



# *Moving Beyond Citation Analysis*

*by Mark Hangartner*

## **ANZTLA 2011 Conference Mark Hangartner Moving beyond citation analysis**

- **Overview of the PBRF process in NZ**
- **Assisting with research portfolios**
- **Use of bibliometric data e.g. Citation analysis**
- **Example from the University of Auckland :**
  - Research Outputs –a system used to record and manage Publications, Creative Works, and Professional Activities like Peer Esteem (PE) and Contributions to the Research Environment (CRE).





## Performance Based Research Fund (PBRF)

The Performance Based Research Fund (PBRF) is an assessment of tertiary institutions aimed at encouraging and rewarding excellence in research, helping to ensure a high quality of research output.

### **PBRF and The University of Auckland**

What is PBRF? The importance of PBRF to the University and the University's 2006 results and future goals.

### **Evidence portfolios and the quality evaluation process**

Information about the three components of an Evidence Portfolio and the assessment process undertaken by the review panels.

### **PBRF quality categories and scoring**

Find an explanation of the PBRF quality categories, who has access to your quality category, and the appeals process.

### **Writing 'my contribution' and 'commentary' for nominated research outputs (NROs)**

Guidelines and examples to assist in writing the NRO 'my contribution' and 'commentary' sections of your PBRF evidence portfolio.

### **PBRF Frequently Asked Questions (FAQs)**

PBRF FAQs from the 2010 information sessions

### **What researchers need to know and do**

An overview of PBRF eligibility, new and emerging researchers, evidence portfolios and PBRF faculty contacts.

### **Evidence Portfolio examples**

Evidence portfolio examples from the 2003 and 2006 PBRF quality evaluation, to provide assistance in preparing your 2012 evidence portfolio.

### **PBRF Information Session Recordings**

Find out what PBRF is all about by accessing the PBRF Essentials recordings.

### **Writing the Other Comments narrative**

Guidelines and examples to assist in writing the 'other comments' section of your PBRF evidence portfolio.

### **Faculty success with PBRF and FRDF**

Success stories from University of Auckland researchers whose work has been assisted by the FRDF.

## Citation analysis - research support

Overview of this presentation :

- what citation analysis is
- some tools we use
- helping academics with evidence portfolios
- maintaining a database for the institution.

## What is citation analysis?

It starts with a piece of academic work  
e.g. an article

### Benchmarking Google Scholar with the New Zealand PBRF research assessment exercise

Alastair G Smith  
School of Information Management  
Victoria University of Wellington  
New Zealand  
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**Abstract**  
Google Scholar was used to generate citation counts to the web-based research output of New Zealand Universities. Total citations and hits from Google Scholar correlated

It gets cited in an indexed publication e.g. a journal in a citation index

References: 1 - 1 of 1

Select	Cited Author	Cited Work (SHOW EXPANDED TITLES)	Year	Volume	Page	Article ID	Citing Articles **	View Record
<input type="checkbox"/>	SMITH AG	SCIENTOMETRICS	2008	74	309	DOI 10.1007/s11192-008-0219-0	12	<a href="#">View Record</a>

Restrict results by any or all of the options below.

Publication Type	Language
<input type="checkbox"/> Article <input type="checkbox"/> Art Exhibit Review <input type="checkbox"/> Bibliography	<input type="checkbox"/> All Languages <input type="checkbox"/> English <input type="checkbox"/> Afrikaans <input type="checkbox"/> Arabic

Count the number of times it is cited ...

#### Benchmarking Google Scholar with the New Zealand PBRF research assessment exercise

[Find Full Text](#) [Print](#) [E-mail](#) [Add to Marked List](#) [Save to EndNote Web](#) [Save to EndNote RefMan File](#)

**Author(s):** Smith AG (Smith, Alastair G.)

**Source:** SCIENTOMETRICS **Volume:** 74 **Issue:** 2 **Pages:** 309-316 **Published:** FEB 2008

**Times Cited:** 12 **References:** 16 [Citation Map](#)

**Abstract:** Google Scholar was used to generate citation counts to the web-based research output of New Zealand Universities. Total citations and hits from Google Scholar correlated with the research measured by the official New Zealand Performance-Based Research Fund (PBRF) exercise. The article discusses the use of Google Scholar as a cybermetric tool and methodology issues in obtaining it for institutions. Google Scholar is compared with other tools that provide web citation data. Web of Science, SCOPUS, and the Wolverhampton Cybermetric Crawler.

**Document Type:** Article

**Language:** English

**Reprint Address:** Smith, AG (reprint author), Victoria Univ Wellington, Sch Informal Management, POB 600, Wellington, New Zealand

**Addresses:**  
1, Victoria Univ Wellington, Sch Informal Management, Wellington, New Zealand

**E-mail Addresses:** alastair.smith@vuw.ac.nz

**Publisher:** SPRINGER, VAN GODEWIJCKSTRAAT 30, 3311 GZ DORDRECHT, NETHERLANDS

**Subject Category:** Computer Science, Interdisciplinary Applications, Information Science & Library Science

**IDS Number:** 2570N

**ISSN:** 0138-9130

**DOI:** 10.1007/s11192-008-0219-0

... and by whom ... and when.

Citing Articles

Title: Benchmarking Google Scholar with the New Zealand PBRF research assessment exercise  
 Author(s): Smith, AG  
 Source: SCIENTOMETRICS Volume: 74 Issue: 2 Pages: 309-316 Published: FEB 2008  
[Citation Map](#)

The above article has been cited by the articles listed below.  
 Note: The Times Cited count is calculated across all Web of Science editions. More Information.

Results: 12 Page 1 of 2

Print E-mail Add to Marked List Save to EndNote Web Save to EndNote, RefMan, ProCite more options

**Refine Results**

Search within results for

**Subject Areas**

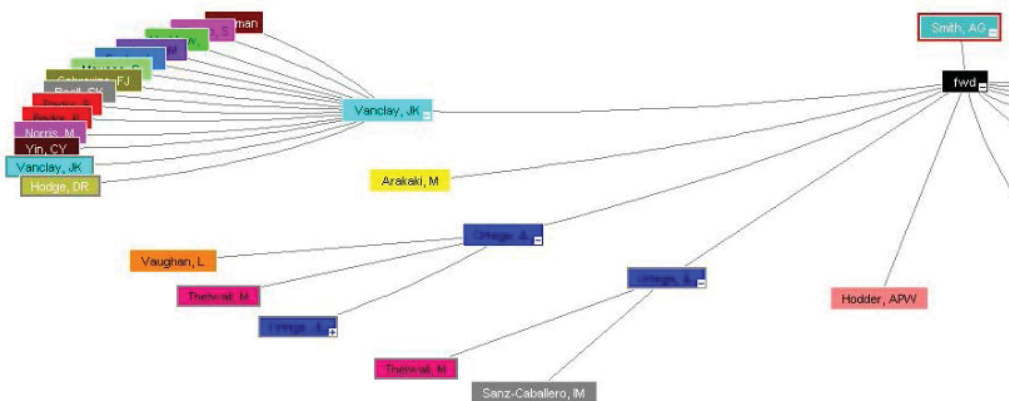
- INFORMATION SCIENCE & LIBRARY SCIENCE (8)
- COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS (4)
- COMPUTER SCIENCE, INFORMATION SYSTEMS (2)
- EDUCATION & EDUCATIONAL RESEARCH (1)
- INDUSTRIAL RELATIONS & LABOR (1)

**Document Types**

- ARTICLE (12)

- Title: The Contributions of Human Resource Development Research Across Disciplines: A Citation and Content Analysis  
 Author(s): Jaung CW, Yoon HJ, Park S, et al.  
 Source: HUMAN RESOURCE DEVELOPMENT QUARTERLY Volume: 22 Issue: 1 Pages: 87-109 Published: SPR 2011  
 Times Cited: 0
- Title: Evaluating Journal Quality: Is the H-Index a Better Measure Than Impact Factors?  
 Author(s): Hodge DR, Lacasse JR  
 Source: RESEARCH ON SOCIAL WORK PRACTICE Volume: 21 Issue: 2 Pages: 222-230 Published: MAR 2011  
 Times Cited: 0
- Title: Using Google Scholar to Estimate the Impact of Journal Articles in Education  
 Author(s): van Aalst J  
 Source: EDUCATIONAL RESEARCHER Volume: 39 Issue: 5 Pages: 387-400 Published: JUN-JUL 2010  
 Times Cited: 1
- Title: Comparative Analysis Between Impact Factor and h-Index for Reproduction Biology Journals  
 Author(s): Han WD, Yu Q, Wang YL  
 Source: JOURNAL OF ANIMAL AND VETERINARY ADVANCES Volume: 9 Issue: 11 Pages: 1552-1555 Published: 2010  
 Times Cited: 0

Get a picture of who is citing this work on a citation map



This helps identify a kind of trail or "web" of research, you can look in detail at one strand

The screenshot shows a metadata box for an article. The text inside the box is as follows:

- Title: Webometrics: emergent or doomed?
- Authors: Thelwall, M
- Journal title: INFORMATION RESEARCH-AN INTERNATIONAL ELECTRONIC JOURNAL
- Volume: 15
- Page: -
- Publish year: 2010
- Article #: ARTN collis713
- Document type: Proceedings Paper
- Subject category: INFORMATION SCIENCE & LIBRARY SCIENCE
- Language: English
- Country: England
- Institution: Wolverhampton Univ

Red callout boxes labeled 'Thelwall, M' point to the author field and the author's name in the title.

## Journal Citation Reports

we look at the citing record for other articles published in the same journal

The screenshot displays the JCR interface for the journal SCIENTOMETRICS. At the top, it says 'Journal: SCIENTOMETRICS' and '2009 JCR Science Edition'. Below this is a table with the following columns: Mark, Journal Title, ISSN, Total Cites, Impact Factor, 5-Year Impact Factor, Immediacy Index, Citable Items, Cited Half-life, and Citing Half-life. The row for SCIENTOMETRICS shows: ISSN 0138-9130, Total Cites 3508, Impact Factor 2.167, 5-Year Impact Factor 2.793, Immediacy Index 0.328, Citable Items 189, Cited Half-life 5.2, and Citing Half-life 2.5.

Below the table are buttons for 'CITED JOURNAL DATA', 'CITING JOURNAL DATA', 'IMPACT FACTOR TRENDS', and 'RELATED JOURNALS'. The 'Journal Information' section includes:

- Full Journal Title: SCIENTOMETRICS
- ISO Abbrev. Title: Scientometrics
- JCR Abbrev. Title: SCIENTOMETRICS
- ISSN: 0138-9130
- Issues/Year: 12
- Language: ENGLISH
- Journal Country/Territory: NETHERLANDS
- Publisher: SPRINGER
- Publisher Address: VAN GODEWIJCKSTRAAT 30, 3311 GZ DORDRECHT, NETHERLANDS
- Subject Categories: COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS

On the right, the 'Eigenfactor™ Metrics' section shows:

- Eigenfactor™ Score: 0.00752
- Article Influence™ Score: 0.608

Additional links include 'GO TO OURSERS' and 'GO TO CC CONNECT'.

## The Impact Factor and how to calculate it

Journal Impact Factor (JIF)	
Cites in 2009 to items published in: 2008 = 255	Number of items published in: 2008 = 128
2007 = 302	2007 = 128
Sum: 557	Sum: 257
Calculation: $\frac{\text{Cites to recent items}}{\text{Number of recent items}} = \frac{557}{257} = 2.167$	
5-Year Journal Impact Factor (JIF)	
Cites in (2009) to items published in: 2008 = 255	Number of items published in: 2008 = 128
2007 = 302	2007 = 128
2006 = 555	2006 = 136
2005 = 200	2005 = 112
2004 = 257	2004 = 89
Sum: 1605	Sum: 594
Calculation: $\frac{\text{Cites to recent items}}{\text{Number of recent items}} = \frac{1605}{594} = 2.703$	
Journal Self Cites (JSC)	
The tables show the contribution of the journal's self cites to its impact factor. This information is also represented in the <a href="#">jifsc journal graph</a> .	
Total Cites: 557	Self Cites: 182 (32% of 557)
Cites to Years Used in Impact Factor Calculation: 557	Self Cites to Years Used in Impact Factor Calculation: 145 (26% of 557)
Impact Factor: 2.167	Impact Factor without Self Cites: 1.603
Journal Immediacy Index (JII)	
Cites in 2009 to items published in 2009 = 52	
Number of items published in 2009 = 109	
Calculation: $\frac{\text{Cites to current items}}{\text{Number of current items}} = \frac{52}{109} = 0.478$	
Journal Cited Half-Life (JCHL)	
The cited half-life for the journal is the median age of its items cited in the current JCR year. Half of the citations to the journal are to items published within the cited half-life. Cited Half-Life: 6.7 years.	
Breakdown of the citations to the journal by the cumulative percent of 2009 cites to items published in the following years:	
Cited Year	2009 2008 2007 2006 2005 2004 2003 2002 2001 2000 1999-all
# Cites from 2009	52 255 302 555 200 257 274 174 200 121 3071
Cumulative %	1.77 9.04 17.65 33.47 41.73 49.08 55.30 60.26 65.06 69.47 100

# Context is everything

Rank in Category: **SCIENTOMETRICS**

### Journal Ranking <sup>i</sup>

For **2009**, the journal **SCIENTOMETRICS** has an Impact Factor of **2.167**.

This table shows the ranking of this journal in its subject categories based on Impact Factor.

Category Name	Total Journals in Category	Journal Rank in Category	Quartile in Category
COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS	95	18	Q1

## Searching in Google Scholar

make sure you try different citation styles

Your search - **Smith, Alastair**: "Benchmarking Google Scholar with the New Zealand PBRF Research Assessment Exercise." *Scientometrics* 74, no. 2 (2008): 309-16 - did not match any articles.

### Suggestions:

Make sure all words are spelled correctly.  
Try different keywords.  
Try more general keywords.  
Try fewer keywords.  
[Try your query on the entire web](#)

first using Chicago ... then APA

[Benchmarking Google Scholar with the New Zealand PBRF research assessment exercise](#)

[\[PDF\] from vuw.ac.nz](#)

AG Smith - *Scientometrics*, 2008 - [akademai.com](#)  
... Google Scholar as a cybermetric tool. Page 2. AG SMITH: Benchmarking Google Scholar with the New Zealand PBRF research assessment exercise 310  
*Scientometrics* 74 (2008) A number of researchers (for example ...

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## Google scholar results

[\[PDF\] Google Scholar-a new data source for citation analysis](#)

[\[PDF\] from telecom-paristech.fr](#)

AW Harzing - *University of Melbourne*, 2007 - [perso.telecom-paristech.fr](#)  
Page 1. Google Scholar - a new data source for citation analysis Prof. Anne-Wil Harzing, University of Melbourne Web: [www.harzing.com](#) Email: [pop@harzing.com](#) © Copyright 2007 Anne-Wil Harzing. All rights reserved. Document link: [http://www.harzing.com/pop\\_gs.htm](#) ...  
[Cited by 20](#) - [Related articles](#) - [View as HTML](#) - [All 3 versions](#)

[Ranking forestry journals using the h-index](#)

[\[PDF\] from arxiv.org](#)

JK Vancly - *Journal of informetrics*, 2008 - [Elsevier](#)  
The Thomson Scientific (TS) Journal Impact Factor (JIF; Garfield, 1955) has been the dominant measure of journal impact, and is often used to rank journals and gauge relative importance, despite several recognised limitations (Dellavalle, Schilling, Rodriguez, Van de Sompel, ...  
[Cited by 20](#) - [Related articles](#) - [All 12 versions](#)

[The rate of growth in scientific publication and the decline in coverage provided by Science Citation Index](#)

[\[HTML\] from nih.gov](#)

PO Larsen... - *Scientometrics*, 2010 - [akademai.com](#)  
Abstract The growth rate of scientific publication has been studied from 1907 to 2007 using available data from a number of literature databases, including Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Traditional scientific publishing, that is publication in peer- ...  
[Cited by 10](#) - [Related articles](#) - [All 8 versions](#)

### Mini Summary

- Evidence portfolio increasingly important
- Citation tools e.g. Web of Science & Google scholar can help

## Research outputs

institutions need to  
keep these records  
as well as academics

an example from Auckland

Summaries for Professor Elaine M Wainwright			
Publications			
		Approved	Pending
<a href="#">Journal articles</a>	Add new <a href="#">journal article</a>	30	0
<a href="#">Conferences</a>	Add new <a href="#">conference</a>	42	0
Posters	Add new <a href="#">poster</a>	0	0
<a href="#">Chapters</a>	Add new <a href="#">chapter</a>	32	0
<a href="#">Books</a>	Add new <a href="#">book</a>	7	0
Reports	Add new <a href="#">report</a>	0	0
Scholarly editions	Add new <a href="#">scholarly</a>	0	0



Professional activities

		Total
<a href="#">Prizes and Awards (PE)</a>	Add new <a href="#">prize or award (PE)</a>	1
<a href="#">Fellow/Memberships (PE)</a>	Add new <a href="#">fellow/membership (PE)</a>	2
<a href="#">Editorial/refereeing (PE)</a>	Add new <a href="#">editorial/refereeing (PE)</a>	7
<a href="#">Conference addresses (PE)</a>	Add new <a href="#">conference address (PE)</a>	9
<a href="#">Favourable reviews (PE)</a>	Add new <a href="#">favourable review (PE)</a>	9
<a href="#">Appointments (PE)</a>	Add new <a href="#">appointment (PE)</a>	0
<a href="#">Student factors (PE)</a>	Add new <a href="#">student factor (PE)</a>	1
<a href="#">Favourable citations (PE)</a>	Add new <a href="#">favourable citation (PE)</a>	9
<a href="#">Others (PE)</a>	Add new <a href="#">other (PE)</a>	17

Journal article [Add manual record](#) [View details](#)

Summary Auckland users (1) History (0) Data sources (2) Full text  Relationships (1)

[Find Full Text](#) [doi](#) **READING THE GOSPEL OF MATTHEW WITHIN THE GLOBAL CONTEXT: A RESPONSE**  
Wainwright EM  
HTS TEOL STUD-THEOL 65(1): Article number 322 2009  
Reporting date: 01 Jan 2009 [Edit](#)  
Citations: 0 (Web of Science); 0 (Scopus)

Data sources

Web of Science

ID: 000276644300078  
Sub types: Article  
Title: READING THE GOSPEL OF MATTHEW WITHIN THE GLOBAL CONTEXT: A RESPONSE  
Authors: Wainwright EM  
Journal: HTS TEOL STUD-THEOL  
Volume: 65  
Issue: 1  
Article number: 322  
Pagination:  
Abstract: This article responds to the diversity of approaches in the five papers presented at the Matthew Section of the Society of Biblical Literature, held in Boston (Massachusetts), 21-25 November 2008. This response focuses on an overarching question: what does it mean to read Matthew in a global context? It considers two key areas. The first is location and voice/language and the second, the hermeneutics and methodologies employed and how these enabled John Y.H. Yieh (Virginia Theological Seminary), Andries van Aarde (University of Pretoria), Dorothy Jean Weaver (Eastern Mennonite Seminary), Laura Anderson (Graduate Theological Union, Berkeley) and Lidja Novakovic (Baylor University, Waco) to read Matthew within a global context.  
Publisher: UNIV PRETORIA HTS  
Publication date: 2009  
DOI: 10.4102/hts.v65i1.322  
ISSN: 0259-9422

Create your own database?  
store the record of your institution's research output.

**pros?** adds value for your institution.  
librarians have skills in describing  
builds on existing ARI work  
encourages collaboration with researchers

someone else is doing it      **cons**  
lack of time  
not important  
lack of skills

## Some considerations

- Do you include non academic work e.g. sermons
- Do you keep the fulltext?
- Include student work?
- Do you keep alumni research
- Would you collaborate with other ANZTLA members?