

Would You Review Seven Papers a Day, Every Day, For a Year?

Graham Kendall^{1,2}

Published online: 1 August 2022

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature

Abstract

Publons currently has 1.7 million researchers on its database, who have registered 10.8 million reviews. The top ten Publons reviewers review at least one paper every 2 days. Three of the top ten reviewers have reviewed at least one paper every day since 2006 (resp. 2010 and 2013). That is, for the past 16 (resp. 12 and 9) years these reviewers have reviewed a paper every single day. If weekends, annual leave and public holidays are considered as days when reviews are not carried out, in their most productive year, the top ten reviewers, reviewed more than two papers every working day, with three reviewers carrying out 7.69, 5.08 and 4.71 reviews every working day in a given year. We also look at the publication record of the top ten Publons reviewers, concluding that it is strong. Finally, we discuss why these reviewers carry out the number of reviews that they do.

Keywords Publons \cdot Peer review \cdot Bibliometrics \cdot Google Scholar citations \cdot Quality versus quantity

Introduction

Publons was established to recognise the work of reviewers and also to provide a mechanism for reviewers to register their reviews on one platform. This not only enables a single repository to record all their reviews but also provides a publicly available resource so that others can view these records.

In this article, we review the scientific literature which has mentioned Publons. Of particular interest, in the context of this article, is the data from November 2015, which provides details of the number of reviewers and reviews registered with



Graham Kendall
Graham.Kendall@nottingham.edu.my

The University of Nottingham Malaysia, Semenyih, Malaysia

² The University of Nottingham, Nottingham, UK

Publons. This is compared to similar data collected in June 2022, which demonstrates how much Publons has grown.

The related work also touches on the criticism that has been levelled at Publons, in that it appears to be monetising the data that has been collected, evidenced by the way the data is used as a resource to suggest possible reviewers and the acquisition of Publons by Clarivate. This article does not enter into this debate, but we note that it is worthy of future research as Clarivate needs a return on their investment.

The data we present, which focusses on the top ten Publons reviewers, demonstrates that some people spend considerable time and effort reviewing papers. While this is to be applauded as a service to the scientific community, we ask why these reviewers feel the need to carry out the number of reviews they do, especially given the publish or perish [1, 2] environment that we now occupy.

Related Work

Publons was formed in 2013, or 2012, depending what resource you are reading. Perhaps, the company was registered in 2012 and it was launched in 2013. Publons provides recognition to those that carry out peer review, arguing that if researchers are given credit for this activity, they are likely to do more, and other researchers are likely to become peer reviewers [3].

A good overview of the Publons initiative is provided in Rajpert-De Meyts et al. [4], which also discusses the need for reviewer recognition as it is generally felt inappropriate to provide a financial incentive due to potential conflicts of interest. Previous ways to recognise the contributions of reviewers included listing them in the journal. Publons is seen as a natural extension of this reward mechanism. Another introduction to Publons is given in Citrome [5].

Van Noorden [6] reported that Yogendra Kumar Mishra was one of the Publons' top reviewers, measured over a 3-month period. Mishra said that he reviews about five papers a month and had registered 22 reviews in the past 3 months. He suspected that most scientists carry out a similar number of reviews. Figure 1 shows the number of reviews recorded on Publons for Mishra (as at 23 June 2022), by year. Overall, he has registered 1641 reviews with Publons.

Malcolm Jobling, who had won a previous publons award, was also featured in Van Noorden [6], as he had registered more reviews than any other reviewer. He said that he had registered more than 125 reviews in the current year, with 39 being registered on Publons in the past 3 months. Figure 2 shows the number of reviews recorded on Publons for Jobling (as at 23 June 2022), by year. Overall, he has registered 2074 reviews.

Teixeira da Silva [7] considers the quality versus quality aspect of Publons. Not having access to the peer reviews that have been registered does not enable any judgement to be made about the quality of the peer review reports. Not being able to validate quality, is problematical due to increasing retractions, discovering flaws in the peer review once the paper has been published and reviewers being rewarded for peer review, even if it is lesser quality or the paper being reviewed was for a predatory journal (see Kendall [8, 9] and Kendall & Linacre [10] for a



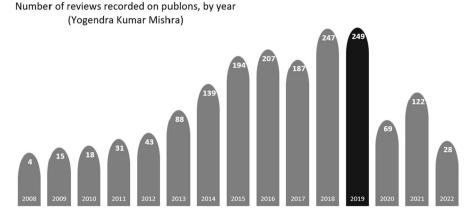


Fig. 1 Number of reviews for Yogendra Kumar Mishra on Publons (as at 23 June 2022)

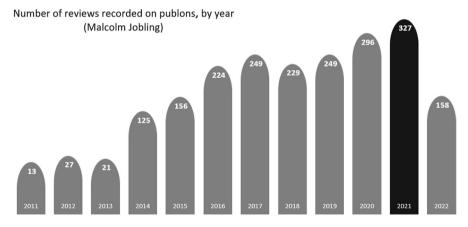


Fig. 2 Number of reviews for Malcolm Jobling on Publons (as at 23 June 2022)

discussion on predatory journals). Teixeira da Silva [7] concludes that "Publons is biased and has problematic metrics that should not serve as research evaluation indicators".

Al-Khatib and Teixeira da Silva [11] argue "that peer review should remain a voluntary mission and should not be prompted by the need to attain tenure or promotion". They added that if peer review was a requirement for tenure, it will add additional pressure onto academics. Moreover, peer reviews that are done under such pressure are unlikely to improve the overall quality of the reviews.

Ortega [12] analyses bibliometric performance and peer review activity of Publons members. It shows that the relationship between these two activities is weak. They also note that the ratio of accepted papers, for a given researcher, is inverse to the number of reviews, suggesting that peer review activity could come at a cost of publishing papers.



In a follow up paper, Ortega [13] was again critical of Publons, saying that there are biases in their coverage of disciplines and publishers. For example, Physical Sciences and Engineering are underrepresented and there are more articles from open access journals on the Publons platform. Several issues are raised with regard to quality which questions the robustness of using Publons as a quality indicator. The authors conclude that metrics from Publons, and their correlations to bibliometric metrics are weak and not significant.

By contrast, Mavrogenis et al. [14] supports the principles of Publons and also proposes a methodology (INOR-RS) which measures the quality of a given review, for a given journal.

Jorm [15] provides personal reflections on the peer review process saying that it is increasingly difficult, as an editor, to find peer reviewers, often having to invite 10–20 reviewers to get two to accept. Twenty years ago, when you invited two reviewers, it was not unusual to have them both accept. Jorm notes that Publons is promoted as a way of recognising reviewers, but it is also a rich resource for editors to find reviewers. He notes that Clarivate uses Publons data to suggest reviewers.

To test whether Publons were a significant source of review requests, many of which were outside his area of expertise, Jorm carried out an experiment, concluding that Publons is a major source of review invites. He has decided to permanently make himself unavailable on the Publons platform. Jorm also questions the transparency with which the data is used. Publons promotes itself as a service to authors, but the data is also sold to Web of Science for their Reviewer Locator tool.

On 14 March 2022, Publons announced that Publons would move to Web of Science. This followed Clarivate announcing that it had acquired Publons on 1 June 2017 [16]. The Guardian also reported this acquisition, and some of the concerns and possible consequences [17]. See #02 in Web Archives, where this announcement has been captured.

Teixeira da Silva and Al-Khatib [18] discussed this acquisition, asking whether it was an evolution of the peer review system, or whether it was commodification. Their paper was generally critical of Publons, saying "Publons was perceived as a positive step towards a more transparent peer review system. However, the continued presence of fake peer reviews and a spike in retractions, even among publishers that were Publons sponsors, suggests that perhaps peers may be exploiting Publons to get recognition for superficial or poor peer review. Since all reviews are not public, their content and quality cannot be verified."

They go on to say "Touting the purchase as a way to increase transparency, and stamp out fake peer review, some who had supported Publons felt betrayed, even cancelling their Publons accounts immediately when learning of this purchase. Their concerns included the possible "gaming" of peer review as had taken place with the journal impact factor." I apologise for quoting so heavily from this paper, but I did not feel I could summarise it, as well as the authors have expressed their views.

In the rest of this paper, the number of reviewers and reviews on the Publons platform is presented, providing an additional data point, in addition to the 2015 data reported by Smith [3]. The productivity of the most prolific reviewers on the platform is also presented which, again, shows a significant increase from the data



presented in Van Noorden [6]. We ask what motivates reviewers to register so many reviews on Publons.

Analysis

The Publons web site (see #01, in Web Archives) currently lists 225 countries, representing 1,707,887 researchers who have carried out 10,824,284 reviews. This compares with November 2015 when Publons had 50,000 members, who had uploaded 250,000 reviews for 14,500 different journals [3].

Most Prolific Reviewers

We extracted the most prolific reviewers from the Publons web site. This data was captured from the Researchers area (https://publons.com/researcher/, accessed 23 June 2022). The "Web of Science Core Collection only" and "Last 12 months" options were unchecked, so that all registered reviews were captured. Table 1 presents data for the ten most prolific reviewers, sorted by the number of verified reviews. We respect the anonymity of the researchers, as it feels like the right thing to do, noting that their names are easy to find by accessing the Publons web site or the archive we captured (see #03, in Web Archives).

Table 1 can be read as follows. The first column shows the reviewer position. The second column shows the number of reviews that have been recorded on Publons by that reviewer, with the third column showing the number of reviews in 2022. The next column (Reviews Considered) shows the total number of reviews, minus the 2022 reviews, as we ignore the 2022 reviews in our analysis as the year is incomplete. The column labelled "First Review" shows the 1st year when reviews were recorded for that researcher. The remaining columns (A–F) present the following statistics.

Tahle 1	Analysis of to	an 10 Publan	reviewers	(accessed 23	June 2022)

#	Verified reviews	2022 reviews	Reviews consid- ered	First review	A	В	С	D	Е	F
01	6574	169	6405	2006	1.10	1.53	745	2.04	2.85	3.23
02	5366	463	4903	2013	1.49	2.09	1776	4.87	6.80	7.69
03	4693	311	4382	2009	0.92	1.29	957	2.62	3.67	4.14
04	4541	282	4259	2007	0.78	1.09	842	2.31	3.23	3.65
05	4458	21	4437	2010	1.01	1.42	501	1.37	1.92	2.17
06	3980	442	3538	2007	0.65	0.90	1174	3.22	4.50	5.08
07	3611	390	3221	2011	0.80	1.12	835	2.29	3.20	3.61
08	3465	_	3465	2008	0.68	0.95	1087	2.98	4.16	4.71
09	3419	360	3059	2012	0.84	1.17	1035	2.84	3.97	4.48
10	3187	257	2930	2004	0.45	0.62	491	1.35	1.88	2.13



- A. This shows the average number of reviews carried out each day, taking into account when the researcher started reviewing. For example, researcher #01 started reviewing in 2006. This represents 5844 days (1 Jan 2006–31 Dec 2021). The average number of reviews each day is 6405/5844 = 1.10.
- B. This shows the average number of reviews each day, excluding weekends. The number of days this represents is calculated by using the Excel NETWORKDAYS function. This function excludes Saturdays and Sundays. Using researcher #01 as an example, the number of days since 2006 (to 31 Dec 2021), excluding weekends, is 4176, with the number of reviews each day being 6405/4176 = 1.53.
- C. This shows the maximum number of reviews in 1 year. For example, researcher #01, in 2015, carried out 745 reviews (see Fig. 3).
- D. Considering the maximum number of reviews for a given year (column C), this figure shows the average number of reviews each day, in that year. For example, in 2015, researcher #01 registered 745 reviews. This represents 745/365 = 2.04 reviews each day. Note, we ignore leap years.
- E. This figure provides the same statistic as D but ignoring weekends. I make the assumption that each year has 104 weekend days, meaning that there are 365-104=261 working days in each year. For researcher #01, this represents an average number of 745/261=2.85 reviews each day.
- F. It is recognised that every year will not always have 104 weekend days, and public holidays and annual leave are also being ignored. Each year has not been analysed to get the exact number of weekend days (as ± 1 or 2 days is not going to significantly change the statistic) and the number of public holidays and annual leave entitlement is different across countries and institutions. If we make the broad assumptions that there are 10 public holidays in a year and that a researcher receives 20 days of annual leave, we use 261 (from E), less an additional 30 days

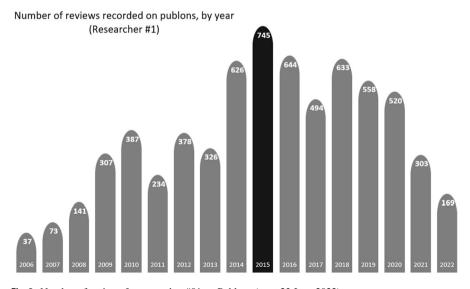


Fig. 3 Number of reviews for researcher #01 on Publons (as at 23 June 2022)



to give 231 working days. Therefore, in researcher's #01 most productive year, they would have carried out 745/231 = 3.23 reviews each day.

Most researchers will work during weekends, during annual leave and during public holidays, so as more of these days are included in the analysis, it could be argued that it is not really representative of working practises. However, these different granularities of analysis have been included so that the reader can decide which is the most appropriate. This could lead onto a wider discussion about work life balance but that is beyond the scope of this article.

Table 1, specifically columns A and F, shows the two extremes. Column A shows that every one of the ten researchers reviews a paper, at least, every other day. This assumes that they review every day, including weekends, public holidays and while on annual leave. If they do not work weekends, public holidays or during their annual leave, in their most prolific year, every researcher reviewed at least two papers on each working day of that year (column F).

One researcher (#02 in Table 1) reviewed more than seven papers a day, every day, in 2020. Even under the model, where researcher #02 works every day (column A), he/she still reviewed 1.5 papers a day, and has been doing so for the past 9 years (2013–2021).

Looking at the Google Scholar profile for researcher #02, the number of papers they have published over the past few years was captured. This data is shown in Table 2 and, for completeness, we have shown the Google Scholar data for the other researchers from Table 1.

We expected that the number of papers published by researcher #02 would be relatively low, especially if their output followed the observation by Ortega [12], who said that the ratio of accepted papers, for a given researcher, is inverse to the number of reviews.

Table 2 Number of papers published by the top 10 Publons Reviewers, from 2010 (from Google Scholar, accessed 28 June 2022) (A Google Scholar profile was not found for #10)

Year	Publons reviewer												
	#01	#02	#03	#04	#05	#06	#07	#08	#09	#10			
2022	7	67	33	8	10	12	0	26	37	_			
2021	7	107	34	22	35	12	2	37	81	_			
2020	8	87	58	19	26	18	1	26	75	_			
2019	8	36	37	8	25	11	0	38	57	_			
2018	9	25	48	6	34	7	5	23	24	_			
2017	9	14	33	2	17	6	1	15	10	_			
2016	13	11	39	4	15	7	4	10	11	_			
2015	4	14	31	3	10	4	3	22	4	_			
2014	7	12	52	1	19	8	1	16	16	_			
2013	12	6	37	2	20	18	7	10	8	_			
2012	10	8	39	2	12	6	3	14	7	_			
2011	13	3	44	5	10	10	8	19	6	_			
2010	11	1	16	5	15	7	2	12	1	_			



	Publons reviewer									
	#01	#02	#03	#04	#05	#06	#07	#08	#09	#10
Publication frequency (days)	38.86	3.13	8.12	18.13	12.09	22.67	272.00	8.63	4.61	

Table 3 The frequency with which the top 10 Publons reviewers publish (in days) in 2021–2022 (up to 28 June 2022) (A Google Scholar profile was not found for #10)

Number of reviews recorded on publons, by year (Researcher #2)

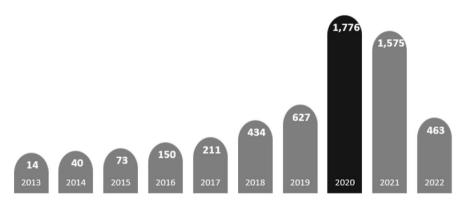


Fig. 4 Number of reviews for researcher #02 on Publons (as at 23 June 2022)

However, as well as being a prolific reviewer, researcher #02 is also a prolific author. This year alone (up to 28 June 2022) he/she has published 67 papers and last year (2021) they published 107 papers. Between 1 Jan 2021 and 28 June 2022 (544 days), 174 papers have been published. This means that researcher #02 publishes a paper every 544/174 = 3.13 days.

The reviewer/author should be congratulated for being able to review 1.5 papers every day and to publish a paper every 3 days. It would make an interesting study (or at least an interview) to understand, and appreciate, how anybody is able to operate at this level of achievement, over a sustained period of time. It could be instructive for others who wish to increase their own productivity.

For completeness, we also look at the frequency with which the other researchers published (see Table 3). It is noticeable that, apart from one researcher (#07), they all publish at levels which many scholars would be more than happy with.

Comparison with 2014

If we compare the top Publons reviewers reported in Van Noorden [6] (see Figs. 1, 2), with researchers #01 and #02 (see Table 1 and Figs. 3, 4), it is apparent that



the number of reviews registered with Publons has risen significantly. Perhaps, the number of reviews has not increased, just the number registered on the Publons platform? This could be worthy of further investigation, just to understand if there are now more papers to review, or whether Publons is now capturing data which was not being captured previously?

Why Review So Many Papers?

What motivates reviewers to review papers at such prolific levels? In addition to the review itself, there are other tasks that need to be managed such as registering with the journals, monitoring the various papers you are reviewing, ensuring that deadlines are met and carrying out any follow up reviews for papers that have been resubmitted after revision.

There is also the not insignificant question as to how so many invites are received. Many academics will receive multiple review invitations each week, but 2–3 each day, possibly up to eight a day is almost unheard of. Perhaps, once you get known for your willingness to review papers, you will receive more invites?

Why do they reviewers feel the need to review at these extremely high levels? To our knowledge, promotion, tenure or job offers are not heavily reliant on carrying out peer review. It is nice to see that somebody is carrying out this activity, either by being on conference program committees or by being asked by journal editors, but there is a law of diminishing returns. Once you have done a relatively small number, and this is maintained, you will generally have enough evidence to demonstrate that you are considered an expert by your peer group.

Acting as an Associate Editor or an Editor-in-Chief is different and comes with its own time pressures, but carrying our peer review is almost a binary factor on your CV. You need to do enough to demonstrate that you have been asked but any more than that does not significantly add to your CV.

One motivation could be a competitive element, to get yourself as far up the Publons leader board as possible. Another motivation might be the real desire to give back to the scientific community, by lending your expertise by conducting peer review. Perhaps, reviewing so many papers not only keeps you abreast of new ideas, before they are published, but is also a source of inspiration for your own research?

Conclusion

The top 10 reviewers, who are registered with Publons, review at least one paper every other day. One reviewer reviewed seven papers a day in 2020 and has reviewed an average of 1.5 papers a day for the past 9 years. This reviewer has also published an average of one paper every 3 days in the last 17 months, in addition to reviewing at least one paper a day.

The number of registered reviews on Publons has increased significantly since 2014, which has enabled these resources to be monetised.



The importance of peer review cannot be ignored, but it is questionable whether researchers need to use a service such as Publons to register their reviews. Even if there is a need, such as having a place where interested parties can view a reviewing profile, there must be a law of diminishing returns? Is it sensible, possible even, for somebody to review more than one paper a day? There is an argument that they are providing a service to the scholarly community but, surely, their time could be spent on other activities that would better assist their career advancement such as writing papers and seeking out research funding?

Future Work

It would be interesting to know more details about the acquisition of Publons by Clarivate. Some details are likely to be commercially sensitive and confidential but it would be an interesting to explore, not least of all what plans there are to leverage on the data that has been collected over the years.

As mentioned in the body of the paper, it would be interesting to understand more about how certain individuals can be so productive and how they are able to carry out so many reviews and still maintain a publication output that is way beyond the vast majority of scholars. It would be an interesting case study, perhaps not for a peer reviewed publication but certainly of interest for a time management and/or a work life balance point of view.

The dramatic rise in the entries in the Publons database is interesting and may warrant further investigation. There is evidence that more papers are being written, requiring more peer review but is it possible to quantify this, along with the extra pressures this brings to bear on reviewers. It would also be interesting to investigate whether scholars are less willing to review papers than they were in the past, thus increasing the pressure on the peer review system.

Web Archives

This section provides links to Wayback Machine for various captures that we have made.

Ref	Description	Web site capture
#01	List of countries registered on Publons (captured 25 June 2022). For some reason the 225th country (British Virgin Islands) is not show on the archive, but we note that all the values against that country were zero, so it does not contribute to the review figures that we quote	https://bit.ly/3bp7RFK
#02	Announcement that Publons is moving to Web of Science (captured 16 May 2022)	https://bit.ly/3lee0Go
#03	Showing the top 15 researchers registered on Publons (captured 23 June 2022)	https://bit.ly/3OC5XQi



References

- Amutuhaire T. The reality of the 'Publish or Perish' concept, perspectives from the global south. Publ Res Q. 2022;38:281–94. https://doi.org/10.1007/s12109-022-09879-0.
- Lemberger T, Pulverer B, Sheehan-Rooney J, Watt FM. Funding: end 'publish or perish' for postdocs. Nature. 2022;606:250. https://doi.org/10.1038/d41586-022-01541-1.
- Smith DR. Will Publons popularize the scientific peer-review process? BioScience. 2016;66:265–6. https://doi.org/10.1093/biosci/biw010.
- Rajpert-De Meyts E, Losito S, Carrell DT. Rewarding peer-review work: the Publons initiative. Andrology. 2016;4:985–6. https://doi.org/10.1111/andr.12301.
- Citrome L. Peer review and Publons—enhancements for the reviewer. Int J Clin Pract. 2016;70:364. https://doi.org/10.1111/ijcp.12827.
- Van Noorden R. The scientists who get credit for peer review. Nature. 2014. https://doi.org/10.1038/ nature.2014.16102.
- Teixeira da Silva JA. Are negative reviews, predatory reviewers or failed peer review rewarded at Publons? Int Orthop. 2020;44:2193–4. https://doi.org/10.1007/s00264-020-04587-w.
- Kendall G. Beall's legacy in the battle against predatory publishers. Learn Publ. 2021;34:379–88. https://doi.org/10.1002/leap.1374.
- 9. Kendall G. Case study: what happens to a journal after it accepts a spoof paper? Publ Res Q. 2021;37(4):600–11. https://doi.org/10.1007/s12109-021-09843-4.
- Kendall G, Linacre S. Predatory journals: revisiting Beall's research. Publ Res Q. 2022. https://doi. org/10.1007/s12109-022-09888-z.
- 11. Al-Khatib A, Teixeira da Silva JA. Rewarding the quantity of peer review could harm biomedical research. Biochem Med. 2019;29:20201. https://doi.org/10.11613/BM.2019.020201.
- Ortega JL. Are peer-review activities related to reviewer bibliometric performance? A scientometric analysis of Publons. Scientometrics. 2017;112:947–62. https://doi.org/10.1007/s11192-017-2399-6.
- Ortega JL. Exploratory analysis of Publons metrics and their relationship with bibliometric and altmetric impact. Aslib J Inf Manag. 2019;71:124

 –36. https://doi.org/10.1108/AJIM-06-2018-0153.
- Mavrogenis AF, Sun J, Quaile A, Scarlat MM. How to evaluate reviewers—the international orthopedics reviewers score (INOR-RS). Int Orthop. 2019;43:1773–7. https://doi.org/10.1007/ s00264-019-04374-2.
- Jorm AF. Publons as a source of high volume, poorly targeted reviewer requests: the need for better standards of practice by publishers. Learn Publ. 2022;35:285–7. https://doi.org/10.1002/leap.1420.
- Van Noorden R. Web of Science owner buys up booming peer-review platform. Nature. 2017. https://doi.org/10.1038/nature.2017.22094.
- Curry S. Peer review is essential to good science—it's time to credit expert reviewers. The Guardian; 2017. Available from: https://www.theguardian.com/science/2017/jun/01/peer-review-is-essential-to-good-science-its-time-to-credit-expert-reviewers. Accessed 16 May 2022.
- Teixeira da Silva JA, Al-Khatib A. The ClarivateTM Analytics acquisition of Publons—an evolution or commodification of peer review? Res Ethics. 2019;15:1–11. https://doi.org/10.1177/1747016117 739941.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

