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A Glance at the Activity of Iranian Researchers and Reviewers in Publons

Fereshte Nojavan[#], Amir Ghasemian[$], Amir Reza Asnafi[$,*] and Mohammad Javad Zarei Morad Haseli[$]

[#]*Faculty of Education and Psychology, University of Isfahan, Isfahan, Iran*
[$]*Department of Knowledge and Information Scienc, Shahid Beheshti Univeristy, Tehran, Iran*
[*]*E-mail: aasnafi@gmail.com*

ABSTRACT

Publons is a portal that gives information on scientific products, review activities, and the scientometric standing of researchers. In this line, the present study attempted to evaluate the review actions of researchers of Iranian universities in Publons. In this applied research, the 10 best institutions of Iran were picked as the comprehensive research based on the number of researchers in Publons. Demographic data, verified reviews, and scientometric indicators were extracted. Microsoft Office and R applications were used to examine the data. The findings suggested that the University of Tehran has top rank in terms of verified reviews compared to other institutions. Researchers from Iran University of Science and Technology in Publons did better with high H-index and citations. The data also demonstrated that there was a statistically significant association between scholars' review activities with research products and scholars' H-index, according to which the editors-in-chief of journals pick academics who have a lot of reputation and research products for review. Publons is an excellent instrument for researchers to exhibit their scientific strength in evaluating the editors-in-chief of journals in the worldwide community and also raise the quality of publishing research outputs by developing the talent of criticism and review.

Keywords: Publons; Iranian scholars; Verified reviews; Social network

1. INTRODUCTION

Social networks, as a new generation of communication technologies, may help scientists and researchers communicate more effectively and collaborate more effectively. These databases are built on online organisations, and each brings together a distinct group of Internet users. It considers social networks to be a subset of social media that has enabled the development of a new mode of communication and content sharing on the Internet[1]. Participating in scientific social networks strengthens researcher-researcher interactions and the utilisation of collective knowledge, thus promoting science[2]. This development has resulted in increased access to and viewing of scientific material, as well as increased knowledge growth, as a result of the digitalisation and open access publication models. Publons is a comparable technology that is used to detect and authenticate reviewing activity. Peer review is now recognised as the most accessible method for conducting critical examination of data associated with a research work[3]. Reviewing is a specialist activity that involves sufficient time and topic expertise, as well as scientific writing, statistical analysis, and publication ethics[4]. Effective reviews serve as "gatekeepers" of scientific publications, assisting in the release of high-quality papers, which increases the journal's efficacy. Identifying and cultivating a set of reviewer skills, on the other hand, is a difficult task for any journal or editor 3. In this context, Publons was founded in 2013 in New Zealand by Andrew Preston and Daniel Johnston to track reviewers' actions and to properly recognise their efforts. It is presently handled by the Clarivate Analytics Institute. This service verifies and publishes each reviewer's editing activities as determined by the editors of different periodicals. This website attempts to represent these scientists' contributions to the academic publishing system and to recognise the high quality of their editorial work. Publons gives a new venue for journal editors to evaluate researchers while they are recruiting reviewers[5]. In this respect, an in-depth examination of a country's leading institutions may provide information on its global presence, as well as the number of publications, researchers, and reviewers. The findings of this study may be used to get a better knowledge of the present state of researchers' presence and usage of the Publons platform, as well as the identification of active and top reviewers by editors-in-chief of journals and publishers. Additionally, this study may motivate researchers to use more of these technologies while being more successful. We have used Publons' unique tools to examine the representation of academics and peer reviewers from the most prestigious Iranian universities and institutes. As a result, we studied the top ten Iranian institutions on Publons in terms of researcher count, reviewer count, publishing statistics, and scientometric status.

2. LITERATURE REVIEW

Stossell (1985)[6] discovered that high-status reviewers agree to evaluate a limited number of publications, but low-

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status reviewers often deliver a favourable report. Evans *et al*. (1993)[7] assessed the credentials of 200 researchers as reviewers. They identified the competent reviewer as a young individual from a reputable academic institution who is well-known to the editors. According to Gasparyan & Kitas (2012)[8], numerous lines of data imply that a strong university connection and adequate research training are determinants of the top peer review contributors. Opthof *et al*. (2002)[9] examined the relevance of peer review in the context of bias and discovered a positive correlation between reviewer recommendations and editor ratings and citations. Aksnes & Taxt (2004)[10] investigated the association between bibliometric markers and peer review results. Positive but rather minor correlations are observed in the study. Haustein *et al*. (2014)[11] evaluated the use of scientific social media by 71 scientometric researchers in their study "Coverage and Use of Almetrics Resources in the Bibliographic Society." LinkedIn and Academia are the third most popular social networking platforms, with 21 per cent of researchers using ResearchGate to discuss scientific results and engage with one another. Parabhoi and Kumari (2018)[12] investigated teacher and student awareness and usage of academic social networking platforms (Indian School of Mines). The data indicated that 85 percent of respondents had accounts on social media platforms such as Academia, Research Gate, LinkedIn, Mendeley, and Impact Story, with the majority of users logging in through LinkedIn first, followed by Research Gate. Asemi and Margam (2018)[13] published an article named "Academic Social Networks for Researchers at Delhi Central University: A Case Study of ResearchGate and Academia." Their results indicate that although researchers primarily utilise Academia for sharing and scientific research and ResearchGate for interacting with other academics, data security is one of their primary concerns. Additionally, the research discovered that India's usage of these networks is lower than that of industrialised nations. Ortega (2017)[5] examined the association between academics' Publons review actions and their Google Scholar research results. The findings indicate a low association between bibliometric indices and review efforts. Male researchers did the most reviews, whereas young female researchers received the most review requests. Ortega (2019)[14] studied the association between the Publons indicators for its articles and bibliometric and altmetric indicators in another research. The findings indicate that Publons coverage is skewed significantly by discipline and publisher, and that the connection between altmetric and bibliometric indexes and Publons criteria is extremely poor (r.2) and non-significant. Zong *et al*. (2020)[15] studied the association between a paper's post-publication peer review (PPPR) polarity and its citation count. The experimental group consisted of articles with PPPRs from Publons.com, whereas the control group consisted of papers without PPPRs from the same journal, the same issue (volume), the same access status (gold open access or not), and the same document format. According to the results, when other model variables (such as page count, author count, etc.) were held constant, papers that received neutral PPPRs, negative PPPRs, or both negative and positive PPPRs had no significant difference in citation count when compared to their corresponding control pairs (papers without PPPRs). While maintaining other factors (such as page count, author count, etc.) constant in the model, papers with positive PPPRs had a considerably higher citation count than their comparable control pairings (articles without PPPRs). Ahmed & Anirvan (2021)[16] conducted a Publons analysis of the researchers and reviewers at the major Central Asian educational institutions. The best institutions in nine Central Asian nations were chosen. Publons data were compared to country-level demographic statistics. Twelve of the top fifteen institutions were Chinese. Kazakhstan and Iran each had two institutes. Afghanistan, Tajikistan, and Turkmenistan all performed poorly on several indicators, but China performed well. There was a strong association between the number of researchers at the top universities in each nation and the number of published articles and reviews completed. Additionally, there was a strong association between the overall number of publications and several demographic variables.

3. RESEARCH QUESTIONS

- How is Iran's overall review activity in Publons?
- How are researchers at Iran's top ten institutions doing in terms of review activities?
- What is the status of researchers at Iran's top ten institutions in terms of publications and scientometrics?
- Is there a correlation between review activities (verified reviews and peer-reviewed journals) and Publons researchers' publications and H-index?

4. METHODOLOGY

This is an applied research. Gender, Top/Excellent Peer Reviewer, Publications, Total Times Cited, H-Index, Web of Science Documents, Verified Reviews (Last 12 Months), and Reviewed Journals were all employed as indicators in this research.

4.1 Explanation of Indicators

4.1.1 Verified Reviews

Verifying reviews entails establishing that the review was indeed conducted by the researcher. This verification is reflected in the researcher's profile by a green check next to the Verifying reviews. Verifying reviews demonstrate the researcher's efforts as a quantifiable research output and proof of prior clandestine contributions to science and research. Confirmation is accomplished in one of two ways: (1) When a review is associated with one of Web of Science's partner publications, automatic verification occurs, and (2) By completing site forms or submitting an email to reviews@publons.com, you may request editor approval.

4.1.2 Excellent Peer Reviewer

Not all reviews are created equal. Certain evaluations are sufficient to assist the author (s) in concluding their study and to assist the editor in making an educated and timely choice to publish. These sorts of surveys aid in the rapid dissemination of verified research around the globe. Excellent evaluations are chosen for their timeliness, clarity, usefulness, and thoroughness. If a review earns a score of 9 or above out of a possible 12, it is considered 'Excellent.'

4.1.3 Top Peer Reviewer

The top reviewers are chosen based on their Global Peer Review Awards. This manner, professionals who contribute significantly to the examination of the world's research are recognised. For instance, awards include the leading 1 per cent in their field, the Sentinel Award, the Top managing editors, and the top reviewers for top journals.

4.1.4 Reviewed Journals

The number of journals evaluated by researchers for those journals, as well as their Verified Reviews, is associated with these journals.

4.1.5 Data Extraction

On 2021/10/10, data were taken from Publons. The research community in this study was comprised of the top ten institutions as measured by the number of researchers on Publons, including the University of Tehran, the University of Medical Sciences (Shiraz, Isfahan, Tehran, and Tabriz), Islamic Azad University, Iran University of Science and Technology, and University of Medical Sciences (Iran and Shahid Beheshti). The analysis included the first 50 researchers at each institution who had at least four confirmed reviews in the previous year. To get general information about Iran (Table 1) on the publons home page, choose the "Country / Region" option in the "BROWSE" section. Manually obtained data on scholars' review activity and scientometric markers. In this phase, the "Institutions" area of "BROWSE" was picked, and enter "Iran" in the search box, and the researchers' profiles were discovered by clicking on the institute's name, choosing the "View Researchers" option, and then clicking on the researcher. The main page of the researcher's profile, as well as metrics and peer review choices, were utilised to extract data.

4.1.6 Data Analysis

To determine the normalcy of data, the Skewness and Kurtosis tests were utilised. Apart from descriptive statistics, we investigated the correlations between these factors. Pearson correlation coefficient was used since the data was largely parametric.

4.1.7 Statistical Software Used

The data were analysed using Microsoft Office (descriptive statistics) and R software: ver. 3.3 (correlation analysis).

5. FINDINGS

5.1 How is Iran's Overall Review Activity in Publons?

As shown in Table 1, Iran was recently ranked among the top ten nations in the world in terms of the number of researchers on Publons and verified reviews. Additionally, it was ranked 12th and 13th in terms of total verified reviews and top reviewers, respectively.

Table 1. Iran's overall review activity in Publons

Verified reviews in last 12 months	Verified reviews	Top reviewers	Researcher	Country
63990	225435	699	46944	Iran
9	12	13	10	Rank

5.2 Review Activities of Researchers at Iran's Top Ten Institutions

The results of Table 2 indicate that among the universities analysed, the standing of Tehran University, Iran University of Medical Sciences, and Shahid Beheshti University of Medical Sciences was favorable in terms of top/excellent reviewers. The University of Tehran, Tehran University of Medical Sciences, and Tabriz University of Medical Sciences were placed first through third in terms of confirmed reviews, whereas Isfahan University of Medical Sciences was ranked last with the fewest verified reviews. Additionally, studies revealed that the University of Tehran and Isfahan University of Medical Sciences had the highest and lowest arbitration levels, respectively, in the previous year.

5.3 Status of Researchers at Iran's Top Ten Institutions in Terms of Publications and Scientometrics?

According to Table 3, the researchers from Iran University of Science and Technology in Publons produced the most research items, with just one woman among them. Isfahan University of Medical Sciences was placed second in terms of research output, and the university's female and male researchers were almost equal. Meanwhile, Shiraz University has the most research products listed in Web of Science, while having the fewest research products among universities.

According to Table 4, when institutions were evaluated based on their researchers' scientometric status, the Iran University of Science and Technology was ranked first with an average of 1032 citations and an H-index of 15, while the Islamic Azad University was ranked last with an average of 302 citations and an H-index of 7.

5.4 Is there a Correlation between Review Activities (Verified Reviews and Peer-Reviewed Journals) and Publons Researchers' Publications and H-index?

The findings of Fig. 1 indicated a statistically significant correlation between the H-index and verified reviews at Shiraz University and Tabriz University of Medical Sciences, with a P-Value of 0.001. This was an incremental (direct) interaction at the intermediate level. This indicates that when the H-index increases, the number of verified reviews increases proportionately, and vice versa.

According to Fig. 2, Pearson correlation analysis revealed a statistically significant link between publications and verified reviews at Islamic Azad University, Shiraz University, and Tehran University of Medical Sciences, respectively, with P-values of (0.001, 0.001, and 0.028. This link was direct and intermediate, i.e., when the number of publications increases, the number of verified reviews increases proportionately, and vice versa.

As shown in Fig. 3, Pearson correlation analysis revealed a statistically significant relationship between H-index and

Table 2. Status of Iranian researchers in the 10 top institutions in terms of review activities

Reviewed journals	Verified reviews in last 12 months	Total verified reviews	Top peer reviewer/ Excellent reviewer	Institute	Publons rank
941	2017	5029	6	University of Tehran	92
499	688	2211	2	Shiraz University of Medical Sciences	139
466	556	1759	5	Isfahan University of Medical Sciences	183
579	1598	4632	4	Tehran University of Medical Sciences	186
797	1171	3262	4	Tabriz University of Medical Sciences	216
390	1288	2651	2	Islamic Azad University	227
625	699	2671	3	Shiraz University	244
602	863	2676	1	Iran University Science & Technology	303
501	692	2057	6	Iran University of Medical Sciences	344
805	977	3120	6	Shahid Beheshti University Of Medical Sciences	356

Table 3. Status of researchers at Iran's top ten institutions in terms of publications

Percentage publications indexed in WoS (%)	Total publications	Gender		Institute
		Female	Male	
88	2288	6	44	University of Tehran
72	2110	11	39	Shiraz University of Medical Sciences
78	2436	22	28	Isfahan University of Medical Sciences
86	1852	16	34	Tehran University of Medical Sciences
87	2047	18	32	Tabriz University of Medical Sciences
72	1220	15	35	Islamic Azad University
92	1746	8	42	Shiraz University
90	3504	1	49	Iran University Science & Technology
78	1781	20	30	Iran University of Medical Sciences
78	2237	19	31	Shahid Beheshti University of Medical Sciences

Table 4. Status of researchers at Iran's top ten institutions in terms of scientometrics

Rank	Average H- index	Average citations	Institute
5	13	885	University of Tehran
9	8	380	Shiraz University of Medical Sciences
6	10	597	Isfahan University of Medical Sciences
2	11	1005	Tehran University of Medical Sciences
7	12	577	Tabriz University of Medical Sciences
10	7	302	Islamic Azad University
4	12	899	Shiraz University
1	15	1032	Iran University Science & Technology
8	9	556	Iran University of Medical Sciences
3	11	903	Shahid Beheshti University of Medical Sciences

peer-reviewed journals at Isfahan University of Medical Sciences, Islamic Azad University, Shahid Beheshti University of Medical Sciences, Shiraz University of Medical Sciences, and Tabriz University of Medical Sciences (p-value 0.05). This association was both direct and intermediate, e.g., an increase in the H-index results in an increase in the number of reviewed journals, and vice versa.

6. DISCUSSION

Six of the ten universities examined in this research were in the subject of medical sciences. Ortega (2019)[14] confirmed these academic distinctions, stating that medical researchers are more interested in sharing their evaluations, while engineers are hesitant to disclose their review findings. The investigation of institutions' review status revealed that the University of Tehran performed the best in terms of overall number of reviews, number of recent reviews, and number of researchers on Publons. Although Isfahan University of Medical Sciences was ranked third by researchers on Publons, it had a low review rating. According to the researchers' demographic data, there was just one women reviewer at Iran University of Science and Technology. One of the possible explanations for this finding is

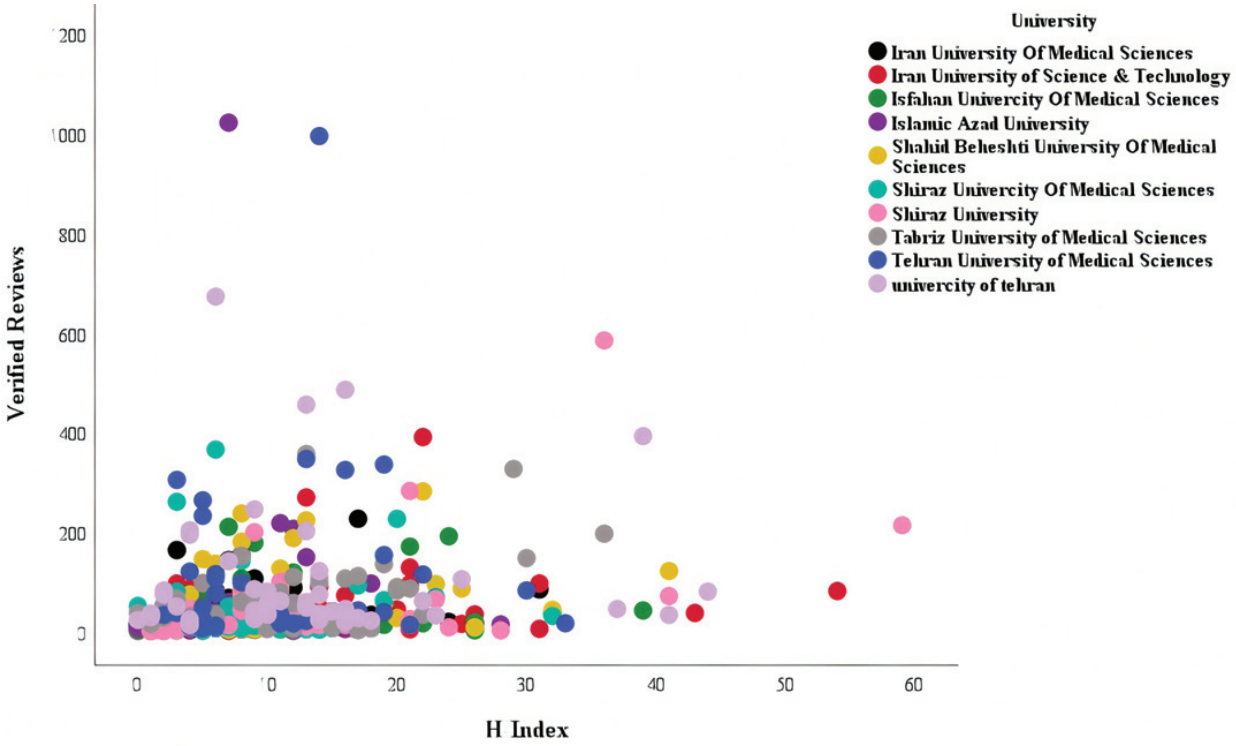

Figure 1. Significant relationship between H-index and verified reviews.

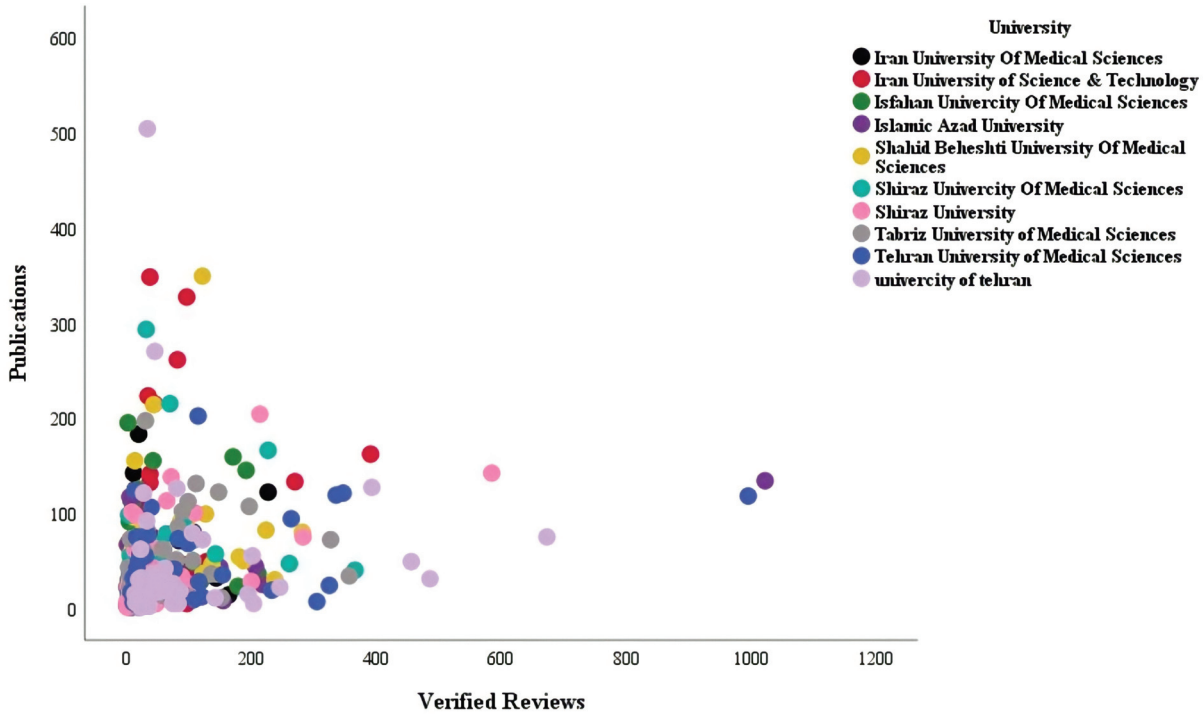

Figure 2. Significant relationship between publications and verified reviews.

the technical nature of the subjects covered by this institution and the poor acceptability of women in these fields. In general, when it comes to gender segregation, the low representation of women in the majority of institutions is consistent with Ortega's (2017)[5] study. According to Ortega, men researchers get the most reviews. One explanation for the low representation of women in review is that editors-in-chief may be less likely to pick women to review, maybe because women are more stringent in their assessments than men[17-18]. Additionally, the University of Isfahan has a nearly equal proportion of female and male scholars. Thus, the disparate findings on the presence of male and female researchers at Publons are likely owing to a variety of circumstances, including disparate populations of male and female researchers in universities, and women's

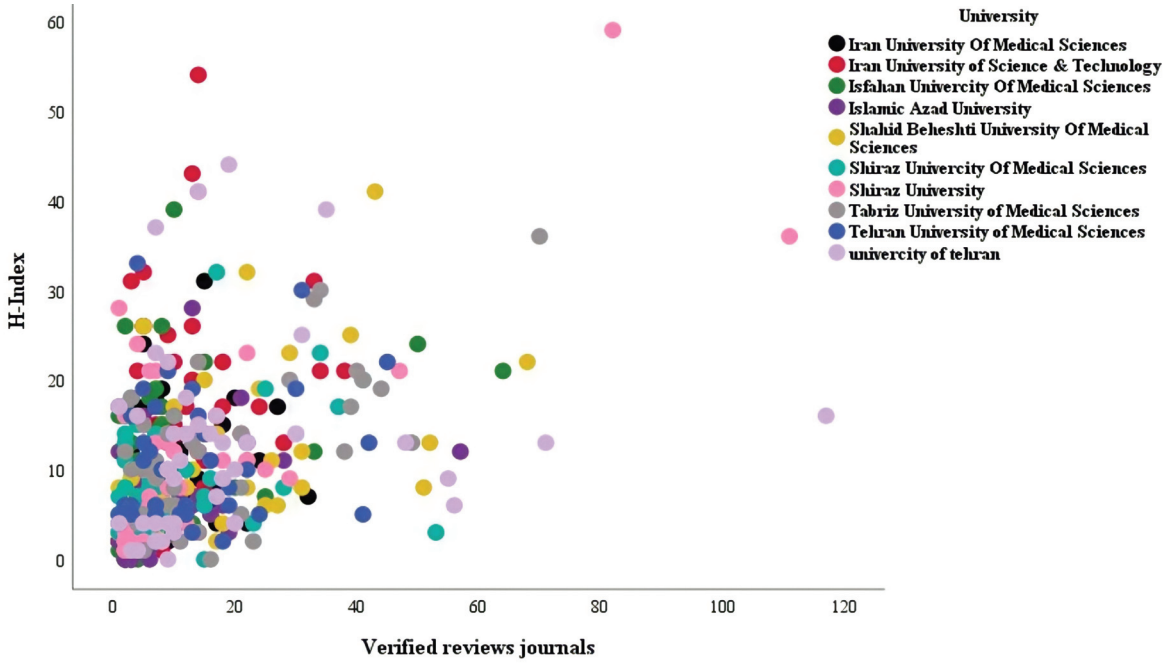

Figure 3. Pearson correlation test between H-index and reviewed journals.

lower willingness to attend Publons. The findings indicated that Iran University of Science and Technology has superior quantitative and qualitative performance due to its large number of products, citations, and H-index. Meanwhile, the Islamic Azad University was ranked third among the top ten institutions in terms of user presence on Publons. However, in terms of quantity and quality of products, as well as the limited number of journals examined by these academics, it ranks poorly. The findings of this study indicate that there are significant correlations between products and H-index and the number of reviews and H-index and reviewed journals in some institutions, which is consistent with the findings of Ortega (2017)[5] and indicates a direct relationship between reviewers' activity and their products and scientometric indicators. Indeed, writers with a greater number of scientific publications may be more interested in evaluating submissions, or editors-in-chief of journals often chose authors with a large number of scientific publications and a good reputation as reviewers (high H-index). On the other hand, article review is a necessary ability for developing into an expert in a certain subject of study. This capacity strengthens the researcher's analytical abilities and aids in the future writing of a great paper, and of course, editors-in-chief of various journals will choose reputed researchers for evaluation. On the other hand, no association was discovered between reviewers' activity and scientometric indicators at certain institutions, indicating that the capacity and dedication of academics to evaluate research articles is unrelated to their scientific performance and influence. These findings indicate that the best reviewers are not always those with the highest scientometric scores; rather, the quality of reviewers' activities is contingent on other characteristics[19].

7. CONCLUSION

Appropriate reviewer selection is critical for increasing the quality of journals. Publons is a platform for scholars to advertise their availability as reviewers for other journals worldwide. Additionally, this platform demonstrates their scientific abilities in providing accurate critiques of articles and ensuring fair evaluation in the worldwide community. Additionally, editors-in-chief of various journals may use this platform to find the finest reviewers for their publications. However, the findings of this study indicate that Iranian institutions do not have a desirable presence on Publons, and it is necessary for relevant authorities to take measures to address this issue, such as creating awareness and training campaigns to help institutions recognise the benefits of Publons and, ultimately, membership in this platform. Additionally, researchers must be educated in review techniques.

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CONTRIBUTORS

Ms Fereshte Nojavan is a PhD student in information retrieval in the Department of Knowledge and Information Science, University of Isfahan, Isfahan, Iran. She obtained Master degrees Knowledge and Information Science from Shahid Beheshti Univeristy, Tehran, Iran. She is also working as expert in scientometrics, indexing and publishing at Negah Institute for Scientific Communication, Tehran, Iran. Her research interests include scientometric, altmetric, social media.
Her contributions in the current study are: Research framework, methodology, data collection, analysis, and writing.

Mr Amir Ghasemian has received his Master of Knowledge and Information Science from Shahid Beheshti Univeristy, Tehran, Iran. His areas of interest include: Bibliometrics/ scientometric and altmetric.
His contributions in the current study are: Literature study and data collection.

Dr Amir Reza Asnafi is an Associate Professor at the Department of Knowledge and Information Science, Shahid Beheshti Univeristy, Tehran, Iran. He is also the Director of the Department of Knowledge and Information Science and the Research Assistant at the Faculty of Education and Psychology, Shahid Beheshti University. His research interests include: Scientometric, altmetric and archival science.
He contributes to this study through research supervision and writing review.

Mohammad Javad Zarei Morad Haseli has received his Master of Knowledge and Information Science from Shahid Beheshti Univeristy, Tehran, Iran. His areas of interest include: Scientometric and archival science.
He has collected the data for this paper.