
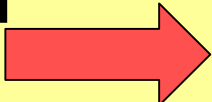

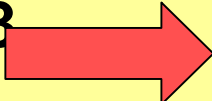


# **Citation Analysis in Research Evaluation**

**(Published by Springer, July 2005)**

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<b>Part No</b>	<b>Part Title</b>
<b>1</b> 	<b>General introduction and conclusions</b>
<b>2.1</b> 	<b>Assessing basic science research departments and scientific journals</b>
<b>2.2</b> 	<b>The ISI Citation Indexes</b>
<b>2.3</b> 	<b>Assessing social sciences and humanities</b>
<b>2.4</b>	<b>Accuracy aspects</b>
<b>2.5</b>	<b>Theoretical aspects</b>
<b>2.6</b>	<b>Citation analysis and peer review</b>
<b>2.7</b>	<b>Macro studies</b>
<b>2.8</b>	<b>New developments</b>

# Contents of this lecture

- 1. General assumptions and conclusions**
- 2. Use of citation analysis in social sciences and humanities**

# **1. General assumptions and conclusions**

## Main objective

- A firm political or societal basis for 'basic' science can be maintained only by further developing a system of internal **quality control** and **performance enhancement**
- This book aims at showing that citation analysis is a **useful tool** in such a system

## About the nature of the concept of scholarly research quality

- Research quality is **not merely** a social construct. It relates to a quality intrinsic to the research itself (**against constructivism**)
- On the other hand, the concept **cannot** be defined and measured in the same way as in physics (**against citationism**)

## **The use of citation analysis in research evaluation is more appropriate the more it is:**

- **Formal**
- **Open**
- **Scholarly founded**
- **Supplemented with expert knowledge**
- **Carried out in a clear policy context with clear objectives**
- **Stimulating users to explicitly state basic notions of scholarly quality**
- **Enlightening rather than formulaic**

# Citation Analysis and Peer Review

- A. Tools for **peers** to assess research quality of research groups in (basic) science**
- B. Tools for **policy makers** to assess peer review processes**
- C. Tools for **peers and policy makers** to address complex, general, global issues (macro/meta studies)**

## **2. Use of citation analysis in social sciences and humanities**

<b>AU</b>	Moed, HF; Garfield, E.	in
<b>TI</b>	In basic science the percentage of 'authoritative' references decreases as bibliographies become shorter	W
		O
		S
<b>SO</b>	<b>SCIENTOMETRICS</b> 60 (3): 295-303 2004	Y
<b>RF</b>	<u>ABT HA, J AM SOC INF SCI T, v 53, p 1106, 2004</u>	Y
	GARFIELD, E. <b>CITATION INDEXING</b> , 1979 (BOOK!)	N
	GARFIELD E, <b>ESSAYS INFORMATION S</b> , v 8, p 403, 1985	N
	<u>GILBERT GN, SOC STUDIES SCI, v 7, p 113, 1977</u>	Y
	<u>MERTON RK, ISIS, v 79, p 606, 1988</u>	Y
	<u>ROUSSEAU R, SCIENTOMETRICS, v 43, p 63, 1998</u>	Y
	<u>ZUCKERMAN H, SCIENTOMETRICS, v 12, p 329, 1987</u>	Y

## **An analysis of cited references provides insight into**

- **The structure of the scholarly/scientific communication system**
- **The extent to which it is covered by ISI source journals**
- **Provides a partial view “seen through ISI glasses”**

# ISI / WOS coverage by main field

<b>EXCELLENT (&gt; 80%)</b>	<b>VERY GOOD (60-80%)</b>	<b>GOOD(40-60%)</b>
<b>Biochem &amp; Mol Biol</b>	<b>Appl Phys &amp; Chem</b>	<b>Mathematics</b>
<b>Biol Sci ~ Humans</b>	<b>Biol Sci ~ Anim &amp; Plants</b>	<b>Economics</b>
<b>Chemistry</b>	<b>Psychol &amp; Psychiat</b>	<b>Engineering</b>
<b>Clin Medicine</b>	<b>Geosciences</b>	<b>MODERATE (&lt;40 %)</b>
<b>Physics &amp; Astron</b>	<b>Soc Sci ~ Medicine &amp; Health</b>	<b>Other Soc Sci</b>
		<b>Humanities &amp; Arts</b>

## Sub-disciplines (non-exhaustive list)

<b><i>Social sciences (primarily) related to medicine and health</i></b>	<b><i>Other social sciences</i></b>	<b><i>Humanities</i></b>
<b>Public environm &amp; occupat health Nursing Sport sciences Substance abuse</b>	<b>Sociology Anthropology Educational sciences Political science</b>	<b><u>Law</u> Literature Linguistics Historical sc Philosophy</b>

# 'ISI' and 'non-ISI' citation analysis

Cited/Target documents	Citing/Source documents	
	ISI covered	Non ISI covered
ISI covered	1. 'Pure', 'standard' ISI analysis	3. Source expanded non-ISI analysis
Non ISI covered	2. Target expanded non-ISI analysis	

## 4 Types of bibliometric studies

	ISI coverage	Cited/ Target	Citing/ Source	Field
1	Excellent – Very Good	ISI	ISI	Astronomy Chemistry
2	Very Good – Good	ISI+non ISI	ISI	Mathematics Economics
3	Good – Moderate	ISI+non ISI	ISI+non ISI	Computer Science
4	Moderate	No citation analysis at all		Law

## Science versus humanities (Price)

- Different substantive contents **ask for** different types of social organisation and information exchange
- **Science: Citation Index**
- **Humanities: Normal archival library**

## **Social sciences**

- **Social sciences constitute a heterogeneous domain, with both ‘science-like’ and ‘humanities-like’ orientations**
- **Even sub-disciplines may be heterogeneous (e.g., sociology)**

**‘Other’ social sciences (incl. sociology, political sc, educational sc) and humanities**

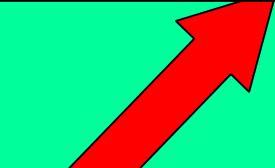
- **‘National publication model’**
- **Books** play an important role
- No global **core-periphery** journal structure
- SSCI+A&HCI have **moderate** coverage
- They contain **national** journals

## Indicator of a journal's national orientation (INO)

- The share of the papers from the country **most frequently** publishing in a journal
- A **purely** national journal would have an INO value of **100 per cent**

In 24 % of humanities journals one country accounts for over 90 % of papers

<i>Discipline</i>	<i>No. Journals</i>	<i>Median INO</i>	<i>% Journals with INO&gt;90%</i>
Physics & astronomy	260	37	10
Mol Biol & biochem	530	41	4
Humanities & arts	1,110	71	24
Other social sci	879	72	22



## **A valuable criterion of research quality in social sciences and humanities (?)**

**The extent to which research findings:**

- **reach beyond a **purely** national or local viewpoint**
- **and are exposed to criticisms from a **wide** international scholarly audience**

## **This book argues:**

- **It cannot be taken for granted** that the ISI Citation Indexes provide such indicators in **all** subfields of these domains of scholarship
- A challenge would be to **systematically** explore **alternative** data sources and methodologies

## **Relevant aspects of publication output in “qualitative” soc sci & humanities**

- **Knowledge transfer** from one cultural/linguistic domain to another
- **Diversity** in publication sources
- **Diversity in publication languages** within research departments

**END**