

Literature Tools

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Bibliometrics and Reference Management

Bibliometrics

Measures of Academic Literature

Bibliometrics

- ▶ Journal metrics
- ▶ Article metrics
- ▶ Alternative metrics (Altmetrics)
- ▶ Researcher metrics

Bibliometrics Usage

- ▶ Funding
- ▶ CV: Employment, Promotions
- ▶ Publishing Strategy
- ▶ Focus Literature Search
- ▶ Disseminate Own Research
 - ▶ Journal Rank
 - ▶ Impact/wide audience
 - ▶ What colleagues read

Measuring Research (Library Guide)

► <http://otago.libguides.com.ereserve.otago.ac.nz/c.php?g=171510&p=1131171>

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Measuring Research: Introduction

Enter Search Words

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Using this guide

This guide directs you to the key tools for measuring your research impact:

- when deciding where to publish
- when applying for funding
- when applying for promotion
- when applying for a position
- for writing bursary applications
- when comparing research performance
- benchmarking institutions or researchers
- seeking collaborative opportunities
- used during PBRF



Image: flickr.com

Try your relevant Divisional tab. If you are part of a multidisciplinary team or work across Divisions, dip into as many tabs as you think might be helpful.

Additional tabs direct you to short [Tips & Guides](#) (many produced specifically for Otago researchers), [Readings](#) (articles and websites) and also [Feedback](#).

If you have any questions, contact your [Subject Librarian](#). They will be very happy to help!

SciVal - powerful NEW product to assess research performance! From Dec 2014

SciVal allows you to assess research performance by country, institution, research groups and individuals.

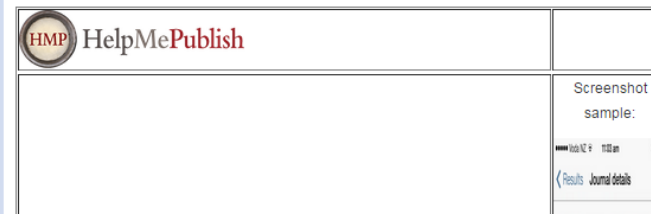
- Visualise research performance - by research area, publications, citations, collaboration, and competencies
- Benchmark your progress with key metrics - create and compare researchers, research groups and institutions
- Locate collaborative partnerships and mentors - analyse existing and potential opportunities
- Identify research strengths and shortcomings at institutional level

Contact your [Subject Librarian](#) now for access to, and support with this powerful research impact product, whether you are working in management or research, or updating your research profile.

Support tools:

- [SciVal Metrics Guidebook](#)
- [Factsheet](#)
- [FAQs](#)
- Quick-start demo videos - [Overview \(3:41\)](#); [Benchmarking \(3:16\)](#)

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Measuring Research (Library Guide)

► <http://otago.libguides.com.ereserve.otago.ac.nz/c.php?g=171510&p=1131171>

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Measuring Research: Sciences

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Measuring Research in the Sciences

Resources and tools for Sciences researchers are grouped into the following four categories:

- [Journal Metrics](#)
Finding journal impact factors, rankings, and other citation-related journal metrics.
- [Author Metrics](#)
Finding your h-index and seeing which authors and journals are citing your work.
- [Researcher Profiles](#)
Identifying yourself unambiguously and making your work more visible to fellow scholars.
- [Altmetrics](#)
Finding impact evidence beyond citations and showing the attention your work is receiving by academic and public audiences.

Support

Each department in the Division of Sciences has a designated Subject Librarian who can advise on the tools and resources contained in this guide.

For more information, please contact your [Subject Librarian](#):

- melanie.remy@otago.ac.nz
 - Food Science, Human Nutrition, and Microbiology & Immunology
- justin.farquhar@otago.ac.nz
 - Geography, Mathematics & Statistics, Physics, Psychology, and Surveying
- alexander.ritchie@otago.ac.nz
 - Botany, Geology, Marine Science, and Zoology
- lynne.knapp@otago.ac.nz
 - Applied Sciences, Chemistry, and School of Physical Education, Sport and Exercise Sciences

Journal Metrics

- ▶ Impact Factor (Reuters, 1955)
 - ▶ Established measure of journal impact, dominant in academia (until recently)
 - ▶ Based on Web of Science: Journal Citation Reports (JCR)
 - ▶ Average No. Citations (over last 2 years)
 - ▶ Ranking/quartile (subject by IF) depends on field
 - ▶ <http://admin-apps.webofknowledge.com.ereserve.otago.ac.nz/JCR/JCR>
- ▶ Scopus
 - ▶ Competing 'contextual' alternative (adjusted by field)
 - ▶ Based on Science Direct (bigger, more recent)
 - ▶ Scimago JR (SJR) Rank
 - ▶ IPP raw impact / publication
 - ▶ SNIP subject normalised impact / publication (over last 3 years)
 - ▶ <http://www.scimagojr.com/> (Journal Rank, Compare Journals)
- ▶ Measure quality of journals, find papers of general interest (e.g, Journal Club)



Metrics

Scopus



▶ Article metrics

▶ Citation

- ▶ Used for Journal Impact Factor
- ▶ Measure of peer esteem, influence, validation
- ▶ Supported by Web of Science (Reuters), Scopus (Elsevier), and Google Scholar (not reliable db)

▶ Altmetrics

▶ Researcher metrics

▶ Number of publications/citations

▶ h-index

- ▶ number of papers (N) with at least N citations each
- ▶ Depends on database and names published under (use one consistently)

▶ Researcher IDs

- ▶ Databases have different researcher IDs: WoS Researcher ID, Scopus Author ID, Otago MyResearch
- ▶ Integrated with Open Researcher and Contributor ID (ORCID)



Bibliometrics - Caveats

- ▶ Self-citation (journal/researcher/group)
- ▶ Retraction
- ▶ Journal impact is an average (most papers not cited)
- ▶ Citation is not always quality or application (could be critique or controversy)
- ▶ Research takes time for impact (older articles have more citations)
- ▶ Highly cited papers may not be applied or well viewed in the future
- ▶ Requires indexing in a database (database-specific)
- ▶ Change over time

Bibliometrics - Caveats

- ▶ Journal Ranking depends on database and field selection
 - ▶ Still need to think about relevance to field, e.g, is *Bioinformatics* a good statistics journal?
- ▶ Competing companies with similar products
 - ▶ In practice researchers just use which metric makes them look better
- ▶ Established high impact journals maintain the status quo
 - ▶ Open-access journals emerging
 - ▶ Different publishing models have different impact and ethics
- ▶ Fields have different publishing culture
 - ▶ Co-authorship
 - ▶ Number of papers cited
 - ▶ Data or software provided

Alternatives: Altmetrics



- ▶ Impact and quality of an article by online activity
 - ▶ Social media (twitter, facebook, Github, LinkedIn)
 - ▶ Blogs
 - ▶ Newspapers (press coverage)
 - ▶ Mendeley readership: Shares, clicks, views, saves, downloads
- ▶ <http://www.altmetric.com> (bookmarklet for Chrome/Firefox)
- ▶ Promote online discussion, outreach, science communication, education, lay audience newspapers, government policy
- ▶ More complete picture - does not claim to be better than existing pre-metrics
- ▶ Available for use by publishers, researchers, and institutions
- ▶ Publicity is not always good publicity (e.g., Wakefield paper)
- ▶ Topics of general interest will get wider coverage (e.g., health/env research)
 - ▶ Whether we want emphasis on community value in research recognition is debatable

Reference Managers

Tools to Organise Literature, Automate Citation, and Referencing



BIBTEX

THOMSON REUTERS
ENDNOTE

zotero



Role of Reference Managers

- ▶ Computerised library system to manage literature
- ▶ Manage literature in assignments, article, and thesis writing
 - ▶ Collect and Store
 - ▶ Organise and Annotate
 - ▶ Cite and Share
- ▶ Embed citations in documents
- ▶ Import referencing styles for courses and journals
- ▶ Generate bibliography

Functionality of Reference Managers

- ▶ Import citations
- ▶ Import/attach PDF files
- ▶ Search personal library
- ▶ Group/tag articles
- ▶ Edit reference fields
- ▶ Edit citation style
- ▶ Export citation to document
- ▶ Export Bibliography to document
- ▶ Sync library to the web

Recommended Reference Systems

- ▶ BibTex (Open-source)
 - ▶ Integrates with LaTeX
 - ▶ Exported by most reference managers and article websites
- ▶ EndNote (Reuters)
 - ▶ Retail, subsidised by the university (\$15 for personal computer)
 - ▶ Integrates with MS Word/PPT
 - ▶ Supported by the university: studentdesktop, library workshops, and support
 - ▶ Available for Mac/Windows
- ▶ Mendeley
 - ▶ Similar functionality, cross-platform, free
 - ▶ Enables sharing papers and networking
- ▶ Variety of alternatives available (most now have PDF storage and web integration)