The application of Bibliometric Analysis
Disciplinary and User Aspects
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The application of bibliometric analysis: Disciplinary and user aspects

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Abstract

Bibliometric analysis (BA) has been used increasingly as a tool within the scientific community.

Interplay is vital between those involved in refining bibliometric methods and the recipients of this type of analysis.

Production as well as citations patterns reflect working methodologies in different disciplines within the specialized Library and Information Science (LIS) field, as well as in the non-specialist (non-LIS) professional field.

Background

Wallin (2005) described in great detail the pros and cons of using bibliometric methods for research evaluation.

The necessity of a discussion about the application of bibliometric methods was obvious in the research community already at an early stage (Glänzel 1996).

These authors noticed the methodological importance of establishing standards in bibliometrics.

The aim of the present investigation is to investigate the use of bibliometric analyses and methods in different fields and user groups.

Method

A corpus of articles that apply or study bibliometric analytical methods are extracted from the literature and used for further analysis.

In Web of Science

TS=((bibliometric* OR scientometric* OR webometric* OR altmetric* OR informetrics*)

Indexes: SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH.


DJL categories. Partly from Derrick(2012).

<table>
<thead>
<tr>
<th>Code</th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Analyses a field or topic</td>
</tr>
<tr>
<td>B</td>
<td>Analyse journals or databases</td>
</tr>
<tr>
<td>C</td>
<td>Analyse countries</td>
</tr>
<tr>
<td>D</td>
<td>Analyses a researcher, group or organisation</td>
</tr>
<tr>
<td>E</td>
<td>Analyses collaboration, networks or author behaviour</td>
</tr>
<tr>
<td>F</td>
<td>Analyses, develops, discusses or improves bibliometric indicators, methods, theory or law</td>
</tr>
<tr>
<td>G</td>
<td>Discusses policy implications, the merits (or not) of bibliometrics, peer review issues or evaluation systems</td>
</tr>
<tr>
<td>H</td>
<td>Analyses patents</td>
</tr>
</tbody>
</table>

Results

4637 articles were extracted in the non-LIS category and 4215 articles in the LIS category.


Relative number of articles on non-LIS bibliometric analysis. Most popular subjects. Red bars: Data normalised to the total number of articles on a subject.

The 200 most cited articles on bibliometric analysis 1964–2016. The figure shows the number of articles in characteristic DJL categories.

Non-LIS Bibliometric analysis. Most popular subjects. Relative incidence of publications in the ten ‘up-and-coming’ countries with most publications versus the ten Western countries with most publications

Western: USA, Spain, England, Germany, Netherlands, Italy, Canada, France, Belgium, Austria

‘Up-and-coming’: China, Brazil, India, Taiwan, South-Korea, South-Africa, Mexico, Iran, Malaysia, Chile

Non-LIS Bibliometric analysis. Most popular subjects. LIS fraction of all articles that cite articles on a given field.

Conclusions

- Papers in social science and business economics are analyzed more frequently by bibliometric methods. The opposite is true for science and medicine.
- ‘Up-and-coming’ countries don’t publish much in the field of Sociology and health related science.
- The amount of cross-referencing between the LIS and the non-LIS field is modest in publications outside their main categories of interest, i.e. discussions of various bibliometric issues or strict analyses of various topics.

References

3) Derrick, O., Jonkers, K., & Lewison, G. Characteristics of bibliometrics articles in library and information sciences (LIS) and other journals. In Proceedings, 17th international conference on science and technology indicators. STI, 2012 (pp. 449-551)