

Co-Citation Analysis on Subject Treatment of Information: a Study Based on Publications From Brazilian Researchers on Information Science

Luciana Garcia da Silva Santarem¹ and Ely Francina Tannuri de Oliveira²

¹ lucianasantarem@marilia.unesp.br, ² etannuri@flash.tv.br

Unesp-Marília, F.F.C., Av. Hygino Muzzi Filho, 737 CEP 17525 900 Marília/ SP (Brazil)

Introduction

This work aims to survey and analyze co-citations from journals' articles published, from 2004 to 2008, by researchers from Information Science Graduate Programs who conduct investigations into Subject Treatment of Information.

The current study is justified since the theme is considered central to the field of Information Science (Hjorland, 2000). We intend through metric treatments, particularly co-citation analysis, to outline the scientific communication network formed by those researchers.

Theoretical References

According to Spinak (1996) and Small (1973), co-citation analysis shows relationships and frequencies of documents that are cited together in other documents. Particularly in this work, co-citation will show theoretical foundations in the area of Information Science for the group of researchers who deal with Subject Treatment of Information.

The theoretical foundation of Subject Treatment of Information was developed "from the approach of three inherent aspects: processes, products and instruments, as they can be seen in the systematization developed during the IV Meeting of Directors and Teachers of Librarianship and Information Science from Mercosul" (Encontro..., 2002), in other words, Processes (analysis, condensation and representation); Products (indexes and abstracts); Instruments (classifications, lists of headings of subject, thesauri, terminologies and ontologies).

According to Guimarães (2004), Subject Treatment of Information area has been moving towards its theoretical-methodological consolidation, and its epistemological bases have been developed from distinct trends of thought.

Methodology

At first, a survey done at National Association of Research and Graduate Programs in Information Science (ANCIB) allowed the identification of the researchers group. Then all the Graduate Programs in Information Science in this country were checked through their websites. Next, summaries

were analyzed and types of research checked. Only Programs that develop research on Subject Treatment of Information were selected. The total came to 18 researchers. Again, researchers' curriculum was checked and special emphasis was given to their journals' articles. The number of articles published from 2004 to 2008 amounted to 80 in national and international journals. The focus of the research, - Subject Treatment of Information -, was considered the main quality, regardless of the journal's source. Another factor taken into account was the one related to the publication's access through internet. The total came to 2.659 authors cited in 80 articles. Self-citations were kept, as they have been found to be the sequences of researches. This work deals with co-citation analysis. Therefore a survey with the most cited authors was the procedure for selecting authors at first. Spinak (1996) states that this selection will be representative and adequate, and that the most cited authors, even the "classics" are in general part of this selection. Thus, questions regarding citations are not object of analysis and debates for now. The matrix of co-citation was constituted of 14 authors and a cut of those who received at least 19 citations was done, in order to show clearly the network formed. Co-citation network was built using the Pajek software, as seen in the Figure 1.

Presentation and Data Analysis

At first, it can be seen a nucleus formed with Lara, Tálamo and Kobashi (Brazil) who received 12 co-citations in publications. These authors are important researchers in Brazil on the field of Subject Treatment of Information. These same authors appear together with Saracevic (Croatia) and García Gutiérrez (Spain) with 8 and 7 occurrences, and Fujita (Brazil) and Gardin (France) with 6 occurrences. On the other hand, Campos (Brazil) and Dahlberg (Germany) together appear with 12 occurrences, and still, Campos (Brazil) and Ranganathan (India) with 9 occurrences.

Like the first Brazilian authors, all the others who appear in this presentation play a part in the construction of the theoretical bases for the area, nation-wide. On the other hand, it was found that theoretical references of Brazilian authors are in

harmony with contemporary trends of thought of researchers from abroad.
Next, constitution of analyzed co-citations network is visualised.

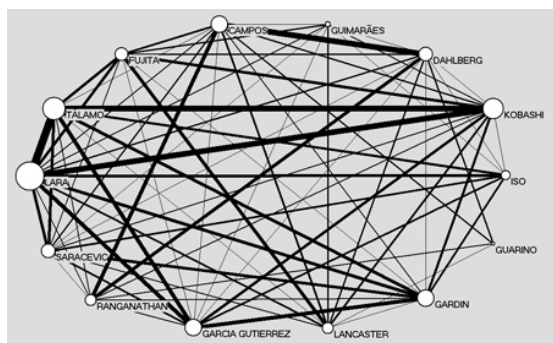


Figure 1. Co-citation in the publication of periodicals' articles.

Final Considerations

Among the authors of greater co-citation occurrence, we have identified Lara, Tálamo, Fujita, Campos and Kobashi. They are all, Brazilian researchers who take part in the group of researchers surveyed among the first 18 who work in Graduate Programs. The fact that the data are congruent clearly indicates solidity of this group, that together with international sources, have become themselves sources of investigation for the area, at national level.

This research can be developed into new approaches such as: more detailed studies on citation analysis, analysis of national and international publications, impact factor and network density, besides the fact that the study may

be expanded to include the production of books and books' chapters.

Acknowledgments

CAPES: for grants awarded to take the Master Degree.

References

- Encontro de Diretores de Escolas de Biblioteconomia e Ciência da Informação, 6 (2002). *As articulações da pesquisa com o ensino e a extensão nos cursos de Biblioteconomia e Ciência da Informação no Mercosul: relato final*. (pp.2). Londrina: ABECIN.
- Guimarães, J.A.C. (2004). Profissional da informação: desafios e perspectivas para sua formação. In S.G. Baptista & S.P.M. Mueller (Orgs.), *Profissional da informação: o espaço de trabalho* (pp. 87-106). Brasília: Thesaurus.
- Hjørland, B. (2002). Domain analysis in information science: eleven approaches – traditional as well as innovative. *Journal of Documentation*, 58, 422-462.
- Small, H. (1973). Co-citation in the scientific literature: a new measure of the relationship between two documents. *Journal of the American Society for Information Science*, 24, 265-269.
- Spinak, E. (1996). *Diccionario enciclopédico de bibliometría, cienciometría e informetría*. Caracas: UNESCO-CII/-II.