

Excellence and Emergence
A New Challenge for the Combination of
Quantitative and Qualitative Approaches

Book of Abstracts

10th International Conference on
Science and Technology Indicators

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PREFACE

The 10th International Conference on Science and Technology Indicators takes place at the University of Vienna 17-20 September. It is jointly organised by the Austrian Research Centers GmbH – ARC and the University of Vienna and is dedicated to “Excellence and Emergence - A new Challenge for the Combination of Quantitative and Qualitative Approaches”.

International competition in research and technology development has intensified remarkably during the last decade. Performance of the science producing system has to be surveyed and should become measurable. Research grants and programmes are allocated according to performance indicators. Excellence clusters are required to transfer inventions into innovation and emerging technologies have to be identified to ensure the international competitiveness of the industrial societies. The adequate application of indicators, their content specific development as well as the introduction and discussion of new indicators, are of vital importance in scientometrics.

Scientometric methods are well established in natural sciences and technology, however, their application to other fields such as Social Sciences and Humanities is obviously not clear defined. New data sources and different approaches have to be introduced to measure the quality and impact of research in these disciplines. At the same time, the availability of Open Access resources becomes more important and requires its own metric measurement.

The conference in Vienna raises the issues of excellence and emergence in science and opens the floor for the discussion about the topics mentioned above.

Additionally, two pre-conference workshops will focus on specific themes. One will discuss the quality and impact of Social Sciences, and the other one gives some detailed introduction into the BibTechMon methodology as powerful tool for science mapping.

Furthermore, we defined seven topics for the conference:

- Theme 1: Quantitative and qualitative approaches: a special focus in evaluation of the academic performance;
- Theme 2: S&T indicators for the identification of emerging fields;
- Theme 3: Disciplinary relevance of bibliometric indicators: Science and Technology, Social Sciences and Humanities;
- Theme 4: Interactions between Open Access initiatives and scientometrics;
- Theme 5: Visualisation and Science Mapping: tools, methods and applications;
- Theme 6: Accuracy and reliability of data sources for scientometric studies;
- Theme 7: Management and measurement of bibliometric data within scientific organisations.

Over 160 contributions were received after the call for papers. Following the tradition of the conference, the authors sent extended abstracts with up to 800 words. All contributions were evaluated by three reviewers of the International and Local Committees. Exactly 24 contributions were withdrawn by the authors or rejected during the review process. Finally 137 contributions were selected to be presented in the conference.

We used text mining, co-word analysis and science mapping to assign the reviewers' competences to the topics of the contributions. The same method was used to cluster accepted papers and posters to the respective sessions.

The programme includes 3 keynote speakers, 9 oral presentations in 3 plenary sessions and 63 other oral presentations distributed into 18 parallel sessions. In addition 62 posters will be shown in 2 consecutive sessions.

The book of abstracts comprises all extended abstracts of oral presentations and posters grouped according to their thematic sessions.

By organising the 10th International Conference on Science and Technology Indicators in Vienna we hope to promote scientometric and bibliometric activities in Austria and to recall their importance and indispensability in measuring science and technology.

On behalf of the Local Organising Committee and Organisers we want to thank Anthony van Raan for bringing the conference to Vienna, Henk Moed for his cooperation and support compiling the conference programme, all the contributors for their submissions, the members of the International Committee for reviewing as well as the sponsors for their generous financial support.

Edgar Schiebel
Conference Chair

Juan Gorraiz
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THE IMPACT OF SPANISH SOCIAL SCIENCES AS SEEN THROUGH THE SPANISH RESEARCH JOURNALS

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1 Introduction

Until relatively recently in Spain and in many other countries, it occurred the paradox that it was possible to know a lot of things about the research made by scientists or institutions in our country and published in international journals but little about what it was published in our own national journals. This situation was tolerable for the experimental sciences (including biomedicine) because of their strong integration into mainstream science, but it was a lot more serious for research in the social sciences as their main dissemination channel the national journals, which are not included in the “right” databases for their assessment (let us say WOS), as it has been pointed out many times BRAUN [2000], MOED [2005], STEELE [2006].

In the last five years, the pressure or the need to assess the scientific research produced by Spanish social science scientists has resulted in the launch of a database which makes it possible for the first time ever in Spanish science history to assess the impact of journals through citation counts using an approach inspired and comparable with the one used by WOS; similar events have occurred in other countries BIHUI JIN [1999], SPIKA [2005].

This database has been designed by the EC³ research group, “Evaluation of Science and Science Communication,” and is called “Índice de impacto de las revistas españolas de Ciencias Sociales (IN-RECS)” (Impact Index of Spanish Social Sciences Journals, in English). This database measures the national and international impact of papers published in Spanish journals as well as that of researchers, universities, etc. since 1994 up to 2006 and is regularly updated.

This database is open access and is available at <http://ec3.ugr.es/in-recs/>

This communication presents for the first time in an international forum the broad data of this database: categories used, number of journals, citations, papers, etc. as well as the results of three areas that seems to us specially relevant to ascertain some of the features of this collection of more than 900 journals

2 Methodology

The analyzed issues have been:

1. International visibility of different disciplines measured through the citations which come from international WOS journals since 1994 to 2006. Based on these data the ratio international/total citations of the journal and categories have been calculated.
2. General disciplines and journal impact trend as measured through the following indicators:
 - Maximum impact (understood as IF) of the categories throughout the time period analysed.
 - % of journal with an impact lower than 0,1 citation/paper in every category.
3. In the third place, percentages of self-citation per journal and author have been studied.

We believe that these indicators deliver a first picture of the characteristics and performance of the Spanish social science research which flows through the national channels.

3 Results

Main data and selected indicators are presented together in table 1

Table 1

	<i>Law</i>	<i>Pol Sci Soc.</i>	<i>Comm. Anthr.</i>	<i>Econ.</i>	<i>Learn.</i>	<i>Psych</i>	<i>Geog.</i>	<i>Urban St Inf Sci.</i>			
Source journals	65	7	11	5	5	27	27	26	11	6	7
Journals with an impact factor calculated	295	52	61	22	40	111	114	117	43	40	28
Citable papers	40567	12430	15114	2923	5939	40865	34315	19132	8733	14794	5979
Citations	11437	3702	4837	405	651	17729	9865	16261	2962	1734	1604
National citations	11391	3627	4430	400	335	16427	9494	13705	2673	1685	1254
International citation (WOS)	46	75	407	5	316	1302	371	2556	289	49	350
Average citation per paper	0,3	0,2	0,2	0,1	0,6	0,4	0,3	0,6	0,3	0,5	0,2
Percentage of cited paper	25,8	26	23,3	18,6	11,2	30,8	21,9	42,1	22,8	13,9	21,5

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Percentage of self citation: journals	20,7	20,3	20,3	45,7	18	18,1	34	31,9	24,3	37,8	29,4
Percentage of self citation: authors	7,8	9,2	14	15,9	8,3	11,2	21,1	23,7	17,7	12,4	9,3
Percentage of journals with $\leq 0,1$ citation	--	66	70	77	66	49	61	46	44	86	54

The main results drawn from the indicators shown in table 1 would be:

In connection with the international impact we can say that the whole impact of all Spanish publications in the Social Sciences between 1994 and 2006 comes down to 5766 citations and fluctuates between the most integrated disciplines such as Anthropology (0,48) or Information Science (0,22) and the least ones Law Studies which has zero visibility (0,004).

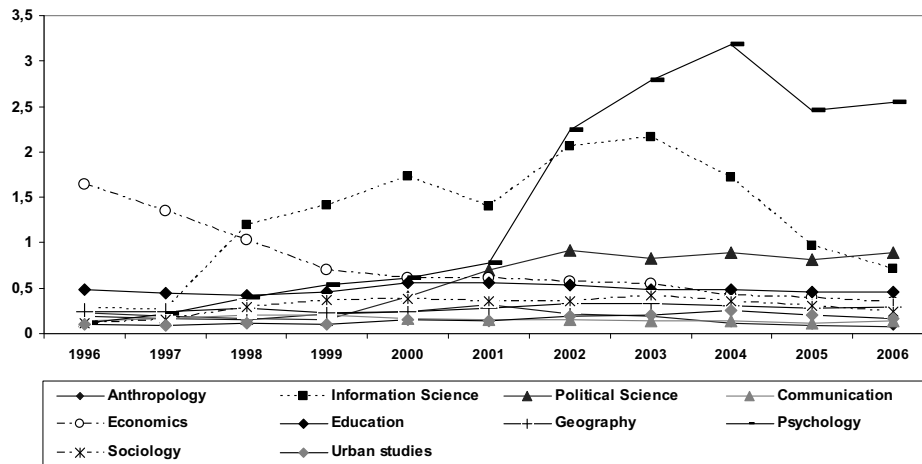
The percentages of self citations of journals are more similar between categories and oscillates between 45.7% in Communication and 18% in Economics and Anthropology; the average being $27,3 \pm 9,1$ representative of the population.

Lastly author self-citation swings between 7,8% in Law Studies and 23,7% in Psychology, with an average of $13,7 \pm 5,4$ representative of the population as well.

The citation average per published paper reveals one of the most worrying aspects of the Spanish Social Science research: There is a alarming amount of journals -- with percentages which go from 44% in the best cases to 86% in the worst cases -- which have an impact equal to 0. In other words, hundreds of journals and thousands of papers published in these journals have not received any citation at all since they were published. This can be sad for the paper authors but becomes a critical problem for the national scientific policy as regards the publication of these journals. In fact from the Spanish National Foundation for Science and Technology (FECYT) has launched a program designed to improve the visibility of our journals, providing technical help and electronic facilities.

The impact factor development of different categories is depicted in the following figure.

Figure 1 Highest impact factor development by categories



Relevant facts to be highlighted in this figure are as follows: The continuous decline of Economics versus the Psychology journals, the rise and fall traced by Information Science (due to the special circumstances of some journals), the steady increase of Political Science and finally the stability on a very low level of the rest.

The drop of Economics is a direct consequence of migration of authors to international journals; however, the same phenomenon has occurred in other disciplines such as Psychology and Information Science without affecting so negatively the path followed by their journals.

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Figure 2

