

State of Open Access in New Zealand

2018 Research Publications: status as of June 2020 for all publication types with a DOI

Summary

Three out of every five 2018 publications by New Zealand university researchers are behind paywalls in 2020 (60%). When a New Zealand researcher is the corresponding author the proportion of closed publications is 64%. This is despite a clear citation advantage to publications with openly accessible versions, which are cited 56% more than those that are closed. Much greater volumes of our work *could* be made openly available via existing repository infrastructure than is currently the case in line with publisher allowances. Our researchers paid an estimated NZ\$3.1m in 2018 to publishers to make work open on top of the subscriptions paid by libraries. Research published in book form is almost entirely closed access but when open cited twice as often.

Scope of study

The dataset comprises all 2018 publications with a Digital Object Identifier (DOI) listed in Web of Science and Scopus databases with at least one researcher affiliated with a New Zealand university.

Whilst it is acknowledged that not all publications have a DOI, nonetheless this represents a massive dataset and there is no reason to believe that there would be a significantly different result for papers without a DOI. This report builds on CONZUL work from the 2019 Open Access Project, a detailed environmental scan and infographic (www.universitiesnz.ac.nz/about-universities-new-zealand/unz-committees-and-working-groups/council-new-zealand-university). See Appendix A for detail on our methodology for this year's analysis presented below.

Access to research

- Over all types of publication 60% are not available without payment.
- When the research has a corresponding author from a New Zealand university this figure increases to 64%.
- Only 20% of all publications were definitely open at the time of publication (Gold, Hybrid, Diamond). Green outputs may have become open at a later date and Bronze articles are open at the time of our analysis but subject to change.
- Journal articles are more likely to be open (44% open of 11,317 articles); monographs, books and book chapters are largely closed (93% of 202 publications).

Citation advantage for open

- Taking all forms of open publication together, on average they are cited 56% more often than closed outputs (6.20 for all open types as against 3.98 for closed).
- Hybrid OA achieves by far the highest average citation rate (11.20); Green, repository-based outputs are next (6.53) and well above APC-incurring Gold (4.74).
- Journal articles that are open have an average citation rate 35% higher than closed articles (6.41 against 4.73).
- Monographs, books and book chapters have an average citation rate 122% higher for open (1.82 against 0.82).

Open infrastructure

- Six out of eight universities now have policies, mandates or guidelines. This is an increase of one (AUT).

- Our universities continue to miss out on an opportunity to improve their research impact. In 2018, 3590 closed publications (87%) with a New Zealand corresponding author could have been legally deposited in a repository but were not. If we deposited all of these our proportion of open would catapult from 40% to 67%.
- The estimated cost of doing this would be NZ\$223k.¹
- When a publication with a New Zealand corresponding author is in a reputable repository, this is most commonly via an overseas university repository, mostly UK-based, or a disciplinary repository such as PubMed or arxiv.org. Only 604 publications from 2018 had been deposited in a New Zealand academic repository and for just 161 of these publications, this was the only open version. In other words, there is no strategy as to what we are depositing in our repositories: the vast majority of closed works are still closed, 443 were already open somewhere else and in only 161 cases did the New Zealand repository version make the difference between open and closed.

Who are we publishing with? At what cost?

Four major publishers account for nearly 70% of the publications (all types) from New Zealand corresponding authors, with one in five publications being placed with Elsevier alone.

Focusing on journal articles, a total of 1195 outputs with New Zealand corresponding authors were published through gold (81%) or hybrid (19%) modes of publication.

Using the advertised cost for the relevant journals the total payable would have been just over US\$2m / NZ\$3.1m. The average APC for Gold and Hybrid publications considered together is US\$1938.

Gold

As might be expected the big open access publishers Frontiers Media, MDPI and Springer Science account for around 50% of the estimated expenditure on gold APCs, along with sizeable amounts going to Elsevier and Wiley.

The Gold average APC is US\$1692 / NZ\$2530. The estimated total spend was US\$1.45m / NZ\$2.16m

Gold publications achieved an average citation rate of 4.25.

Hybrid (double-dipping)

Between them Elsevier and Wiley account for nearly half (48%) of estimated hybrid APCs and just 12 publishers account for 90% of the estimated spend. Publications with hybrid open access receive nearly twice as many citations as closed papers.

The Hybrid average APC is US\$3029 / NZ\$4550. The estimated total spend was US\$600k / NZ\$894k

Hybrid publications achieve a high average citation rate of 11.20.

¹ A 2015 study found that the processing cost of depositing an article in an institutional repository, including the time of the author, was £33 (or about NZ\$62 as of July 2019). Using this figure the 3,090 articles that are closed but could be open would cost \$191,580 to deposit. See: Johnson, R., Pinfield, S., & Foschi, M. (2016). Business process costs of implementing “gold” and “green” open access in institutional and national contexts. *Journal of the Association for Information Science and Technology*, 67(9), 2283-2295. doi.org/10.1002/asi.23545

Global developments

- Plan S/Coalition S have announced a [Rights Retention Strategy](#). cOAlition S organisations will change their grant conditions to require that a Creative Commons Attribution licence (CC BY) is applied to all Author Accepted Manuscripts (AAMs) or Versions of Record (VoR) reporting original research, supported in whole or in part by their funding. The AAM should be then immediately available at the time of publication.
- The people who developed Unpaywall are making news with their new product Unsub (<https://unsub.org/>). See *Science* news story here: [This tool is saving universities millions of dollars in journal](#) subscriptions. It is billed as a tool to “Get the data to forecast, explore, and optimize your alternatives to expensive journal bundles.” The website has a 20-minute video demonstrating use of the tool to analyse your institution’s subscriptions and usage to look for where cuts could be made without sacrificing frequently accessed material.
- MIT has been the latest high-profile institution to announce an end to negotiations with Elsevier. See: news.mit.edu/2020/guided-by-open-access-principles-mit-ends-elsevier-negotiations-0611

Comparing findings about 2018 publications to 2017

Note the explanation of refinement to the methodology below, meaning differences between 2017 and 2018 should be viewed as broadly indicative.

Data	2017 journal articles	2018 journal articles	2018 publications
Total publications		11317	13098
Proportion open v closed	41%/59%	40%/60%	36%/64%
Citation advantage (all open types v closed)	32% higher for open	35% higher for open	56% higher for open
Total APCs paid	NZ\$2.1m	NZ\$3m	n/a
Average APC Gold	NZ\$2500	NZ\$2530	n/a
Average APC Hybrid	NZ\$3800	NZ\$4550	n/a
Closed articles that could be legally deposited	3090 (88%)	3590 (87%)	n/a

Project Sponsor: Kim Tairi, University Librarian, AUT

Project Team and Report authors:

Bruce White, Open Access and Copyright Advisor, Massey University

Richard White, Manager Copyright & Open Access, University of Otago

Amanda Curnow, Digital Asset Management Librarian, Massey University

Appendix A

This report provides an update to the "[Open Access in New Zealand Universities an Environmental Scan](#)" (2019). The scope of this review is to compile and analyze a 2018 dataset of New Zealand university research publications and update the 2017 key findings. An updated infographic accompanies this report.

Refinement of methodology

This year's research broadens the scope of the research we examined to include any research with a DOI. Last year's analysis focused solely on journal articles but this year we include any other type of research with a DOI, e.g. books or book chapters. Research published in book form is predictably far less likely to be freely accessible and is cited significantly less.

Round 1 – 2019 project

In 2019 DOIs were sourced from individual university research repositories (Symplectic Elements) but there were a number of problems with this –

- The presence of a DOI in a repository is not strong evidence of a link between the authorship of a paper and the institution.
- Repository holdings are not necessarily comprehensive especially between PBRF rounds.
- University research repositories are not open sources and some repository managers consider the fact that a publication is in their repository to be confidential information. For this reason, we were not able to make our data open.
- Our open sources for bibliographic data – Unpaywall and Crossref – do not contain affiliation data which had to be sourced separately from Web of Science and Scopus. Affiliation data gives us the ability to identify which of the authors and corresponding authors relates to specific institutions and from that to identify the papers with New Zealand corresponding authors. This turned out to be a significant data point. Similarly, the two databases contained departmental and funder information. The result of using this information on a dataset that included DOIs that were not in either database was that we had two classes of data, one less detailed than the other.
- Our sample was largely slanted towards journal articles, possibly because DOIs for book chapters are not systematically included in research repositories.

Round 2 – 2020 project

In 2020 DOIs were sourced from Web of Science and Scopus using affiliation searches. While this avoided the problems mentioned above it, did mean that a number of small journals and emerging or marginal titles would have been excluded from the study which consequently became less "open". (It could also be noted that not all journals use DOIs.)

The data was run as close to a year from 29 May 2019 as we could get. This is largely to give a clear comparison for citations. The same basic methodology was adhered to, the major addition being Altmetric data which was not used in 2019.

As far as possible 2018 APCs were used, mainly sourced from Lisa Matthias. She will not have been able to get 2018 APCs in all cases so some of them will represent 2019 or 2020 figures. Where an APC also appears in DOAJ the Lisa Matthias one has been preferred as some of the DOAJ data is quite old. Some additional APCs were added by Bruce White, notably BMJ, and there may have been additional titles covered by Matthias that were not present last year. Overall the total number of available APCs is quite similar and the effect of changes on the overall picture will be slight.