

## RQF Publication Quality Measures: Methodological Issues

John Lamp  
School of Information Systems  
Deakin University

Simon Milton  
Dept of Information Systems  
University of Melbourne

Julie Fisher, Linda Dawson  
Faculty of Information Technology  
Monash University



# RQF Guiding Principles

---

- The main measure of research quality

1. Citation measures:

- 1.1 Citations per publication listed in the Research Grouping's 'body of work';

- 1.2 The proportion of publications in the 'body of work' which have citations that would put them in the top decile for the discipline (to be derived from Thomson Scientific (ISI) citation benchmarks); "

# Thomson-ISI measures quality?

---

- ❑ Basis for selection and impact factor established by Dr Eugene Garfield in 1950s
- ❑ Only the high quality journals make it on to their list?
- ❑ That would be why DEST is using it?
- ❑ Right?
  
- ❑ Wrong!
- ❑ There is nothing in the Thomson-ISI approach which deals directly with quality
- ❑ 'to provide comprehensive coverage of the world's most important and influential research'

# Pertinent questions

---

- Why Thomson-ISI?
  - Pragmatic decision based on cost
- Do the Thomson-ISI measures adequately address the RQF needs for IS?
  - Thomson-ISI journal selection based on Bradford's law
  - What is Bradford's Law actually about?
  - Is Bradford's Law appropriate for IS?

# Why look at Bradford's Law now?

---

- Based on observations made in 1934
  - Single dominant form of publishing
    - Paper journal from university or publishing house
    - Estimated to be 15,000 journals
- In 2007
  - Many forms of publishing
    - Different business models
      - Open access (~3,000 journals in DOAJ)
      - On-line repositories
  - Publishing not restricted to universities or traditional publishing houses

# What is Bradford's Law?

---

- "if scientific journals are arranged in order of decreasing productivity of articles on a given subject, they may be divided into a nucleus of periodicals more particularly devoted to the subject and several groups or zones containing the same number of articles as the nucleus, when the number of periodicals in the nucleus and succeeding zones will be  $1:n:n^2 \dots$ ."

# What is Bradford's Law?

---

- Bradford looked at two small sub-disciplines;
- It is a scattering distribution
  - Bradford was interested in the distribution of publications, not quality
  - Bradford's motivation was to develop a case for indexing inclusively, not to exclude publications, with an aim of creating a "complete index to scientific literature."

# What is Bradford's Law?

---

- Leimkuhler expressed it as

$$G(r) = k \ln(1 + br)$$

- $G(r)$  is the cumulated total of papers in the first  $r$  of ranked journals
  - $b$  and  $k$  are parameters evaluated from the data
- Similarities seen to Lotka's Law and Zipf's Law
- Bookstein and Burrell established Bradford's Law as a special case of the Gini index
  - Used since early C20 by econometricians as a measure of concentration
- Quality is not a parameter or outcome

# Bradford's Law and IS

---

- IS is a young cross disciplinary domain
  - How valid are 1934 or 1950s assumptions?
  - “If the topic is so widely dispersed or too novel yet to have attracted a journal ‘more particularly devoted’ to it, we need not expect to find a nucleus in its bibliography” – Brookes
- No work has yet demonstrated whether or not IS has a nucleus

# A brief diversion



[Index Home](#)

[For Authors](#)

List IS Journals whose title starts with:

[\[A\]](#) [\[B\]](#) [\[C\]](#) [\[D\]](#)  
[\[E\]](#) [\[F\]](#) [\[G\]](#) [\[H\]](#)  
[\[I\]](#) [\[J\]](#) [\[K\]](#) [\[L\]](#)  
[\[M\]](#) [\[N\]](#) [\[O\]](#) [\[P\]](#)  
[\[Q\]](#) [\[R\]](#) [\[S\]](#) [\[T\]](#)  
[\[U\]](#) [\[V\]](#) [\[W\]](#) [\[X\]](#)  
[\[Y\]](#) [\[Z\]](#)

[Search Index](#)

[List all IS Journals](#)

[For Readers](#)

[Institutional holdings of IS Journals](#)

[Statistics](#)

[General Statistics](#)  
[Journal Popularity](#)

[Suggest a journal for the Index](#)

Published by Deakin University, Geelong, Victoria 3217, Australia  
ISBN: 0 7300 2626 4

## The Index of Information Systems Journals

The aim of this publication is to provide basic information about, and links to, either paper or electronic journal web sites, and more particularly, to provide links to their instructions to authors information.

At present the Index contains information on 601 IS journals, of which 552 are still active.

Journals are listed alphabetically by title, disregarding 'The', 'Journal of', 'The Journal of', 'The International Journal of' or 'The Electronic Journal of'.

**The comments against each journal have been taken from the journal or its web site, and are not the opinion of the editor of this resource.**

Any information, especially about new, moved or broken links, would be appreciated. Please email them to me at the address below.

The listings have information codes associated with them.

- ◆ **Open Access** or **Subscription** (which shows whether articles are able to be accessed without subscription.)
- ◆ **DEST** (which shows it is recorded on the now closed [Australian Government](#) register as a refereed journal)
- ◆ **ISI** (which shows it is registered on the [ISI journals database](#))
- ◆ **ULRICH'S** (which shows it is refereed according to [Ulrich's Periodicals Directory](#))
- ◆ paper, CD-ROM, e-journal (which shows media type and takes you to information on the journal)
- ◆ instructions (which takes you to instructions to authors)

If you use this publication in your research, please cite it as:

Lamp, J. W. (2004). *Index of Information Systems Journals*. Geelong, Deakin University. [Online] Available: <http://lamp.infosys.deakin.edu.au/journals/>  
Export Citation: [RIS](#) | [Bibtex](#)

## Related IS Journal Resources

- ◆ [Categorising Information Systems Journals](#)
- ◆ [Citing Electronic References](#)
- ◆ [Directory of Open Access Journals](#)
- ◆ [ISBIB: The IS Bibliographic Repository](#)
- ◆ [IS Journal Ranking and Analysis](#)
- ◆ [ISWorld Publications Database \(Journals, Proceedings etc\)](#)
- ◆ [MISQ Keyword Classification Scheme for IS Research](#) (Abandoned by MISQ Dec 2003)
- ◆ [Scholarly Electronic Publishing Resources](#)

This publication is edited by [John Lamp](#) who can be reached at [John.Lamp@deakin.edu.au](mailto:John.Lamp@deakin.edu.au). This page was last updated on 22 May 2006. Individual entries were updated on the date shown against the entry. Although I will attempt to keep this information accurate, I can not guarantee the accuracy of the information provided. [Copyright](#) and [Privacy](#) information

# Back to Thomson-ISI

---

- Impact factor has been widely criticised:
  - optimized for biomedical sciences, work less well in other fields
  - can be manipulated by, e.g., self-citation
  - overused, misused and over-interpreted
  - is an average for a journal; provides no insight into individual articles
  - formula is flawed; two-year time window too short for most fields
  - can only be used for comparing journals within a field
  - underrates high-quality niche journals
  - does not cover all fields of scholarship
  - time-lag before impact factors are calculated and reported; new journals have no impact factor
  - reflect only “author” use of journals, not other groups, such as students
  - impact factor has a monopoly of comparable, quantitative journal measures
  - reinforces the position of existing, dominant journals
  - ISI categories are not appropriate and neglect smaller, significant fields.

# Impact <> quality

---

- Circularity in the impact factor/quality equivalence argument
  - “These are the only journals to publish in because they have an impact factor, we therefore cite ourselves to improve our impact factor in the journals that have an impact factor!”
- Reason for the citation of particular works.
  - Fleischmann’s et al (1989) paper on “cold fusion” has been cited over 500 times but rarely in a positive sense.

# Eugene Garfield says

---

- “It is one thing to use impact factors to compare journals and quite another to use them to compare individual authors. Journal impact factors generally involve relatively large populations of articles and citations. Individual authors, on average, produce much smaller numbers of articles.”

# Other measures

---

- Field normalised impact factor
- Web based metrics
- Reader focused measures
  - Usage impact factor
  - Usage immediacy index
  - Usage half life

# Serious unanswered questions

---

- ❑ Do the Thomson-ISI measures adequately address the needs of the RQF?
- ❑ Does the Information Systems discipline display a nucleus as predicted by Bradford's law?
- ❑ How does the size of the Information Systems discipline affect impact factor calculations?
- ❑ How does the youth of the Information Systems discipline affect impact factor calculations?
- ❑ How does the multi-disciplinary nature of the Information Systems discipline affect impact factor calculations?
- ❑ How does the time over which impact factors are calculated affect the Information Systems discipline?
- ❑ Can any relationship be found between the impact factor of Information Systems journals and quality?
- ❑ Can any relationship be found between the impact of a research group's output and the impact factor of the journals in which they publish?
- ❑ Are there other better measures which can be put in place?

# Future work

---

- Basis for an ARC (linkage?) grant
  
- Any questions?