

A survey on amount of scientific publications of Iranian scientists and their collaboration in E-Print database

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Abstract

Information like blood flows in the vessel of society, so its production is a major indicator for development in countries. It can be utilized in various fields and domains. In current era, scientific and research indicators determine status and rank of countries around the world. Countries that increase their researches and scientific productions will have high scientific rank. This will lead to growth and development in each country. E-LIS[§] is an open access database of published and in-press technical and scientific documents in Library and Information Science field that authors can submit their articles to this database voluntary. Current research will study the amount of scientific publications of Iranian scientists and their collaboration in E-LIS (Electronic library and Information Science) database in comparison with other Asian countries and will determine rank of Iran in scientific collaboration among these countries in this database. Also, current research will study web transaction logs of produced papers by Iranian scientists that is presented in this database, in order to determine Amount of usability of these papers by various users. Also this research will study significant relationship among Iranian scientists' collaboration in scientific publications and amount of downloads of their articles by users.

Keywords: scientific collaboration, Iranian researchers, E-Print database, web transaction logs.

1 Introduction

Information like blood flows in the vessel of society, so its production is a major indicator for development in countries. It can be utilized in various fields and domains. In current era, scientific and research indicators determine status and rank of countries around the world. Countries that increase their researches and scientific productions will have high scientific rank. This will lead to growth and development in each country. In information area, scientists must use indexes and databases to review and access to articles that they need, because volume of information is increasing and scientists can not access to their special information easily. So, using these indexes and databases is a fast way for access to needed information. E-LIS or E-Print is an open access archive for scientific or technical documents, published or unpublished, on Librarianship, Information Science and Technology, and related areas. Main purpose of current research is to discover domain of collaboration among Iranian librarians for presented

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articles in E-Print database and survey on use amount of these articles by researchers from other countries by analyzing data that are extracted from articles log files of this database.

2 Problem statement

Log files analysis, studies transaction among users and information systems. Today, this method has gained a special situation in researches that are done using webometric methods especially in information retrieval systems field. Current research studied log files of produced articles by Iranian librarians that are accessible via E-print database and analyzed use amount of these articles by other researchers. Through this study feedback of use amount of Iranian librarians' articles during a special period will be gained.

3 Importance of research

In current era, researchers do not trend to individual action, they are eager to produce research publication by collaboration together. In recent years the establishment of E-mail networks and the advance of information and communication technology have resulted in the increase of communication and collaboration of researchers. Although collaboration in scientific areas has existed for a very long time, but this collaboration has in recent year's experienced significant increase in social science especially in LIS. Evidence in the Library and Information sciences articles is suggestive of the existence of a relationship between the rate of collaboration and the better quality of articles, i.e. the greater collaboration the better the quality of the articles (Hart 2000).

Web log analysis of articles in different database is one of methods to evaluate scientific development of various countries. Survey on these web log analysis reveals that other researchers how much use of produced articles and so, it can be mapped process of scientific growth in a special field. This way, studies interaction among users and information system.

4 Aims of the research

The primary aim of the present research is to discover the domain of the authors collective collaboration in the LIS articles submitted to the E-Print and the rate of usage of these articles by other countries researchers through survey of log files up to March 2008. Its secondary aims are:

1. The identification of the rank of Iran among Asian countries in LIS articles, published in E-Print.
2. The identification of the rate of individual and collaboration Iranian LIS articles in E-Print.
3. The determination of the usage of abstracts and full texts of Iranian LIS articles in E-Print.

5 Research questions

1. What is the rank of Iranian articles among Asian countries in E-Print?

2. What is the process of Iranian articles, published in E-Print during 2000-2008?
3. How many articles of Iranian librarian in E-Print are in the form of collaboration and/or individual articles?
4. Which types of documents (conference articles/articles published in magazines) of Iranian articles were published in E-Print?
5. What is the rate of collaboration among Iranian LIS authors in E-Print?
6. What is the percentage of the acceptability of the collaborative and individual articles of Iranian LIS in E-Print?
7. Is there any meaningful (logical) relationship between collaborative and individual articles and rate of their usage or not?
8. Which countries have the greatest usage of Iranian articles published in E-Print?

6 Method

This survey is a descriptive one with a statistical procedure. The required information was obtained from bibliographic data and log files of Iranian librarian articles published in E-Print database, during March 2008. Research-community includes articles produced by the Iranian librarians, which are available at the E-Print database till 3 March 2008, free of charge.

In this research, first all articles published by the Iranian librarians at this data base were reviewed, then reviewing the log files of the articles which were available at the E-Print database, the degree of usage of other researcher were identified. Also, number of individual and/or collaboration articles published by the Iranian librarians were reviewed and analyzed.

7 Literature review

Studies that have been carried out on the collaboration and especially scientific collaboration of Iranian researchers in the production of scientific material in some database are as follows:

Jowkar & Ebrahimi (2008) surveyed the rate of nationalities' trends in citing Iranian scientific productions. Findings indicated that from total citations to Iranian scientific productions 49.2 percent was allocated to citations used by other nationalities and 50.8 percent to citations by Iranian authors. Among countries that have cited to Iranians, USA, China and India and among continents, Europe and Asia are respectively the regions that have cited Iranian scholars from 63 countries.

Jamali (2006) introduced CIBER's Virtual Scholar research program. The main aims of the program are to investigate the traits and characteristics to the virtual scholar, who has become a major efficient evidence- based study of the digital scholars' information-seeking behavior. To achieve these aims, CIBER has developed a methodology, which is termed Deep Long Analysis (DLA). DLA is more sophisticated form of transaction log analysis. He stated that researches like analysis of log files lead to develop scientific communication.

Noruzi and Alimohammadi (2006) measured the number of contributions by Iranian librarians and information professionals published in international journals indexed by the ISI citation indexes. It is concluded that the number of papers published by Iranian librarians and

information professionals is low, although there is an increase since 1992. The study also shows that the scientific collaboration between Iranian information professionals and between them and their international peers is weak. Writing articles in English is recommended to increase the rate of contribution of Iranian LIS professionals in the international level.

Osareh and Wilson (2002) in a research undertaken to survey the rate of international collaboration in the scientific works of the Iranians in the area of science citation index during the years 1995-1999 and in comparison with their previous study on the same theme found that the scientific works of the Iranians in science and technology in three five year periods in this area has increased. Iran has increased its publications by two fold in the first two periods and by 2.8 times in the third period. The greater part of the Iranian's international collaboration in these three periods has been with American and British coauthors and collaboration with the authors of other nations has also had a significant increase.

Osareh and Marefat (2005) in a research surveyed the growth and development of the articles submitted by Iranian researchers in foundation sciences and inter- medicinal areas to the medical science information network Medline in the years 1976 to 2003 and identified the Iranian universities, journals and researchers who had produced the most scientific articles and indicated those subject areas which these researchers were more interested in. The results of this study indicated that articles and materials submitted to Medline by Iranian researchers had increased significantly so that during the period under research 2695 articles from 9373 coauthors has been published where the average number of authors collaborating on an article was 3.4 authors. In the international scale there have been many researches on collaboration in the production of scientific material.

Sarrafzadeh(2000) in her masters thesis studied the state of the Iranian articles indexed on the CAB and Agris databases since the beginning till 1997 with the aim of the determination of the share of the Iranian articles from the total number of the articles that had appeared on these databases and the clarification of the extent of the collaboration of each of the nations educational and research centers in the production of the articles present in these databases. The results indicate a reduction in the number of Iranian articles submitted after the Islamic revolution in Iran (1979) which he attributes to the occurrence of events such as the Iranian Revolution, The closure of the universities and the Iran-Iraq war. However, from the nineties onward there has again been an increase in the appearance of Iranian articles on these databases. Other data indicated that from the 47 centers which had contributed more than 5 articles to these databases, The University of Tehran had the biggest share and The Semnan Agricultural Research Centre the least.

Gupta & Dhawan (2007) reviewed the present status of Indian physics, particularly with regard to the nature of research system, nature of institutions involved, type of education available and outturn at postgraduate and Ph.D level, the extent of extra-mural funding support available from various agencies, and the nature of professional organizations involved. Analyses the growth of Indian physics output, as reflected in mainstream international journals covered in Expanded Science Citation Index (Web of Science) during 1993-01. Discusses the various

features of Indian physics research output, such as growth, institutional publication productivity, nature of collaboration, and the quality and impact of its research output.

Kumar & Kalyane (2004) analyzed 983 documents in EPrints database. Findings revealed that 34% of these documents were conference papers. 52% were not refereed and 28 % were published in journals.

De Robbio & Subirat Coll (2005) had a research on E-LIS. They described the main characteristics (technical and organizational) of the archive and its configuration and customization, and discussed its policies, aims and mission. Its main focus, however, is on the E-LIS organizational model and on the strategic issues correlated with Open Access (OA). They also delineated some of the challenges and opportunities consequent on a global vision for the Library and Information Science (LIS) field which envisages papers coming from all over the world and which gives E-LIS the impetus and motivation to stimulate participation in the venture and to further develop international research activities. Their paper also emphasized that the promotion of E-LIS further enhances the OA movement in general, so E-LIS can be regarded as a tool for the dissemination of the OA philosophy.

8 Research findings

E-Print database have had 71 scientific articles of Iranian librarians continuously since 2000. So every year some collaborative and individual Iranian ILS articles have been published in this database. In 2000, Dr. Ali Reza Nouruzi was the first Iranian librarians who published his articles in E-Print. From then on, there has been a severe increase in this process.

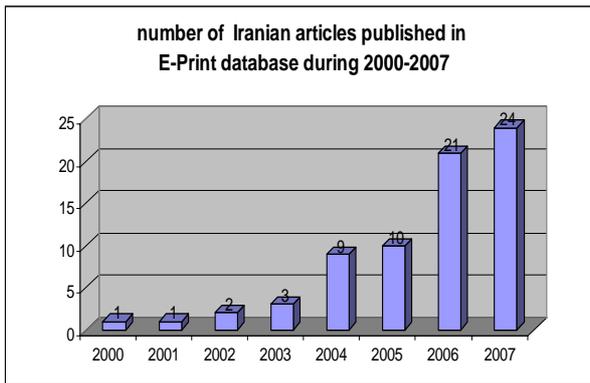
Table1: The rank of Iranian articles published in E-Print among Asian countries

As it can be observed from the table1, India, China, Indonesia and Iran have the 4 top ranks in articles published in E-Print.

Chart 1

Number of articles in E-Print	countries
484	India
98	China
76	Indonesia
71	Iran
23	Pakistan
19	Malaysia
10	Lebanon
8	Turkey
7	Japan
6	Sri Lanka
3	Nepal
1	Singapore
1	Taiwan

from the table1, India, Iran have the 4 top ranks E-Print.



As it can be observed from the chart 1, the Iranian published articles have had an increasing process during 2000-2008.

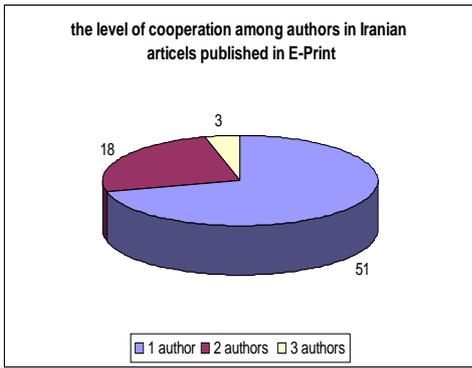
Findings of this research show that in all of Iranian LIS articles (71 articles) in E-Print, 51 articles were individual and 20 articles were collaborative. Maximum number of authors working together in one article was 3.

Table2: Categorized by collective/ individual

Individual	collaborative		
	2 authors	3 authors	4 authors
51 articles	17 articles	3 articles	0

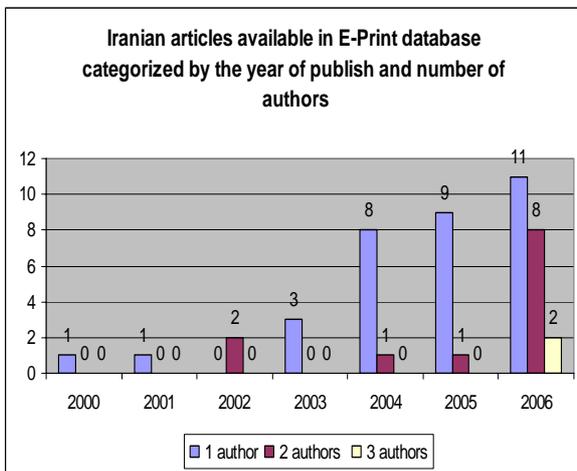
As it can be observed from table2 and chart2, most of the Iranian articles in this database were individual articles.

Chart 2



In all Iranian articles published in this database, 52 articles have been published in conferences and 14 articles have been published in magazines.

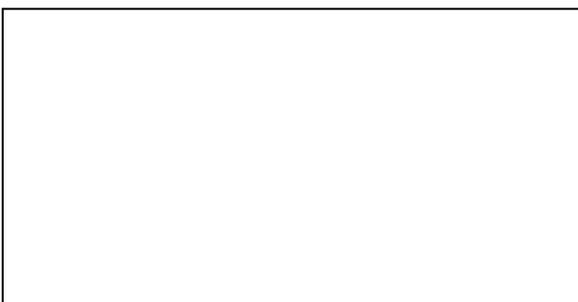
Chart 3



As it can be observed from the chart 3, the rate of collaboration among Iranian articles increases in this database during 2000-2008 dispersedly.

Acceptability degree

Acceptability degree of each article (individual and collaborative) has been obtained by this formula:



Y

$$\frac{\text{Total number of individual articles downloaded}}{\text{Total number of individual articles}} \times 100 = \frac{\text{Number during articles abstracts observed}}{\text{Total number of individual articles}} \times 100$$

Certainly the percent of this rate could be found by multiplication to 100

Table 3: The percent of acceptability of Iranian articles

Downloading individual articles	Observing abstract of individual articles
12616	30711
0.8	percent of acceptability of Iranian individual articles during 2000-2007

As it can be observed percent of collaborate acceptability degree individual articles acceptability of was twice the Perhaps this many different reasons, but in this research only collaborative and individual aspect of article was important and findings of this research show that collaborative articles are more acceptable than individual ones.

Downloading collaborative articles	Observing abstract of collaborative articles
3361	8514
1.97	percent of acceptability of Iranian collaborative articles during 2000-2007

from the table3, the Iranian LIS articles (1.97) was more than (0.80), so that, the collaboration articles individual articles. difference may have

In another part of this research we want to answer this question: Which countries had the greatest usage of Iranian LIS articles, published in E-Print? In this regard, the top countries that have had the greatest usage of each article were reviewed and finally the data of the following table came up.

Table 4 : Date related to the number of observed Iranian articles

Countries	Number of observe Iranian articles
U.S.A	71
Australian	48
Iran	36
Europe	35
Spain	28
India	26
U.K	23
Canada	18
German	9
Italy	8
France	4
China	3
New Zeeland	3
Japan	3
Russian	2
Hong Kong	2
Ecuador	2
Taiwan	1
Korea	1

Mexico	1
Arabia Saudi	1
Belgium	1

9 Conclusions and Discussion

Web log transaction analysis is one of Webometrics methods. Users' feedback can be gained using this method. In this research, web log files of Iranian librarians' articles in E-print were analyzed. On the whole, research findings revealed that until March 2008 Iranian researchers had submitted 71 articles to E-Print database. 20 articles were in group and 51 articles were individually. This research showed that Iran was in fourth rank among 13 Asian countries that had submitted articles to E-print. Findings revealed that articles download process in this database was upward. Collaboration rate among authors in Iranians articles during 2000 to 2007 had been increased. Acceptable percent of group articles on the basis of the users' attitudes was high. This point showed that researchers considered scientific collaboration in articles more than last. Finally, findings indicated that researchers from USA, Australia, Iran, East Europe and Spain were 5 countries that visited Iranians librarian's articles more than other countries.

Current research revealed that Iranian researchers interested to scientific collaboration and they tended to share their produced articles to other researchers. Using E-print database researchers in Library and Information Science can access to their scientific works freely and use them effectively. Current research suggests that librarians over on the world consider this database seriously and share their articles with each other. Because E-print is integrated database for librarians that they can access to current articles in their favorite field. E-print as an information system using web log files of articles that are exist in this database can improve articles search action and attract more researchers to this database and encourage them to scientific collaboration and share their knowledge to other researchers. This article suggest that E-print add a translation capability for translate Persian articles to other languages, because Iranian librarians have produced plentiful articles that they tend to submit them to E-print and other researchers can use these articles.

References

- Gupta, BM, Dhawan, SM (2007). Status of Physics Research in India: An Analysis of Research Output during 1993-01. International Workshop on Webometrics, Infometrics and Scientometrics & 8th COLLNET Meeting, 10-12 May, 2007, India
- Hart, Richard L. (2000). Collaborative publication by University librarians: An exploratory study. *Journal of Academic Librarianship*. 26(2): 94-99
- Ingwersen, Peter, Jacobs, Daisy(2004). South Africa research in selected scientific areas: Status 1981-2000. *Scientometrics*. Vol.59. No.3.PP:405-423.

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H. Kretschmer & F. Havemann (Eds.): Proceedings of WIS 2008, Berlin *Fourth International Conference on Webometrics, Infometrics and Scientometrics & Ninth COLLNET Meeting* Humboldt-Universität zu Berlin, Institute for Library and Information Science (IBI) This is an Open Access document licensed under the Creative Commons License

<http://creativecommons.org/licenses/by/2.0/BY>

Jamali, Hamid. R (2006). The virtual scholar: the results of research program. *Informology*. 4 (1, 2). Autumn & Winter. PP: 132-150

Jowkar, Abdolrasool & Ebrahimi, Saedeh (2008). The rate of nationalities' trends in citing Iranian scientific productions. *Library and Information Science*. Winter. PP:213-236

Noruzi, Alireza, ALimohammadi Dariush (2006). Scientific Collaboration of the Iranian LIS Professionals across the World: With an Emphasis on Citation Indexes (1971-2006). *Informology*. Vol.3, No.3&4

Osareh, F.; Marefat, R. (2005). collaboration of Iranian researchers in producing world science in Medline. *Rahyaft quarterly*. 35 (spring): 39-44.

Osareh, F.; Wilson, C. S. (2002). Collaboration in Iranian Scientific publication. *Libri*. 52(2): 88-98.

Sarrafzadeh, M. (2000). Reflection of Iranian articles in tow databases CAB and AGRIS from the first till 2000. *rahyaft*, 22 (spring and summer): 88-97.

Wilson, Concepción S, Markusova, Valentina A. (2004). Changes in the scientific output of Russia from 1980 to 2000, as reflected in the Science Citation Index, in relation to national politico-economic changes. *Scientometrics*. Volume 59, Number 3 / March. pp: 281-472