Self-citation in Iran in Comparison with Other Countries

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ABSTRACT
Introduction: Self-citation is a debate in citation analysis and evaluating research performance. Aim: This study aimed to investigate the self-citation rate of Iranian scholars in comparison with scholars of other countries in the World. Methods: The scientific output of 238 countries in the time span of 1996-2017 (two recent decades) was studied from perspective of some bibliometric indicators, using “country ranking” section in SJR database for data collection. Results: Regarding self-citation rate, Iran ranked third in the world, second in Asia and first in the Middle East. However, Iran ranked 22nd in the World, second in Asia and Middle East in scientific production. Iran has self-citation rate of 36.57%, which is higher than World standard level. Conclusion: It is needed that Iranian researchers consider their research quality as well as making the appropriate context for more visibility of their works by receiving more citations from other researchers and taking other scientific visibility modes into account. Science policy-makers in Iran should consider some approaches to decreasing the self-citation rate in Iranian publications.

Keywords: Scientometrics, Self-citation, Iran, SCImago.

1. INTRODUCTION

As one of the main bibliometric and scientometric approaches, citation analysis considers the rules of relationship between citing items (texts) and cited ones (documents) and detects and traces the ways of scientific thoughts and innovations (1). Despite its capacities in monitoring scientific output, citation analysis has been curarized by some bibliometric researchers for its defects and disadvantages, including self–citation (2). As one of the unethical and biased manifestations of scientific behavior, authors cite their previous works just for increasing their citation numbers by self-citation (3). Hyland conceives self-citation as a simple way of authors’ increasing their credibility in an unnatural manner (3). More self-citation can be a sign of unethical scientific behavior. For this, 10–20% of self-citation in a scientific work is logical and acceptable (4) and self-citation more than 20% is considered as ostentation (5) and self-overpaying attitude (6). Self-citation is of main debates in the citation analyses of scientific output and knowledge performance (7). Since the authors try to guide their readers to their related works, unusual and exaggerated use of self-citation may be misguided and time-wasting.

Self-citation has opponents and supporters. Some conceived it as egoism (5) and narcissism (6) and others emphasize its necessity and inevitability (8). Ones agreeing self-citation argue that a researcher focusing deeply on a research topic needs to cite his/her previous scientific works on the topic. However, an attempt to increase one’s h-index with increase in his/her self-citation rate is a non-scientific behavior. Self-citation has been one of the main problems in citation analyses (9–10) and manifests itself as a problem in scientific evaluation processes in author, institutional and country levels (2).

As the first author in systematically evaluating self-citation, Tagliacozzo reported that the rates
of self-citation in plant physiology and neurology amounted to 6.16 and 5.17, respectively (4). Self-citing is a common behavior among Iranian authors and journals, including ones in medical sciences (11). Taheri and colleagues found a relationship between self-citation and all qualitative and qualitative measures of scientific output of faculty members working in Isfahan University of Medical Sciences (12). Ghane found that the self-citation rate was 5.61% in Iranian medical journals (13). In another study, the rate of self-citation in Iranian journals was found to increase from 8% in 2000 to 18% in 2005 (14).

In a study of 45000 Norwegian journals in a 3-year time span, it was revealed that 36% of total citations were self-citations, with significant difference in various disciplines (15). Investigation into the self-citation rates in scientific disciplines worldwide showed that the self-citation rate was 34.45% (16). Hyland found that in 70% of papers of 8 main disciplines, there was some self-citation, with biology as the most self-cited discipline that its self-citation rate amounted to 60% (17). A year-by-year downward trend was seen in self-citation rates among Chinese biomedical journals (with .092) (18).

One of reasons for self-citation could be decrease in the number of citations (2). Although Iran has a self-citation rate relatively close to that of other countries in the World, second in Asia and Middle East in 2005 (with .113) to 2007 among the studied journals (with .092) (18).

Considering an appropriate scientific performance made by Iranian scholars in recent decades, this study aimed to investigate the self-citation rate of Iranian scholars in comparison with those of other countries. This can be helpful in well monitoring and reflecting scientific production, dissemination and communication.

2. AIM

This study aimed to investigate the self-citation rate of Iranian scholars in comparison with scholars of other countries in the World.

3. METHODS

This study is a bibliometric analysis. The scientific output of 238 countries in the time span of 1996–2017 (two recent decades) was studied from perspective of some bibliometric indicators. “Country ranking” section in SJR database was used for data collection. Data were studied based on scientometric techniques of citation analysis such as published document number, received citation rate, self-citation rate, and citations per paper. Excel and SPSS were used for data analysis.

4. RESULTS

Table 1 shows top ten countries in the World with high self-citation rates and their ranks in paper number. Countries such as India, the United States, Iran and China have higher self-citation rates comparing other countries. Iran ranked third in self-citation worldwide (with 36.57%), despite being in 22nd rank in publishing scientific papers.

As Table 2 shows, despite of having the sixth rank in scientific production among Asian countries, Iran is ranked second (after China) in self-citation rate among Asian countries. India, Japan, Malaysia and Pakistan are of Asian countries with high self-citation rates, too. The top ten Middle Eastern countries in self-citation rates are shown in Table 3. Iran ranked first in this regard, followed by Turkey and Egypt.
Figure 1 depicts the trends in citation and self-citation in Iranian scientific productions comparing with its total and citable scientific output in two last decades (1996-2017). As can be seen, the trend in self-citation was upward until 2011 and downward until 2017, despite of increased trends in scientific production and citable documents. Our study showed that out of 30.24% of self-citation rate among countries in these decades, Iran share is 0.48% in total.

5. DISCUSSION

Self-citation, as a part of citing behavior (19) is one of challenges in evaluating researchers' scientific performance. It is an inevitable action with some logical reasons, such as presenting previous research findings, increasing the visibility of published works, making a work to be dynamic in citation cycle, confirming the findings and validating and providing evidence for the research at hand (20). In addition, it may result from the cumulative nature of individual research, the need for personal gratification, or the value of self-citation as a rhetorical and tactical tool in the struggle for visibility and scientific authority (21-26).

In this scientometric study, the self-citation rate in Iran's scientific publications was compared with those of the world, Asian and Middle Eastern countries. Regarding self-citation rate, Iran ranked third in the world, second in Asia and first in the Middle East. However, Iran ranked 22nd in the World, second in Asia and Middle East in scientific production during 1996–2017. The trends in citation and self-citation in Iran's publication increased from 1996 to 2011 and decreased then. One of reasons for decrease or increase in received citation could be decrease or increase in self-citation. This finding accords with that found by Biglu in which the amount of Iranian journals’ self-citation increased from 8% in 2000 to 18% in 2005 (14). The self-citation rate among world countries amounted to 30.24 in our study, in line with reported self-citation rate in 27 scientific disciplines worldwide amounted to 34.45% (16).

With a main role in total received citations and making scientific papers visible, self-citation cannot be ignored in quantitative and qualitative evaluation of scientific output. However, immoderate self-citation (4) can negatively affect the value of research literature (2). Although Iran has a self-citation rate relatively close to that of worldwide, it is higher than normal. Some approaches need to be replaced exaggerated self-citation (27).

6. CONCLUSION

It is needed that Iranian researchers consider their research quality as well as making the appropriate context for more visibility of their works by receiving more citations from other researchers. Science policy-makers should consider some applicable approaches to decreasing the self-citation rate in Iranian publications.

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