Research trends in library and information science based on Spanish scientific publication 2000 to 2010

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ABSTRACT

The aim of the paper is to establish Spanish research trends in Library and Information Science (LIS) on the basis of academic publications issued between 2000 and 2010. Data about publications were retrieved from twelve university department or faculty websites and were checked against Exit - Directory of Experts in Information Handling *and* Dialnet *or* DoIS*, the Spanish databases on information, documentation and translation studies. The study has identified eleven topic groups of LIS research. The biggest group is Information sources, support and channels, representing 24% of the total publications. There are three other equally large topic groups, representing 13% of the total publication materials each. They are: Information treatment for information service; Industry, profession and education; and Information use and the sociology of information. This paper also discusses Spanish research trends related to the findings from prior studies.*

Keywords: Library and Information Science (LIS) research; Scholarly publications; LIS research classification; Spanish LIS research trends.

INTRODUCTION

Research trends in Library and Information Science (LIS) are an ever current and interesting topic for the LIS research community and practitioners. In general terms, research can be defined as the information seeking of individuals and groups, including the factors that generate this activity, as well as various arrangements and conditions that support the information seeking and the provision of access to information (Jarvelin and Vakkari 1993). Research is necessary to create new knowledge and contribute to the growth of LIS as a profession and discipline. LIS research contributes to the understanding of the information society and its development, enables professionals to relate more effectively to their working environment, provides practitioners with guidance and promotes progress in the profession (McNicol and Nankivell 2003).

The aim of this paper is to examine Spanish LIS research trends on the basis of academic publications that were published between 2000 and 2010. This decade may be considered an important period in LIS because of the fast technological growth that took place which affected the world of information. The decade is significant because the social applications or tools related to Web 2.0 have been implemented and well established and also, the

European Higher Education Area was established, which affected LIS studies and continued the debate surrounding the role of the information professional of the 21st century.

Based on the literature covered in the Web of Science database on LIS research conducted up to 2007, Spain contributes the eighth highest number of publications from among 50 countries (Erfanmanesh, Didegah and Omidvar 2010). This indicates the importance of Spanish research contribution in Europe and other parts of the world. Information science research in Spain has been carried out for more than fifty years and has been linked with library science. The major developments of Spanish information science have taken place at the following institutions: the Centro de Información y Documentación Cientifica (CINDOC) - the Information institute of the Spanish Scientific Research Council now known as Instituto de Estudios Documentales sobre Ciencia y Tecnología (IEDCYT), the Department of Documentation at the Universidad Complutense de Madrid, and the Department of Documentation at the Universidad Autonoma de Barcelona (Catalonia). Spanish LIS research has been influenced by the work of Belgian and French documentalists Paul Otlet, La Fontaine and Suzanne Briet (Rochester and Vakkari 2003).

LITERATURE REVIEW

There have been quite a number of publications on LIS research trends. When it comes to the international investigation of LIS research trends there are IFLA reports, such as the *Comparison of National Trends* (Rochester and Vakkari 2003) and bibliometric studies on LIS publications (Davarpanah and Aslekia 2008; Mukherjee 2009a; Mukherjee 2009b).

A wide variety of methods and approaches may be observed in the papers cited. Rochester and Vakkari (2003) have analysed international and national trends in LIS research on the basis of journal articles. Trends in LIS research have been described by comparing topic distribution, subtopics, approaches and methods in national LIS studies in China, Finland, Australia, the United Kingdom, Spain and Turkey. The comparison shows a variety of emphases in the investigation and trends in LIS research.

Mukherjee (2009a) has presented a bibliometric study of articles published in the Journal of the American Society for Information Science and Technology (JASIST) from 2000 to 2007. He examines the distribution of papers under various headings, including authorship pattern and the nature of collaboration, geographic distribution of articles, the nature of cited and citing references and frequently cited authors. The results indicate that the rate of publication was uneven over the studied period. The country-wise distribution reveals that the highest number of contributions came from authors from the United States followed by authors from the United Kingdom. Davarpanah and Aslekia (2008) have presented a quantitative study of the productivity, characteristics and various aspects of global publication in the field of LIS. Between 2000 and 2004, 56 LIS journals indexed in the Social Science Citation Index (SSCI) were analysed. The study investigated a sample of 894 (10%) contributions and the results show that the research output of the authors from the USA and the UK accounted for upwards of 70% of the total productivity.

There are some papers based only on academic production, where dissertations and doctoral thesis were analysed (Gdoura 2008; Prebor 2010). Gdoura (2008) has investigated the evolution of LIS research activities in relation to changes in the information sector in North Africa. He also analyses the basic characteristics of scientific production in information science. Gdoura (2008) concludes that Arabic literature in the field of librarianship remains modest and that its content is mainly characterised by the

predominance of empirical studies and an almost total absence of theoretical and methodological studies.

The research findings of Prebor (2010) indicated that there was a relatively clear division of research topics between the studies conducted in information studies departments and those conducted in other disciplines in some way related to information studies. He concluded that while LIS scholars focused on the information user, fields such as business administration, computer science, education and communication focused on the system, information technology, the information industry and the management of information.

The literature on LIS research trends includes works based on both academic and professional reflection that analyse the content of those sources. Erfanmanesh, Didegah and Omidvar (2010) investigated the scientific productivity of LIS researchers throughout the world, and the visibility and impact of their publications. They analysed 99,789 documents extracted from the Web of Science, published in 61 LIS journals during the period 1998-2007. Each LIS publication received an average of 0.27 citations. The results of the investigation show that researchers from the United States contributed more than 60% of all LIS publications and about 40% of all citations. Computer Science researchers are the largest group that cites LIS publications.

In terms of LIS research trends in Spain, the most often cited work is Cano's *Bibliometric overview of library and information science research in Spain.* Cano (1999) reviewed the research trends in LIS in Spain from 1977 to 1994. Two journals were selected to as the data source: *Revista Española De Documentación Cientifica (RevDoc)* and *Documentación de las Ciencias de la Informacion (Documentación)*. Over those 17 years, the two journals published a total of 354 articles, mostly in Spanish. Cano (1999) found that information retrieval and scientific communication are two of the most frequently researched topics. Cano (1999) also observed that there were two research communities: the science-based and humanities-based. The authors in the journal *Documentación,* published by the Department of Documentation at the Universidad Complutense in Madrid, were active researching on bibliographic-historical issues, while the authors of the journal *Revista Espanola De Documentacion Cientifica* carried out research on scientific communication and information retrieval. Cano (1999) further noted that most of the editorial members of *Revista* hold a doctorate and have postgraduate qualifications in the sciences and that the articles in the journal have an emphasis on empirical research. Members of the editorial board of *Documentación* hold doctorates in the humanities, literature and linguistics, and the articles published in the journal used research methods commonly employed in these three fields.

MATERIALS AND METHOD

The data source used in preparing this paper comes from twelve public universities currently offering LIS academic programmes. Information about the scholarly publications was retrieved from the websites of department or faculty and were checked against *Exit - Directory of Experts in Information Handling* and *Dialnet* or *DoIS*, which are Spanish databases on information, documentation and translation studies. Journal articles and monographs published between 2000 and 2010 were chosen for analysis, as they best reflect all the changes in interests of LIS practitioners and of the discipline in general. Contemporary Spanish research trends are related to data arising from prior studies of this kind.

The choice of a classification scheme for this material was no simple task. The categories applied in LIS studies of past decades vary, reflecting the rapid evolution of the field. Such changes have led recently to several attempts to map the field of information science (Prebor 2010). To recognise LIS trends, especially new directions in the literature, it is necessary to build a proper organisational scheme adjusted to the material collected. Using an already existing classification scheme can result in the loss of new and important topics.

To create an organisational scheme to classify Spanish academic publications between 2000 and 2010, many classification schemes were analysed. One is a classification implemented to investigate LIS trends in Taiwan during the same decade. The material was classified according to nine categories: Library and Librarianship, Library Management, Technical Services, User Services, LIS Theory and Foundation, LIS and Technology, Book, Documentation and Archive, and Others (Interdisciplinary) (Lin and Meng Lio 2011). However that classification has proven insufficiently detailed to truly reveal Spanish LIS trends.

An organisational scheme created by Cano (1999) provides eleven topic categories: The Profession and LIS Education, Library History, Publishing (Book History), Education in LIS, Methodology, Analysis of LIS, LIS Service Activities, Information Storage and Retrieval, Information Seeking, Scientific and Professional Communication and Other LIS Aspects. This scheme is quite similar to the one elaborated by Järvelin and Vakkari (1993) which contains five main groups, each divided into more detailed subcategories. The main groups are as follows: LIS topic, Research on Library and Information service activities, Research in information storage and retrieval, Research on information seeking, and Research on scientific and professional communication. Neither Cano's nor Järvelin and Vakkari's classification include current LIS research topics such as electronic information, social media in libraries or archives, which are present in the materials analysed for this paper.

Another scheme used is the one presented by Davarpanah and Aslekia (2008). It provides 18 categories and contains current issues such as information and library technology, media and the communication of information. The selected categories include: Communication and information technology, Computerised information storage and retrieval, Library use and user, Materials and bibliometrics, Scientometrics, Organisations, Knowledge and learning, Media, Libraries and resource centres, Information communication, Bibliographic records, Library technology, Profession, Technical Services, Librarianship and information science, Records management, Reading (information literacy), Bibliographic control, and Other subjects.

Yet another scheme considered for implementation in this paper was the one elaborated by Prebor (2010), who recommended the following groups. This organisational scheme seems quite up-to-date, detailed and interdisciplinary and provides a good representation of the actual fields of LIS. They are (Prebor 2010):
  a) Foundations of Information Science (IS) – history of information science and librarianship, archive science, history of knowledge formats (manuscripts, print and digital), information science epistemology, history of libraries and librarians, library and information science as a profession.
  b) Methodology – quantitative and qualitative research, bibliometrics, informatics, bibliography, domain analysis, webometrics.
  c) Information/Learning Society – social and cultural aspects of the information society, sociology of knowledge, social communication, electronic learning,

information literacy, information science education, lifelong learning, reading, the application of technology in teaching, reading habits, reading encouragement.

d) Information Technology – communication and computer networks, document delivery systems, structure of computerized systems, programming languages, multimedia, information retrieval systems, systems analysis, artificial intelligence, human–computer interaction, information architecture, digital security systems, website construction, networks technologies, knowledge representation, search tools.

e) Data Organization and Retrieval – classification schemes, metadata, indexing, text mining, abstracting, knowledge organisation, taxonomies, thesauri, ontology, vocabulary control, online search techniques, reference work, the semantic web.

f) Information Industry Economics and Management – comparative intelligence, databases, digital libraries, the information industry market, information management, information manipulation, knowledge management, information centres and libraries management, collection management, electronic commerce, the influence of websites on marketing.

g) Information Ethics and Law – copyright, digital security, digital divide, censorship, Internet crime, free access to information, information policies, information licensing and fair use, information privacy and ethics, the credibility of information.

h) User Studies – human information behaviour, information-seeking behaviour, information needs, reference interview, user-information, communication between scientists, the usability of web information.

i) Diffusion Studies – information dissemination, communication theory, message theory, information centres and libraries, electronic dissemination.

j) Social Information Science – the information needs of different cultures, information education, power and ethics, social information banks, social information sections in school and public libraries, printed and electronic self-help sources, the social information scientist, community information, information diffusion in multicultural societies, health information centres, social networks, bibliotherapy.

Another classification scheme, which may be implemented to analyse the data is one implemented in *Anuario ThinkEPI,* a Spanish journal in documentation and information science. The categories used are as follows: Training, Profession, Libraries, Resources and market information, Social networks and Web 2.0, Indexing and information retrieval, The scientific publication, Information systems and technologies (Anuario ThinkEPI 2011). This classification is one of the most recent, although it is quite general.

Finally, the organisational scheme used to classify the data for this paper was based on *JITA Classification Schema of Library and Information Science*, which is used in the E-LIS (E-prints in Library and Information Science) repository. It is organised by levels:

a) Theoretical and General: general level.

b) User oriented, directional, and management functionalities: intermediate level (socio economical and legal issues included).

c) Objects, Pragmatics and Technicalities: specific level (E-LIS, 2010).

This organizational scheme seems to be the most current, detailed and suitable for classifying Spanish academic articles between 2000 and 2010.

RESULTS

The unit of analyses chosen in this paper is academic productivity. In Jiménez Contreras's (2002) investigation, done on the basis of materials covered in the Institute of Scientific Information (ISI) databases, the university and the Spanish National Research Council (*Consejo Superior de Investigaciones Científicas*, CSIC) production represent 80% of the total number of LIS publications.

Journal articles and monographs published between 2000 and 2010 retrieved from the data source were chosen for analysis. They build up a set of 1051 bibliographic records. The main languages found in the publications are Spanish, English and Russian. The materials was classified according to *JITA Classification Schema of Library and Information Science*, based on levels, each of which contains subjects. The first, general level includes two main topics:
- Theoretical and general aspects of libraries and information,
- Information use and the sociology of information.

The second, intermediate level contains five topics:
- Users, literacy and reading,
- Libraries as physical collections,
- Publishing and legal issues,
- Management,
- Industry, profession and education.

The last level comprises five topics:
- Information sources, support and channels,
- Information treatment for information services,
- Technical services in libraries, archives and museums,
- Housing technologies,
- Information technology and library technology.

The percentage distribution of Spanish scholarly publications by subjects is shown in Figure 1. The biggest group constituted Information sources, support and channels representing 24% of the total materials. Not all the subjects that appear in *JITA Classification* were recognised in the articles analysed, for example, the group of Housing technologies does not appear in the material collected.

Under each main class, a number of subtopics were indentified. Within Information sources, support and channels category, the most popular subtopics are periodicals and newspapers (13%), e-resources (13%), archival materials (12%) and repositories (open access and others, 10%). Other subtopics that appear are: databases, rare books and manuscripts, electronic media, Web pages, multimedia, e-journals, portals, print materials, OPAC-s and e-books. The percentage distribution of subtopics is shown in Table 1.
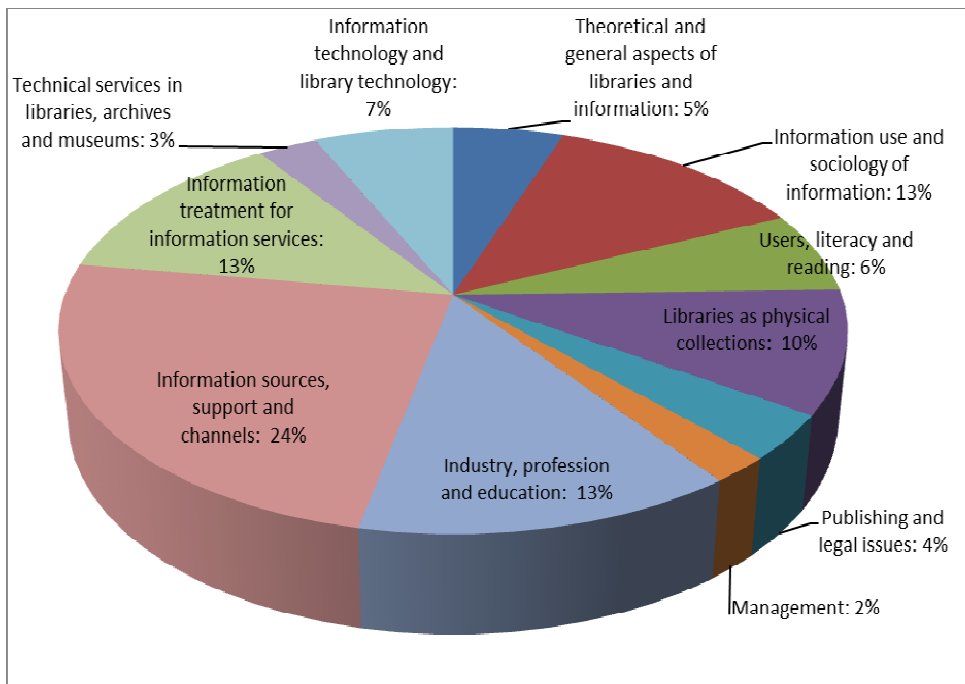
Figure 1: Distribution of Spanish Scholarly Publications by Subjects (2000-2010)

Table 1: Distribution of Subtopics under Information Sources, Support and Channels Category

Subtopic	Percentage
Periodicals, Newspapers	13%
e-resources	13%
Archive materials	12%
Other (bibliographies, thematic overview, patents)	12%
Repositories	10%
Databases and Data base Networking	8%
Rare books and manuscripts	5%
Electronic media and Web 2.0	5%
Web pages	5%
Audio-visual, Multimedia	4%
E-journals	4%
Portals	4%
Print materials	3%
OPACs	1%
E-books	1%

Among the topics recognised in Spanish research articles, there are three groups that are equally large; each represents 13% of the total materials. They are: Information treatment for information services; Industry, profession and education and Information use; and The sociology of information. In the class Information use and the sociology of information, the most popular subtopics are Information in society and Information policy. Table 2 presents the distribution of the subtopics under that group.

Table 2: Distribution of Subtopics in the Information Use and
Sociology of Information Category

Subtopic	Percentage
Information in society	21%
Information policy	21%
Bibliometric methods	17%
User interfaces, usability	17%
Information dissemination and diffusion	7%
Information society	6%
Information needs and information requirements analysis	5%
The use and impact of information	2%
Others	2%

The industry, profession and education category contains the subtopics, Information and software industry, and Computer and telecommunication industry, however they make up a small percentage of the whole group (at 2% and 6% respectively). The subtopic of Professional organisations, and Staff and biographies represent 4% and 6% respectively. The most popular subtopics in the class of Industry, profession and education were Education (16%), and Aspects of curricula (15%). Their higher values may have been brought about by changes in higher education prompted by the Bologna Process and the European Higher Education Area (EHEA). The remaining articles classified as Others (40%), constitute an important part of the category. They concern the employability of LIS students, professional meetings, collaboration in LIS research and researchers.

Information treatment for information services is the third group, which represents 13% of the overall materials collected. This group contains the subtopics Cataloguing and bibliographic control (10%), Content analysis (12%), Index languages, processes and schemes (16%), Data and metadata structures (10%), Knowledge representation (11%), Information transfer: protocols, formats and techniques (7%), Information presentation: hypertext and hypermedia (1%), Filtering (1%), Reference linking (3%), Design, development, implementation and maintenance (7%), and Others (23%).

Libraries as physical collections is quite an important research topic in Spanish scholarly publications, representing 10% of the overall materials. Archives is the highest researched subtopic in this category. Table 3 shows the distribution of the subtopics in this group. It also suggests that the most popular library type to be investigated is the public library. There are also many papers that refer to quality issues in libraries and the evaluation of collections.

The information technology and library technology group represents 7% of the overall materials. The most popular subtopic in this category is Internet and web pages, Search engines, Applications and the Semantic web.

Users, literacy and reading topic comes after Information technology and library technology, which accounts for 6% of the materials. Use and user studies are the highly researched subtopics. Table 4 presents the distribution of the subtopics in the category Users, literacy and reading.

Table 3:   Distribution of Subtopics in the Libraries as Physical Collections Category

Subtopic	Percentage
Archives	23%
Public libraries	20%
Other (quality matters, collection evaluation)	19%
Academic libraries	16%
Private libraries	8%
Special libraries	8%
School libraries	6%

Table 4: Subtopics in Users, Literacy and Reading Category

Subtopic	Percentage
Use studies	32%
User studies	32%
User training, promotion, activities, education	20%
User categories: children, young people, social groups	9%
Reading and story telling	4%
Literacy	1%
Others	1%

Finally, the following topics are also covered in Spanish LIS research: Theoretical and general aspects of libraries and information (5% of the overall materials collected), Publishing and legal issues (4%) and Management (2%).

DISCUSSION AND CONCLUSION

This paper has identified that that Spanish LIS research concentrates on information and its processing, basically on electronic information and the processes connected with it. Information sources, support and channels are at the centre of attention, as is the processing of information to be accessed. Information use is also a popular topic among Spanish LIS authors. When the distribution of the subjects in Spanish LIS publications is observed, a significant number of papers on the LIS profession, education and curriculum were noted. This may be attributed to the creation of the European Higher Education Area and all Bologna reforms, which have also affected LIS research and continued the debate about the information professionals of the 21st century.

Library, archive and collections has also been an important topic in Spanish LIS publications of the last decade. In addition, quality matters and the evaluation of collections have taken a prominent place in Spanish LIS research. There are two groups: Information technology and library technology, which represents 7% of the entire materials, and Users, literacy and reading, which accounts for 6%. Both are related to the largest categories discussed earlier. Information technology and library technology is related both to Information sources, support and channels and Information use. Users, literacy and reading is connected with both the Information use, and Libraries, archives and museums.

The next group is called Theoretical and general aspects of libraries and information, and represents 5% of the entire materials collected. This percentage shows that the larger part

of the materials is at the intermediate and specific level of the applied classification. Publishing and legal issues (4%) and Management (2%) are the groups connected with the thematic groups like Libraries as a physical collection mentioned earlier.

It is difficult to compare the results obtained in this study to those available in the literature, because there are differences in methodology and applied classifications. All the authors used a different classification scheme, one, which is most appropriate to their data source. That is why a common basis for comparing the popularity of specified topics and research trends in the national and international settings cannot be established. Moreover the chronological frameworks adopted by the authors also differ, and there are different types of documents chosen for analysis in various articles. There are those authors (Prebor 2010) who investigated research trends sampling theses and dissertations, while others did so on the basis of research projects or journal articles (Davarpanah and Aslekia 2008; Jarvelin and Vakkari 1993; Mukherjee 2009; McNicol and Nankivell 2003). In Davarpanah and Aslekia's (2008) study based on 56 international LIS journals, the following subject areas were discussed: Communication and information technology (29.87%); Computerized information storage and retrieval (11.62%); Library use and users (9.45%). Those topics together constitute 50.94% of the analysed materials.

It is revealing to compare the coverage of LIS research subjects that appear in Open Access (OA) e-journals. Mukherjee (2009b) reported that almost all aspects of librarianship have been reported in reviewed OA e-journals. A total of 442 unique subject headings were assigned to all articles. The predominant subject was Information Technology (308 articles), followed by Information Sources (245 articles). Other well-defined topics of interest are Information Treatment for Information Services (185), Library Technology, Computers, Digital Libraries, Applications of Information Technology (169 articles), Knowledge and Learning (124 articles). All these top five subject headings are related to various aspects of information technology. Information Technology in terms of Open source software (28), Internet usage-survey (26), Internet and World Wide Web-issues, infrastructure etc. (25) and Issues in information technology (22) are the most predominant topics. Also well-represented are the Concepts of information seeking behaviour (20), Librarianship (17), Information literacy (14) as well as Information presentation-hyperlinks, hypermedia system (57), Knowledge management (57), Electronic commerce (46), Digital libraries-issues, concept etc. (42), Digitisation (34), Web pages (29), Digital repositories (28), Digital preservation (24), Electronic publishing (24) and Online databases (20) (Mukherjee 2009b). On the other hand, LIS journals indexed in databases such as Scopus and the Web of Science (WoS) obtain the following subject categories: information systems, human-computer interactions, information systems management, computer network or communication (Abrizah et al. 2013).

A comparison of articles from Open Access journals and journals indexed in global citation databases confirms that Information technology and Information services are the most investigated topics in LIS international and Spanish research scene. Table 5 illustrates the most popular research trends in international and Spanish LIS publications.

A comparison of international LIS trends with the Spanish research trends reveal that the two vary. While in international trends, Communication and information technology is the most frequently area researched, in Spain it is only the sixth most discussed research topic. Computerised information storage and retrieval is the second most popular subject in international LIS research. It is quite difficult to find a category related to this one among Spanish research trends – it could be Information sources, support and channels, the

largest group covered in the materials, or it could be Information treatment of information services, the second largest. Library use and users is the third most popular topic in international investigations. In the Spanish classification scheme, Library use and users could be related to two separate categories: Library as physical collection and Use, literacy and reading, which hold the fifth and seventh places in the overall materials analysed.

Table 5: Distribution of Subject Categories in International and Spanish Research Trends

	International LIS trends[1]	Spanish LIS trends	International OA LIS trends[2]
1	Communication and information technology	Information sources, supports, channels (24%)	Information Technology
2	Computerised information storage and retrieval	Information treatment for information services (13%)	Information Sources
3	Library use and users	Industry, profession and education (13%)	Information Treatment for Information Services
4		Information use and sociology of information (13%)	Library Technology, Computers, Digital Libraries, Applications of IT
5		Libraries as physical collections (10%)	Knowledge and Learning
6		Information technology and library technology (7%)	
7		Users, literacy and reading (6%)	
8		Theoretical and general aspects of libraries and information (5%)	
9		Publishing and legal issues (4%)	
10		Technical services in libraries, archives and museums (3%)	
11		Management (2%)	

Comparing the recent research trends to earlier ones show that in the international journal literature, Information storage and retrieval was the most popular topic, and Library and information services became the second most popular in the years 1965, 1975 and 1985 (Rochester and Vakkari 2003). Information storage and retrieval remains an important topic; even after 20 years it still stays among the most researched areas. Åström's (2007) research confirms this fact. His analysis of articles published in 21 LIS journals from 1990 to 2004 shows that two distinct research fields - Informetrics and Information seeking and retrieval (ISR) have been researched with consistency. However, Experimental retrieval research and User-oriented research have merged into one ISR field; while Information Retrieval and Informetrics also show signs of drawing closer together, sharing research interests and methodologies, making Informetrics research more visible in mainstream LIS research (Åström 2007).

According to research conducted up to 1994, the most popular Spanish research trends were LIS services covering 19.5% of the total publications, followed by Information

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[1] Based on Davarpanah and Aslekia (2008)
[2] Based on Mukherjee (2009b)

retrieval and Scientific and professional communication at 18.9% and 18.6%, respectively. These topics may have been so popular due to the influence of Belgian and French documentalists such as Suzanne Briet, Paul Otlet, and La Fontaine. Briet (1951) concentrated on Information retrieval, Scientific communication and the Description of services, while Otlet and La Fontaine focused on Information technology, Information retrieval, Search strategies, and Scholarly communication networks (Cano 1999).

It seems that the topics analysed two decades ago are related to those revealed in the current study. The category LIS Services is moving forward in a more detailed manner by the following topics: Information sources, support and channels (24%); Information treatment for information services (13%) and Libraries as physical collections (10%). Information retrieval is continued partly by the subject of Information use and sociology of information (13%) and Information sources, support and channels (24%).

According to McNicol and Nankivell (2003), the priorities for LIS research include: Electronic information services, Library and information management, Staff development, User needs, non-users, learning and information skills, The impact of libraries and information services, Social exclusion, networking and cross-sectoral working, and Health information. It seems that the present Spanish research trends have proven McNicol and Nankivell's forecast to be correct.

While it is difficult to predict how LIS research will develop, it can be safely assumed that the future of LIS would depend largely on information and communication technology. The integration of research areas as well as technical systems can be expected to continue to characterise LIS research, and webometrics will continue to develop and find applications in LIS research scene (Åström 2007). According to Delgado López – Cózar (2002), three trends will come to characterise Spanish research in LIS. First, descriptive texts, based on opinion or 'case studies' will predominate. There will also be a high incidence of bibliometric works, which has distinguished Spain in international research. Finally empirical methods, such as survey, preferences for bibliometric methods, historical, textual and content analysis, will be scarce. While this paper has not commented on or investigated these three aspects, they will be the subject of future reflection and analysis.

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