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## **Measuring the vitality and effectiveness within Social sciences and humanities research: an attempt in Italian LIS studies**

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**Abstract.** This study constitutes the beginning of a PhD research in Library and information science at Sapienza University of Rome, aimed at investigating the level of internationalisation, vitality and effectiveness of Italian Library and information studies.

The paper describes the methodology of search in international citational database, Web of science and Scopus, and in Google scholar for any scholarly work published by Italian LIS tenured researchers and university professors.

The results in WoS and Scopus are illustrated and compared with a first collection of data within Italian similar field of Social sciences and humanities (SSH).

The reliability of the data collected in citation database within the areas of Social sciences and humanities and their significance are limited; also the comparison with Italian historical and paleographic fields seems to confirm that a substantial impact of SSH non-Anglophone scientific production within citational database is influenced by a number of factors (number of indexed core journals, language of publication, level of coverage of journals, etc.).

On the other hand, Google scholar could be a valuable tool for humanistic fields, but it is necessary to deal with the complexity of the analysis and the problems of homonyms.

Therefore, these first research results made it clear that, in order to investigate the presence and impact of Italian LIS studies, a correct use and organization of quantitative data is essential.

**Keywords:** Bibliometrics, Citation analysis, Social sciences and humanities, Citational database, Library and information science, Italy

### **1. Introduction**

This paper has been conceived within a PhD research in Library and information science at La Sapienza University of Rome, focused on the effectiveness of Italian Library and information studies. The purpose of the research is to investigate the internationalisation and the vitality of Italian LIS studies, according to one of the possible uses of bibliometrics, that is “the use for

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the examination of the general growth and development of the social structure within a subject or discipline” (Pritchard, 1981, p. 4 and Welsch, 2015, p. 3).

In this paper, which is a first attempt to summarise all the results obtained so far, we will try to describe the data and elements emerging from the search in Web of science, Scopus and Google scholar for any paper written by Italian LIS tenured researchers and university professors.

For this purpose we will illustrate the research method, the difference of use – and limitations – of the three databases and the difficulties experienced with Google scholar; we will report WoS and Scopus numerical results as well.

As will be outlined below, the reliability of the data collected in citational database within the areas of Social sciences and humanities and their significance are limited.

Therefore, these first research results made it clear that, in order to investigate the presence and impact of Italian LIS studies, a correct use and organization of quantitative data is essential.

Finally, we will compare the LIS data with Italian similar field of Social sciences and humanities (SSH).

## **2. The background and the review of the literature**

As Wouters says, “Today, a scientific publication is easily recognized by its footnotes, endnotes and references to other scientific articles or books. This is one of the features which make scientific texts so different from a journalist’s story or a novel” (Wouters, 1999, p. 2). We are living within a “citation culture” and it is possible to notice different “citing culture” into the different scientific areas and in the various scholarly journals.

Moreover, the meaning of the citation has evolved over time until the creation of the Science Citation Index by Eugene Garfield in the early 1960s that showed the great citation’s potential.

In the scholarly literature, while there is an abundance of works focused on content analysis in national journal articles of LIS, on methods of library science research and on citation analysis of LIS serial literature published in one country, no bibliometric studies could be found on this particular issue. The vitality of Library and information studies has not yet been examined in the various countries.

## **3. The analysis in Web of science, Scopus and Google scholar**

### **3.1 The methodology**

The use of Web of science, Scopus and Google scholar has been subject of several studies (Jacso, 2005; Kousha, Thelwall & Rezaie, 2011; Meho & Sugimoto, 2007 and 2009; Meho, & Kiduk, 2007; Turbanti, 2014).

In particular, the comparative analyses of Lokman I. Meho and Kiduk Yang showed that it is appropriate to combine the use of the ISI database with Scopus. The Elsevier database, developed in 2004, is able to influence the ranking and the number of citations. On the other hand, Google scholar is defined “very cumbersome to use and needs significant improvement in the way it displays search results and the downloading capabilities it offers for it to become a useful

tool for large-scale citation analyses” (Meho, & Kiduk, 2007, p. 2123); however, the authors underscore that Google scholar can provide a more complete overview of relationships between LIS and the other scientific fields.

In our analysis we decided to search in Web of science, Scopus and Google scholar for any paper written by all 77 Italian LIS tenured researchers and university professors. The “Basic search” was conducted in Web of science selecting “Author”, and in Scopus the “Author search”, without filters.

We did not use any software to search within Google scholar at the beginning; after the first steps, we opted for the adoption of Publish or Perish, “a software program that retrieves and analyzes academic citations” (Harzing, 2007). This part of the work has been the hardest of the whole research; Google scholar could be a valuable tool for humanistic fields (Lazić & Lasić Lazić, 2015, p. 149), but it is necessary to deal with the complexity of the analysis and the problems of homonyms.

The query in Google scholar - and also in Google scholar citation and Google books, if available - demands indeed great attention: it is easy to face a series of problems coming from ambiguous results, duplicated registrations, confusion between homonym authors.

We decided not to present the Google scholar results for the moment, pending further data processing.

### **3.2 The results: Web of science and Scopus**

We present below the search results of paper written by all 77 Italian LIS tenured researchers and university professors in Web of science and Scopus, updated to June 2014.

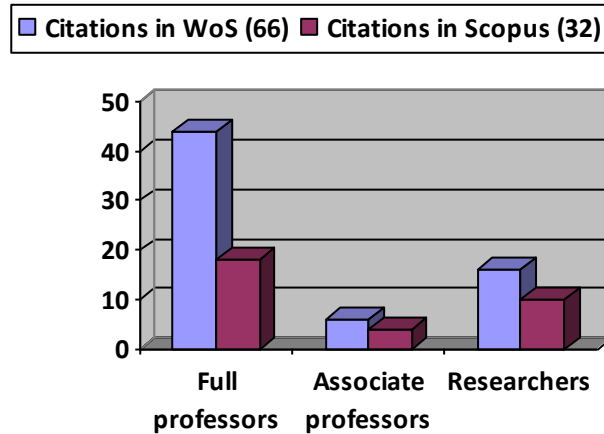
	Number of documents	Number of reviews	Number of citations
Web of science	301	205	66
Scopus	42	5	32

**Table 1: Results of the search for any scientific documents written by all 77 Italian LIS tenured researchers and university professors indexed in Web of science and Scopus**

Predictably, these results are quantitatively irrelevant.

This is due to several factors, but notably:

1. Italian LIS is a specialized area of research with an inadequate coverage within international citational database (WoS and Scopus);
2. inadequate internationalization of Italian LIS papers;
3. low number of LIS core journals indexed in WoS and Scopus;
4. level of coverage of journals indexed in WoS and Scopus;
5. low number of LIS - and SSH - monographs in WoS and Scopus.



*Figure 1: Distribution of citations between Italian tenured researchers, associate professors and full professors in WoS and Scopus*

It is enough to browse the list of Italian journals in WoS or Scopus containing at least one paper of Italian LIS scholars to realise the lack of our representativeness: none of the 21 Italian journals indexed in WoS/Scopus is a specific journal of Library and information science (all the titles are of literary or historical area, for instance: “Archivio storico italiano”, “Studi storici”, “Rinascimento”, “Rivista di letteratura italiana”, “Aevum”).

Another critical point can be the level of coverage of journals present in WoS and Scopus; not all journals’ parts are indexed and some issues may be incomplete.

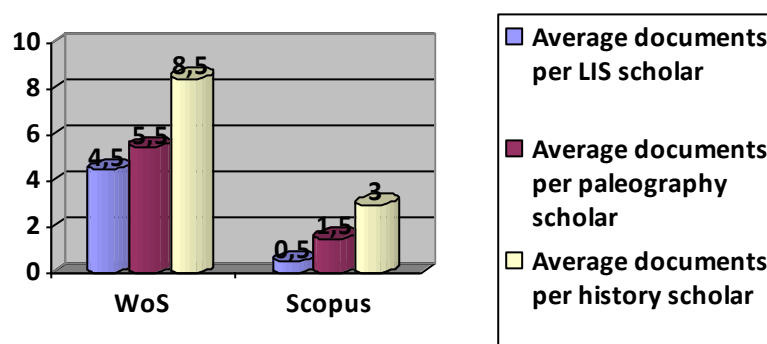
In addition to geographical and linguistic factors, Library and information science - and the whole area of Social sciences and humanities - is disadvantaged by the few presence of monographs in citational database, especially for non anglophone countries. Furthermore, we have already mentioned the existing restrictions on Google scholar use.

For all these reasons, the numerical data should be read and interpreted in parallel with a detailed analysis of the sources explaining the context.

#### **4. The comparison with Italian similar fields of Social sciences and humanities**

Moreover, a first comparison with Italian historical and paleographic fields seems to confirm that a substantial impact of SSH non-Anglophone scientific production within citational database is influenced by a number of factors (number of indexed core journals, language of publication, level of coverage of journals, etc.).

A first sample analysed has revealed that in Italy tenured researchers and university professors of medieval, modern and contemporary history are more present and cited in WoS and Scopus than scholars of LIS field, while paleographers have more or less the same number of documents and citations in comparison with Library and information science tenured researchers and university professors.



**Figure 2: Average documents in WoS and Scopus per Italian tenured researchers, associate professors and full professors of Library and information science, paleography, history**

Italian tenured researchers, associate and full professors of Library and information science and paleography have an average of between 4 and 5.5 scientific documents to head in Web of science, while for the historians the average is higher (over 8 documents to head).

In Scopus we have a different order of magnitude, but a similar situation: an average of between 0,5 and 1,5 scientific works for researchers, associate and full professors of LIS and paleography and around 3 documents to head for researchers, associate and full professors of history.

Furthermore, also Italian tenured researchers and university professors of paleography, medieval, modern and contemporary history have not a relevant number of publications and citations in Scopus and Web of science.

This low representativeness depends on the reasons mentioned above, but there is also another aspect to consider, that is the wide circulation and the multidisciplinary of journals. A well known and widespread journal is more likely to be read and to receive numerous citations than a specialised national one. At the same time, a journal containing various topics of interest to different

scholarly communities is certainly more popular than a journal that covers only one sector-specific issue.

However, the results of the search in WoS and Scopus remain quantitatively irrelevant also for the field of history; we will try to analyse the reasons for this weakness.

An example with three famous scholars, two of whom Italian and one American, can be helpful to understand the context.

	Number of documents in WoS	Number of documents in Scopus	Number of citations in both database
<b>Armando Petrucci</b>	8	1	7 (all in WoS)
<b>Roberto Bizzocchi</b>	10	6	17 (10 in WoS + 7 in Scopus)
<b>Robert Darnton</b>	158	36	284 (206 WoS + 78 in Scopus)

**Table 2: Results of the search for any scientific documents written by three famous scholars indexed in Web of science and Scopus**

Armando Petrucci is a famous Italian paleographer and historian, also professor in prestigious foreign universities; nevertheless, he has a very low number of scientific works indexed in WoS (8) and Scopus (1) and only 7 citations in Web of science.

Also Roberto Bizzocchi, a popular Italian historian, has not considerable results: 10 documents indexed in Web of science, 6 in Scopus and 17 citations in both database.

Instead Robert Darnton, a famous American historian, Carl H. Pforzheimer University professor and Director of the University Library at Harvard, with 158 documents in Web of science, 36 in Scopus and a total of 284 citations, is an example of versatile scholar. Darnton has written several books of history and history of books, as well as many articles on multidisciplinary and popular journals as “New York reviews of books” indexed completely in citation database. Consequently, his presence within citational database is very strong, not comparable to that of other esteemed scholars.

## 5. Conclusions

If, as we said at the beginning, between various uses of bibliometrics there is the “examination of general growth and development of a subject or discipline” (Welsh, 2015, p. 3), the bibliometric methods are not easily applicable to Social sciences and humanities. These first results of the research show the difficulty of finding a way to measure the vitality of Italian Library and information science; therefore it is important to combine traditional bibliometrics indicators with other tools, first of all altmetrics and library catalog analysis.

Thanks to altmetrics, a “new metrics based on the Social Web for analyzing, and informing scholarship” (<http://altmetrics.org/about/> and Welsh, p. 2), we have begun to consider not only the scientific articles but also the impact of material existing in the social media tools. With library catalog analysis an old powerful tool of libraries - the catalogue - becomes the way to investigate the presence and the use (i.e., the impact) of books, under-represented in citational database.

In addition to quantitative research it could be useful to use a qualitative approach to the matter that allows to assess the international impact of the field; for example, interviews with university professors of other countries, focus groups, etc.

Another possibility for the qualitative analysis can be the search of the significant Italian LIS publications. Although in the research assessment the quantity of the scientific papers has become very important, in the professional life of a scholar the publications really substantial are not many; often the impact and the fame of a researcher are given by one or two works.

Therefore, the qualitative element should be part of the whole evaluation process; quantitative metrics alone are not enough to examine a phenomenon.

Only by combining different methods and analysis it will be possible to evaluate the real role of Italian Library and information science studies within the national and international scientific community.

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