

Academic online resources : assessment & usage

Researchers, field activists in the
context of ***Bibliometric analyses***

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Problematics

- Issued from a basic model:
Web of Science (ISI)
- Dominating classical Model:
 - ✓ *(Social) Science Citation Index*
 - ✓ *Journal Citation Reports (JCR)*

Two types of alternative approaches

- Starting from Journals
 - ✓ Corpus of the *Journal Citation Reports* DB (JCR)
=> **Eigenfactor**
 - ✓ Corpus of the *Scopus* DB (Elsevier)
=> **SJR** (*Scimago Journal Rank*)
- Starting from Articles
 - ✓ Links generated by *Citebase* and *CiteseerX*
 - ✓ Numerous variants of the H-Index suggested by *Harzing Publish or Perish*

Two link-structured analysis models

« Two important types of techniques in link-structure analysis are co-citation based schemes, and random-walk based schemes » (*Lempel ; Soffer, 2002*)

- ✓ Co-citation
- ✓ Random Walk

Profile of the ISI Model

- Scope type: starting from Journals
 - ✓ **Serials** as *Document type* including Articles
 - ✓ *Journal Citation Reports* and its *Impact Factors*

Profile of the ISI Model

Approximate Definition

- Citation count is raw, « first ring » type
- Encompasses equally all citing publications issued from the global corpus of the *Journal Citation Reports*
- Whatever their intrinsic « quality » (?) and their disciplinary origin may be

Beyond the first ring

- Execution of the *Weighted Page Rank*, Lawrence Page's algorithm adapted to *Google*
- Simulating the steps of a researcher browsing the references cited by an article, consulting forwards other articles
- Random Walk protocol

Eigenfactor and SJR

- *Eigenfactor* of C.Bergstrom applied to *JCR + Scimago Journal Rank (SJR)*
- Iterative execution of the *Page Rank*
- Cartography of subject areas, traceability of the links
- Sequencing and linking between disciplines (STM / Soc Sci)

Eigenfactor and *SJR*

- Extended analysis, from 3 up to 5 years
- Automatic adjustment of means of citations inherent to each discipline
- Inspired by the distinction *Popular* vs. *Prestigious journals* of the Bollen's « *Journal Status* »

Preeminence of classical Journals

- *Eigenfactor* and *SJR* apply to corpuses giving priority to classical journals implying a subscription or a strong embargo
- On the contrary, co-citation networks conceptors refer to *Open Access* corpuses

Impact of OAI type Publications

- *Citebase* (Univ. Southampton, S.Harnad & T.Brody) and *CiteseerX* (Univ. Pennsylvania) suggest three citations levels:
 - ✓ References cited by a « parent » article
 - ✓ Shared references
 - ✓ References citing simultaneously the « parent » item and other items

Aftermath of co-citations

- Cartography of Subject Areas
- Amplification and optimal visibility generated by *Open Access*
- Disciplinary interlinking

Aftermath of co-citations

- Thin granularity, nominative, at least at the Lab level
- Setting aside the *popularity* of Journals, which are just globally anonymous document types
- Focusing on the actors of the research

Aftermath of co-citations

- Author, circumscribed in a Lab team, at a period p
- Lab team which may be included in one or several communities, appearing through graphs or maps
- Analogy with the *Research Front Maps* of ISI's *ScienceWatch*

Data about Research « actors »

- Moderate the raw effects of the basic H-Index. See chiefly *Harzing's* suggestions:
 - ✓ Consider articles positioned under the H level, improve on the H-index by giving more weight to recent articles, thus rewarding academics who maintain a steady level of activity.
 - ✓ Adjust the H according to the number of authors contributing to an article

Weighting factors

- According to disciplines, variation of
 - ✓ The mean citation rate
 - ✓ The mean annual number of publications
- Unawareness of the effective contribution of each author to a publication

Combination of both models

- Random walk

+

- Co-citation

- ✓ How to adapt an H to a *Hub*, a cluster of authors and publications ?
- ✓ How to dispatch that new H on a scale adapted to each author who contributes to its calculation ?

By way of conclusion: an hypothesis

- To be assessed:
 - ✓ Inside a node of international and transdisciplinary co-citations
 - ✓ Making reference to the OAI net of articles as such
 - ✓ And not to closed corpuses of journals

I.F., H and... Copernic

- Instead of being assessed
 - ✓ In the precinct of a research unit or of an institution
 - ✓ In relation to a journal as such
- Combine both alternative models
- For a copernician ®evolution of evaluation