

Assessment of Scientific Production of Payamnoor University Social Sciences Based on Scientometrics and Altmetrics indicators during 2010-2020



Anusheh Andisheh Tadbir¹, Amir Reza Asnafi² and Ali Biranvand³

¹Payame Noor University, Knowledge and Information Science, Shiraz (I.R.Iran)

Anusheh_andishehtabir@yahoo.com

²Shahid Beheshti University, Knowledge and Information Science, Velenjak, Tehran (I.R.Iran)

a_asnafi@sbu.ac.ir

³Payame Noor University, Knowledge and Information Science, Jahrom (I.R.Iran)

biranvand@googlemail.com

ABSTRACT: *The current study will review and analyze the quality of scientific products in social sciences at Payame Noor University based on scientometric and Altmetrics indicators in Dimensions and Scopus from the years 2010 to 2020. This descriptive survey study was conducted with scientometric and Altmetric approaches. For data gathering, Scopus, Scival, and Dimensions were used. The current study results showed that the rate of science production of Payame Noor University scholars in the field of Social Sciences is meager and needs to change policies and create incentives for science production in this field. In the area of science production and scientific leadership, this study showed that the rate of science production of researchers at this university is meager compared to national statistics in the field of social sciences and needs to change policies and create incentives for science production in this sector. Regarding the relationship between Altmetrics indices based on the results of this study and the findings presented in the previous section, we still see uncertainty in the relationship between these two measuring instruments of science.*

Keywords: Altmetrics, Social Sciences, Iran, Payame Noor University, Scientific Productions

Received: 18 March 2022, Revised 3 June 2022, Accepted 17 June 2022

DOI: 10.6025/stm/2022/3/3/59-65

Copyright: with authors

1. Introduction

Payame Noor University is the largest governmental higher education network in Iran and is the second-largest open university in Asia and the sixth-largest in the world. In addition, as one of the leading scientific and research fields of this university, social sciences need more and more special attention in science production and increasing its citations. Therefore, the status of science production by the researchers of this university in the field of social sciences is always one of the most critical indicators in its quantitative and qualitative evaluations. Therefore, this study will review and analyze the quality of scientific products in social sciences at Payame Noor University based on scientometric and Altmetrics indicators in Dimensions and Scopus from the years 2010 to 2020.

Current research is based on the mentioned goals to answer the following questions:

1. What is the quality of scientific productions in social sciences at Payame Noor University based on citation criteria in the Scopus during the years 2010 to 2020?

2. What is the quality of scientific products in the field of social sciences at Payame Noor University based on Altmetrics indicators in the Scopus during the years 2010 to 2020?

2. Literature Review

In this section, we have tried to point out some research about co-authorship: Selajegheh and Diari (2016) a study examined the relationship between metamorphoses and SNIP citation indices, ranking of Scimago journals, Eigen Factor, and impact factor of medical science journals. The results showed a correlation between citation indices and the mean scores of metamorphoses. The researchers concluded that metamorphoses could be used as a complement to citations. Shrivastava and Mahajan (2015), in a study entitled “Relationship between ResearchGate Altmetrics indices and Scopus bibliographic indices: A case study of Punjab Chandigarh University of India,” used different indicators to examine the relationship between measured gates and index Bibliographies from the Scopus citation database. The findings of this study showed that most of the RG score criteria have a direct positive relationship with Scopus criteria, except for RG score and citation in Scopus, which offers a moderate positive correlation. It was also found that RG scores have a positive and significant correlation.

Warren, Patel, & Boyd (2019) found no relationship between citations and Altmetrics. The researchers concluded that Altmetrics indicators are insufficient to replace traditional bibliography but may provide helpful timing of publication.

Chang, Desai, & Gosain (2019) examined the relationship between metamorphosis indices and citation indices in the Journal of Pediatric Core Surgery. Over time, the metamorphic score may appear as a tool to predict future citations.

Nocera, Boyd, Boudreau, Hakim, & Rais-Bahrami (2019) examined the relationship between metamorphic scores and the number of citations in urology texts. The researchers concluded that the metamorphic score was poorly correlated with the number of citations in urological texts. Altmetrics and traditional bibliography should complement each other, not substitute when determining the impact of research dissemination.

It should be noted that regarding the impact of Altmetrics indicators on the number of citations and their relationship with each other, research has shown to a large extent that, to date, metamorphism cannot be used as an absolute substitute and predictor of citations in the evaluation of scientific texts appearance. In other words, the results may be different in different sciences. Of course, this situation should be further tested due to the novelty of the subject and the essential differences between the scientific disciplines.

3. Research Methodology

The study population of all scientific productions in the field of social sciences of Payame Noor University includes 602 items from 2010 to 2020. This descriptive survey was conducted with scientometric and Altmetric approaches. For data gathering, Scopus, Scival, and Dimensions were used. The following command was used to search for articles in the field of Social Sciences:

(AFFIL (payam* AND noor) OR AFFIL (payam* AND nour)) AND (LIMIT-TO (SUBJAREA, “SOC”)). In Scival, Payame Noor University was selected in the Institutions and Groups section, and the Subject area: Social Science filter was applied to retrieve related information.

In Dimension, Altmetrics information for every 602 articles retrieved in Scopus was searched and recorded. T-test and Pearson correlation coefficient were used to analyze the relationship between citation indices and Altmetrics indices.

In the current study, quantitative indicators of scientific productions, including the amount of international cooperation, number of authors’ articles, and the amount of scientific collaboration with researchers of Payame Noor University, were used.

Using the Altmetrics indicator, four primary and general application indices, including Usage, Capture, Social Media, and Mention, were studied. In addition, the **Field-Weighted Citation Impact (FWCI)** and the trend of citation rate per article were used in scientific productions. The number of scientific productions was calculated based on the percentage of citation points, the number of scientific productions based on Source Normalized Impact per Paper (SNIP), and the number of scientific productions based on SJR: Scientific Journal Rankings.

4. Findings

The status of scientific productions of Payame Noor University in the years 2010 to 2020 is presented based on citation indicators in Figures 1 to 4. The highest number of citations to scientific products in the field of social sciences of Payame Noor University was published in 2010 with 1657 citations. The citation per an article in 2011 was the highest, with 5.5 citations. Also, the **Field-Weighted Citation Impact (FWCI)** of scientific productions in 2011 was the highest at 0.93. In 2011, the highest indicator of scientific publications published in the top 10% of journals based on the **Field-Weighted Citation Impact (FWCI)** was 9.1, and in 2010 the highest index of scientific publications published in the top 10% of journals based on cite scores was 6.8.



Figure 1. The trend of citing scientific products in the field of social sciences at Payame Noor University during 2010 -2020



Figure 2. The trend of citation per article in scientific productions in the field of social sciences of Payame Noor University during 2010- 2020

According to the findings, most of the top scientific products of Payame Noor University between 2010 and 2020, based on citation score index, SNIP, and SJR with a frequency of 117, 119, and 144, respectively, have been published in 75% of top journals.

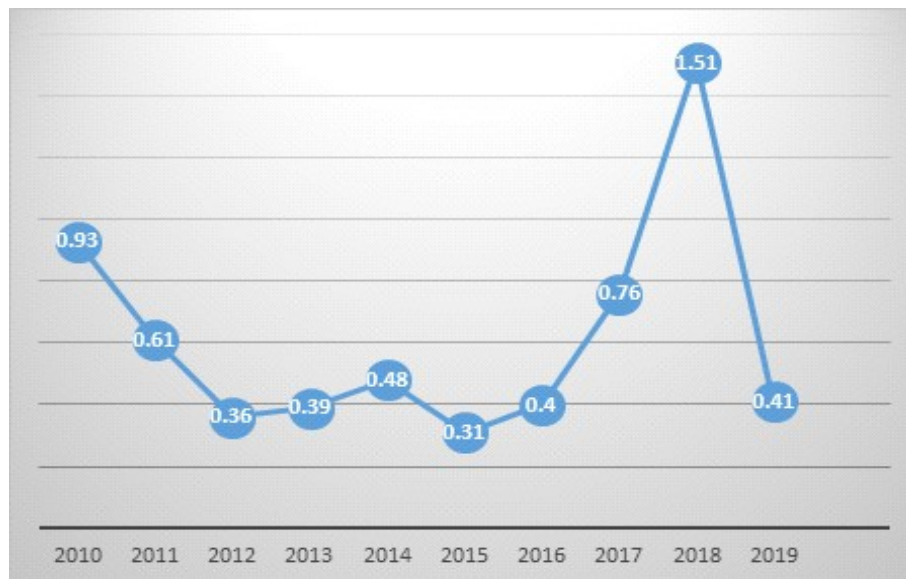


Figure 3. The trend of thematic weighted citation effect of scientific productions in the field of social sciences of Payame Noor University during 2010-2020

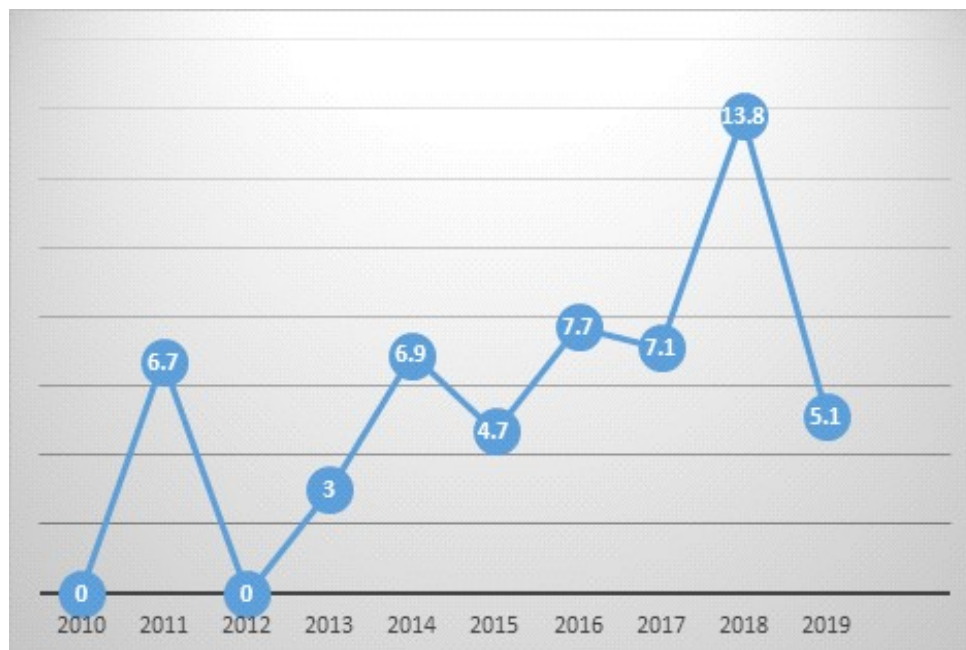


Figure 4. Trend of scientific production index published in 10% of top journals based on citation scores in the field of social sciences of Payame Noor University during 2010-2020

The findings showed that most articles were published in Q3 journals based on the classification of journals published with the quarter indicator.

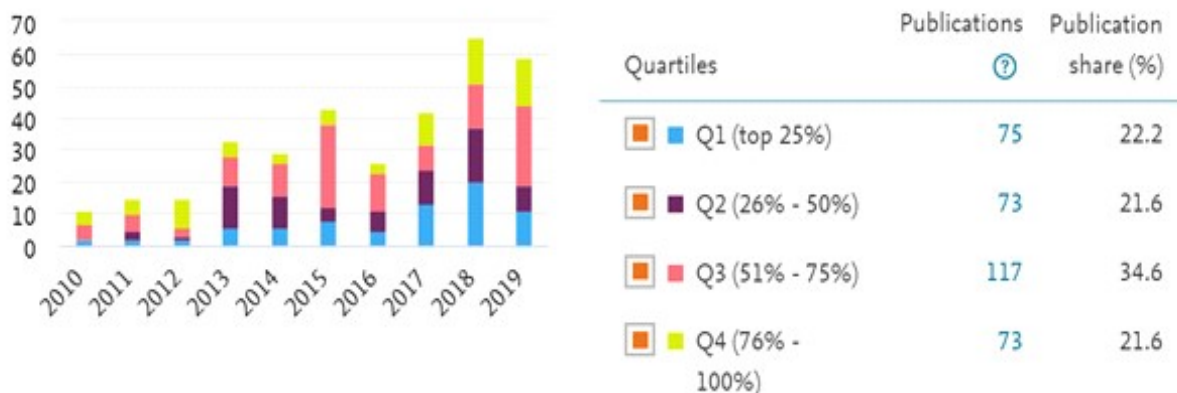


Figure 5. Number of scientific documents published in the field of social sciences of Payame Noor University in top journals based on the Quartile index

Percentage of citation points	SNIP	SJR	Top percentage
2	0	0	1
9	10	5	5
12	12	11	10
52	52	48	25
73	95	144	50
117	119	144	75

Table 1. Number of scientific documents published in the field of social sciences of Payame Noor University in top journals

Altmetrics indicators of scientific documents studied in Scopus were measured in 4 areas of application: 4 areas of Usage, Capture, Mention, and Social Media. The highest frequency was observed in the abstract with 63944 and an average of 106.57 views per article.

In examining the correlation between the number of citations to documents by observing the abstract, it was found that there is a weak and direct correlation ($r = 0.20$, $p = 0.002$). There was a weak and direct correlation between the citation rate of documents and external links, but this correlation was not significant ($r = 0.08$, $P = 0.32$). It was found that there is a direct and significant correlation between these two indicators ($r = 0.54$, $P > 0.000$). It was found that there was a weak correlation, but this correlation was not significant. ($r = 0.08$, $P = 0.31$).

5. Conclusion

Payame Noor University, as one of the largest universities in Iran, is always considered in terms of various indicators. The current study results showed that the rate of science production of Payame Noor University scholars in the field of Social Sciences is meager and needs to change policies and create incentives for science production in this field. In the field of science production and scientific leadership, this study showed that the rate of science production of researchers at this university is meager compared to national statistics in the field of social sciences and needs to change policies and create incentives for

Indicator	Sub indicator	Frequency	Mean
usage	Clicks	1	1
	Downloads	8	0.01
	Views	0	0
	Library Holdings	0	0
	Plays	0	0
	Abstract Views	63944	106.57
	Collaborators	0	0
Capture	Full Text Views	14266	23.78
	Link Outs	8239	13.73
	Bookmarks	0	0
	Favourites	0	0
	Followers	0	0
	Forks	0	0
	Readers	17917	29.86
social media	Exports/Saves	4010	6.68
	Subscribers	0	0
	Watchers	0	0
	Likes	2	0
	Shares, Likes & Comments	667	1.11
	Ratings	0	0
	Recommendations	0	0
mention	Scores	0	0
	Tweets	51	0.09
	Blog Mentions	2	0
	Comments	0	0
	Forum Topic Count	0	0
	Gist Count	0	0
	News Mentions	0	0
Q&A Site Mentions	0	0	
References	0	0	
Reviews	0	0	

Table 2. Altmetrics indicators of scientific products in the field of social sciences, Payame Noor University, 4 areas of Usage, Capture, Mention and Social Media

Exports/Saves		Readers		Link Outs		Abstract Views		Citation Rate
P value	r	P value	r	P value	r	P value	r	
0.08	0.31	>0.000	0.54	0.32	0.08	0.002	0.20	

Table 3. Examining the correlation between Altmetrics indicators and the amount of citations

science production in this sector. Regarding the relationship between Altmetrics indices based on the results of this study and the findings presented in the previous section, we still see uncertainty in the relationship between these two measuring instruments of science. Therefore, in addition to strengthening the traditional infrastructure of science assessment indicators and the infrastructure of Altmetrics, one should be very careful about prescribing it as an alternative way to evaluate scientific products. Altmetrics indicators should be considered only as a complement to Scientometrics indicators.

Practical suggestions

- Adoption of incentive policies for publishing articles in thematic quality journals by research policymakers of Payame Noor University

- Development of skills training in the use of scientific, social networks by research policymakers of Payame Noor University
- Adoption of policies for quantitative growth of scientific productions in the field of social sciences by research policymakers of Payame Noor University.

References

- [1] Chang, J., Desai, N., & Gosain, A. (2019). Correlation between altmetric score and citations in pediatric surgery core journals. *Journal of Surgical Research*, 243, 52-58.
- [2] Nocera, A. P., Boyd, C. J., Boudreau, H., Hakim, O., & Rais-Bahrami, S. (2019). Examining the correlation between Altmetric score and citations in the urology literature. *Urology*, 134, 45-50.
- [3] Shrivastava, R., Mahajan, P. (2015). Relationship amongst ResearchGate altmetric indicators and Scopus bibliometric indicators. *New Library World*.
- [4] Warren, V. T., Patel, B., & Boyd, C. J. (2020). Analyzing the relationship between Altmetric score and literature citations in the Implantology literature. *Clinical Implant Dentistry and Related Research*, 22 (1) 54-58.
- [5] Salajegheh, M., Diari, S. (2016). The Relationship between Altmetrics and SNIP, SJR, Eigenfactor and IF of Medical Science Journals. *National Studies on Librarianship and Information Organization*, 27 (2) 167-180.