The Effect of Altmetrics Indices on the Scientometric Scores of the Most Prolific Authors in the Field of Environment

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ABSTRACT: Background and Objectives*: social networks as one of the essential communication tools with their capabilities and facilities affect various aspects of scientific activities. social networks are based on interaction, collaboration, and partnership. Although the vast majority of these networks are used for entertainment purposes, other aspects of their functions are currently of great interest. (Mastromatteo, 2010). some networks have become specific and have been created for particular purposes (scientific, recreational, etc.), for example, ResearchGate and Academia, which have been set up to share and collaborate scientific information among researchers. According to Ponte & Simon (2011), a third of professionals and researchers use scientific, social networks. The growing trend towards these networks is tangible among them. But the extent to which Iranian researchers keep up to date with new Communication technologies and use them only to interact with scientific issues is a challenge that is always raised due to changes in the digital world.*

On the other hand, there is evidence that the membership of researchers affiliated with research organizations in scientific and social networks and the sharing of articles or links related to their access increases the number of visits to the websites of relevant organizations.

In some cases, the percentage of evaluation of such articles through search engines has increased) Kelly & Delasalle, 2012). Therefore, in this study, we try to determine the presence and activity of Iranian researchers in the research gate and the relationship between obtaining citations in Scopus, Web of Science, Google Scholar, and Altmetrics indicators from the research gate.

Keywords: Altmetrics, Scopus, Web of Science, Google Scholar, ResearchGate, Visibility

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Methodology

This study is an applied research and survey that has been done using scientometric methods with the Altmetrics approach. The sample was Iranian researchers in the field of environment who had an indexed document in the Scopus database from 2010 to

2019. Firstly, the top 158 Iranian researchers in the field of the environment were identified through the Scopus database, and data were collected from their profiles in 2021. In addition, the necessary information and data were collected from their profiles in the ResearchGate as Altmetrics indicators. Data analysis was performed in two sections: descriptive statistics and inferential statistics. In the descriptive statistics section, statistics such as the frequency of highly productive researchers, and the mean and standard deviation of variables in different groups were used to describe the dispersion and expression of general characteristics of society. In the inferential statistics section, the relationships between variables were examined, and statistical tests were performed to investigate the significance of these relationships.

Findings

Comparison of h-index, number of citations, and number of documents in Scopus, Web of Science, Google Scholar, and ResearchGate databases showed that the highest average h-index is from ResearchGate, which is 24.39. On the other hand, the highest average number of citations is from Google Scholar and is 3407.89. Also, the highest average number of publications is from ResearchGate and is 118.91. Hypothesis testing showed that between the indicators of interest score, citations, readers, followers, publications, and RG score in the research network social network with the indicators of the number of publications, citations, H-index, and co-authorship in the database, there is a significant relationship between Scopus and the indexes of the number of publications, citations, H-index, and co-authorship in Scopus. There is also a meaningful relationship between the RG score, citations, readers, followers, publications on the ResearchGate with the indicators of the number of citations and h-index on Web of Science.

Testing the third hypothesis showed a significant relationship between the indicators of RG score, citations, readers, followers, and publications in the ResearchGate with the number of citations, h-index, and i10- index in Google Scholar. In contrast, recommendations and followers were not significantly related to the number of citations and h-index in the web of science database. At the same time, there was no meaningful relationship between the recommendation and following the number of citations and H-index and i10- index in Google Scholar.

Conclusion

Finally, based on the findings of this study, there is a significant relationship between the number of obtained citations in Scopus with Google Scholar and Web of Science with Google Scholar. There is also a meaningful relationship between the h-index in Scopus and Web of Science with Google Scholar. These findings show that researchers can obtain more citations in citation databases by being more active in scientific, social networks such as ResearchGate. It means that an active presence in social networks is a good solution for increasing scientific products' visibility and gaining more recognition for researchers.