed at identification of the amount of overlap between Google Scholar and the ISI Web of Science in four disciplines of chemistry, physics, biology and computer science, to investigate the application of this new source as a complement tool for the traditional citation sources. Type of publication and level of access for cited sources was analysed in Google Scholar, and the relative increase in both sources was also identified as for a 4 months period. For this purpose, 4184 citations in the Web of Science were compared with 5589 citations to 882 articles in 39 indexed journals, retrieved by Google Scholar. The results of the study revealed that the relative overlap percentage for ISI in four disciplines equals to 57% (2378 common citations). It was also revealed that differences between the four disciplines are important factors in both sources. The relative overlap in biology (66%), physics (62%), computer science (57%) was remarkably more than chemistry (33%). Also, in chemistry and biology, journal articles, in physics E-print articles, and in computer science, conference articles were the most citation sources that were unique to Google

Scholar, and could not be traced in Web of Science. Results of the study also revealed that 70% of the citation sources that were unique to Google Scholar, were accessible as fulltext. The increase rate for citations in four disciplines in 4 months was 12% for ISI Web of Science, and 22% for Google Scholar. According to the results, it can be concluded that the citations in Google Scholar could be considered as supplementary to ISI Web of Science. However, in measuring the impact of researches cited in this source, one should consider the difference that exists between the disciplines in regard with the number and the type of Web citations.

Keywords: overlap, ISI citations, ISI citations, google scholar citations, web citations, science

Scientific collaboration and information production: a glance at concepts and current models of co-authorship

By: Maryeh Rahimi

Dr. Rahmatollah Fattahi

Abstract: Scientific collaboration and co-authorship, as one concept, is a normal approach in the academic society which its importance, domain and methods has been increased in the past few decades. Collaboration could be considered as a reflection of the activities and approaches in the academic society. The study of collaboration can contribute to the progress of the sociology of science. While reviewing the history and different definitions of this concept, this article is trying to study different aspects of “scientific collaboration” and its relevant issues. Also, this article has carefully considered and discussed different paradigms in scientific collaboration, co-authorship networks, and methods and advantages of scientific collaboration.

Keywords: scientific collaboration, co-authorship, paradigms, production of science

Statistical relationship of some basic bibliometric indicators in scientometrics research

By:Ali Uzun

Translated by: Farshid Danesh, Maryam Ryazi pour

Abstract: This paper presents the results of a search for statistical relationships between authorship in terms of the number of authors, number of significant terms/words in article titles, number of references cited, and citation impact of a set of 467 articles published in the *International Journal of Scientometrics* from 1999 to 2003. Our analysis shows that, controlling for the growth dynamics of citations, the mean citation impact of articles depends strongly on the authorship as measured by the number of authors per article. A chi-square test indicated that the number of references cited in articles and their citation impact are not independent. There is a fairly high degree of linear association between the number of times an article is cited and the number of references it contains. Our analysis also shows that at any level of aggregation there is no statistically significant association between citation impact and the number of significant words in the titles of articles.

Key words: webometrics, scientometric, citation impact, titel words, authorship

The "impact factor" revisited

By:Peng Dong, Marie Loh and Adrian Mondry

Translated by: Rasoul Nouri, Azadeh Nouri

Abstract: The number of scientific journals has become so large that individuals, institutions and institutional libraries cannot completely store their physical content. In order to prioritize the choice of quality information sources, librarians and scientists are in need of reliable decision aids. The "impact factor" (IF) is the most commonly used assessment aid for deciding which journals should receive

a scholarly submission or attention from research readership. It is also an often misunderstood tool. This narrative review explains how the IF is calculated, how bias is introduced into the calculation, which questions the IF can or cannot answer, and how different professional groups can benefit from IF use.

Key words: impact factor, citation, bias

Webliometrics: a new horizon in information research

By: Dariush Alimohammadi

Translated by: Mahshid Sajadi

Abstract: During the second half of the past century, the field of library and information science (LIS) has frequently used the research methods of the social sciences. In particular, quantitative assessment research methodologies, together with one of its associated concepts, quantitative assessment metrics, have also been used in the information field, out of which more specific bibliometric, scientometric, informetric and webometric research instruments have been developed. This brief communication tries to use the metrics system to coin a new concept in information science metrical studies, namely, webliometrics. An overview of the webliography is presented, while webliometrics as a type of research method in LIS is defined. Webliometrics' functions are enumerated and webliometric research methods are sketched out.

Keywords: worldwide web, information science, research