

Mendeley Readership and Scopus Citation: A Comparison Study in Nursing

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Abstract

The quantitative research study used scientometrics methods to compare the readership of nursing journal articles shared on Mendeley and the frequency of citations of these articles in Scopus. The sample size included all articles published in 110 nursing journals over two years, and the data was collected using Mendeley Altmetrics, Scopus citation analysis, and SCImago Journal Rank list. The frequency of readership on Mendeley and the frequency of citations in Scopus were analyzed using Spearman's test and SPSS software. The results showed a positive and significant correlation between the frequency of readership in Mendeley and the frequency of citations in Scopus, with a moderate relationship between them. The Spearman's test result was 0.649 for the first year and 0.539 for the second year, at a significance level of 0.001. The study concluded that Mendeley and Scopus can be used to evaluate the quality of articles and ranking journals. However, qualitative evaluation is also needed to determine the appropriate measurement tools and their prioritization. The study suggests that the results can be used by researchers, editors, and publishers to evaluate the impact of their work and to make informed decisions about future publishing strategies.

Keywords: Scientometrics, Citation, Readership, Scopus Journal Report (SJR), Altmetrics, Mendeley, Scopus, Scientific Articles, Nursing Journals.

Introduction

In the past, researchers would publish their articles in various journals, and using scientific social networks for publishing research was not prevalent. The impact factor was the primary method used to evaluate the value of articles, which was calculated by measuring the average number of citations for articles each period. However, the procedures for assessing scientific productions have changed with the evolution of scientific publishing methods. Nowadays, scientometrics experts argue that evaluating the effectiveness of a published scientific product solely based on the impact factor has certain limitations. These limitations include a delay in publication and citation and the assumption that all articles published in a particular journal have the same quality. With the growth of scientific social networks, new evaluation criteria have been developed, including Altmetrics. Universities and scientific institutions globally are

searching for ways to accurately measure the scientific value of various sources and scientists. The h-index, journal impact factor, Altmetrics, cyber-metrics, and webometrics are now used as tools for scientific evaluation (Roemer & Borchardt, 2012). Altmetrics, proposed by Priem, Taraborelli, Growth and Neylon (2010), is a new and complementary approach to traditional methods in evaluating the value and effectiveness of scientific resources. This method evaluates scientific production based on the number of views on social web environments. Altmetrics is a part of webometrics and considers the number of readers of scientific resources in online social networks. It can evaluate scientific production that traditional methods cannot measure effectively. This article compares evaluations made by traditional (citation) and novel (readership) methods in the nursing field. The main issue addressed in this research is the challenge of measuring the effectiveness of scientific resources in areas where articles are primarily practical and not cited, such as nursing. Citation analysis tools often result in incorrect measurements in such fields. This study aims to solve this problem by measuring and comparing the effectiveness of nursing articles using Altmetrics and citation analysis tools. The research investigates the correlation between readership and citation rate of nursing articles in Mendeley and Scopus over two years. The specific questions addressed in this study are:

- A) What is the frequency of readership of nursing articles in Mendeley based on the type of journal, profession, and educational level of the readers?
- B) Is there a relationship between the frequency of readership of nursing articles in Mendeley and the frequency of citations to these articles in Scopus?
- C) What is the difference between the frequency of readership of nursing articles in Mendeley in two years?
- D) What is the difference between the frequency of citations to nursing articles in Scopus in two years?

To our knowledge, no prior research has investigated the correlation between readership and citation in nursing. This study will contribute to a better understanding of the effectiveness of nursing articles and provide insight into how to evaluate scientific production in practical fields.

Literature Review

This research has been extensively studied, with numerous studies exploring different aspects of the topic. For instance, Zahedi (2014) conducted a study that analyzed Mendeley's readership of articles published in 43 Iranian journals indexed in SJR and compared it with the citation rate in the Web of Science (WoS). The aim was to understand these articles' influence, visibility, and downloads in Mendeley and their correlation with the citation rate in WoS. Thelwall, Haustein, Larivière and Sugimoto (2013) suggested that publishers and scientometrics practitioners should consider the influence of time when using Altmetrics to rank articles. Additionally, Mohammadi and Thelwall (2014) compared the number of Mendeley readerships across different social sciences and humanities fields. Costas, Zahedi, and Wouters (2014) found a positive but weak correlation between citations and Altmetrics views. Hammarfelt (2014) analyzed the coverage of Altmetrics and its impact on articles and books in the field of humanities.

Furthermore, Mohammadi, Thelwall, and Kousha (2015) investigated the markup of

academic publications in Mendeley, while Thelwall and Wilson (2015) explored the correlation between readership in Mendeley and citations in the medical field. Zahedi & Haustein (2018) investigated the relationship between bibliographic characteristics, citations, and the number of readerships of scientific sources in Mendeley. Asemi and Heydari (2018) examined the correlation between citing articles in WoS and the readership of these articles in Mendeley and ResearchGate. Askeridis (2018) studied the relationship between the h-index and the number of readerships and citations. Several studies have investigated the relationship between research criteria and quality. Herrmannova, Patton, Knoth and Stahl (2018) focused on the number of citations and readerships of scientific research in Mendeley and found that the number of citations is a better indicator of research quality than readerships. In a separate study, Abbas, Aman, Nurunnabi and Bano (2019) emphasized the increased importance of assessing the impact of research articles and the role that social media networks have played in expanding the impact assessment of scientific research by providing free access to scientific publications. Costas et al. (2019) and Yu, Cao and Murata (2019) have also investigated the global patterns of readership performance in Mendeley, comparing it with citation performance.

Other researchers, such as D'Angelo and Di Russo (2019) and Eldakar (2019), have studied the readership situation in Mendeley. Tang, Tseng and Vann (2020) analyzed the number of citations and readership status of articles in Mendeley. Nath, Jana and Kerketta (2020) conducted a comprehensive analysis of Mendeley categories based on readership, focusing on PLOS articles. Nath, Jana and Santra (2021) also examined the characteristics of readers in Earth and Planetary Sciences in Mendeley. Seyyedhosseini, Khosravi, Assadi, Jokar and BasirianJahromi (2021) performed an Altmetrics study to compare the readership of articles and the citation rate, examining nuclear medicine topics. Akella, Alhoori, Kondamudi, Freeman and Zhou (2021) examined the first indicators of scientific impact, specifically the prediction of citation rates. Khan et al. (2021) measured the impact of biodiversity datasets, focusing on data reuse, citations, and readership of articles. Congleton et al. (2022) analyzed the number of citations and readership of articles in a specialized scientific journal, finding that the amount of readership is a more general measure of article or author impact. They emphasized that readership and citations should be considered distinct criteria for evaluating resource quality. However, despite the numerous studies conducted on Altmetrics, there is a lack of research in nursing. This study aims to measure the readership of articles in nursing journals in Mendeley and compare it with the frequency of citations in Scopus.

Materials and Methods

The current study employed a descriptive research design. Purposeful sampling was used to select the participants. The sample population consisted of all nursing articles indexed in SJR for two years. One hundred ten articles were found in the database, with 7293 articles published in the first year and 7341 articles in the second year. The data was obtained using the ISSN of the articles in Scopus. However, it should be noted that using data from beyond the second year may result in an unrealistic representation of the citation frequency. Table 1 summarizes the sample population, sampling method, and sample size.

Table 1
Sampling

Sample population	Published articles in nursing
Method of sampling	1. The list of all the journals of nursing was obtained from SJR (110 journals). 2. All the articles published for two years were extracted. 3. The result is the sample population of this research.
Sample size in the first year	7293 articles
Sample size in the second year	7341 articles

In the present research, the data collection tools and data analysis method are shown in Tables 2 and 3 due to the subject of the study.

Table 2
Data Collection

Tools (in respect of using)	The purpose of using
SJR database	To extract the list of nursing journals for two years
Scopus	To extract all articles for two years by using ISSN of journals to access the frequency of citations by each of the mentioned articles
Mendeley	To access the frequency of readership of each paper

Table 3
Data Analysis

Data analysis instrument	The reasons for using
Webometric Analyst software	This software combined information extracted from Scopus with information from Mendeley and the results were presented in the form of Excel tables.
Spearman test of SPSS software	To evaluate the correlation between the frequency of readership of articles and the frequency of citations by these articles

In this research, a comprehensive analysis of the nursing journals published before this study was conducted. These journals were searched through the Scientific Journal Rankings (SJR). The list of journals and their International Standard Serial Number (ISSN) was obtained, a unique eight-digit identifier used to locate a printed or electronic publication. To get the frequency of citations for each article in the journal, the ISSN of the journals was utilized to create a search formula in Scopus. This database was selected over Web of Science (WoS) as both databases use the Journal Impact Factor as their ranking factor. For data collection, we extracted the list and ISSN of nursing journals from SJR and the citation data of articles from Scopus. The search formula was created using the ISSN of the journals in the advanced search option of Scopus. The search formula used in the study is illustrated in Figure 1.

ISSN(0891-0162 OR 0103-2100 OR 0161-9268 OR 1527-7941 OR 1062-3264 OR 0002-936X OR 0897-1897 OR 1657-5997 OR 0883-9417 OR 1976-1317 OR 1592-5986 OR 1036-7314 OR 0813-0531 OR 1038-5282 OR 1557-1459 OR 1099-8004 OR 0730-7659 OR 0162-220X OR 1538-2931 OR 1092-1095 OR 1054-7738 OR 0887-6274 OR 1322-7696 OR 1037-6178 OR 0899-5885 OR 0279-5442 OR 0961-5423 OR 1474-5151 OR 1462-3889 OR 1042-895X OR 0197-4572 OR 0147-9563 OR 0887-9311 OR 1755-599X OR 1445-8330 OR 2047-3087 OR 1322-7114 OR 0020-7489 OR 1541-5147 OR 0020-8132 OR 1088-4602 OR 0309-2402 OR 1041-2972 OR 1055-3290 OR 0889-4655 OR 1367-4935 OR 0962-1067 OR 0737-0016 OR 0022-0124 OR 0099-1767 OR 1074-8407 OR 0098-9134 OR 1522-2179 OR 0890-3344 OR 2005-3673 OR 1526-9523 OR 0888-0395 OR 0002-0443 OR 1057-3631 OR 0148-4834 OR 0966-0429 OR 1682-3141 OR 1527-6546 OR 0891-5245 OR 0882-5963 OR 1043-4542 OR 1089-9472 OR 0893-2190 OR 8755-7223 OR 1351-0126 OR 0279-3695 OR 1059-8405 OR 1539-0136 OR 0965-206X OR 1043-6596 OR 1071-5754 OR 0884-2175 OR 1742-7932 OR 0361-929X OR 0266-6138 OR 1526-744X OR 0029-6465 OR 1362-1017 OR 0363-3624 OR 0260-6917 OR 0969-7330 OR 1441-0745 OR 1320-7881 OR 0029-6554 OR 1466-7681 OR 0029-6562 OR 0894-3184 OR 0190-535X OR 0744-6020 OR 1524-9042 OR 0031-5990 OR 1012-5302 OR 0737-1209 OR 0278-4807 OR 1940-4921 OR 0160-6891 OR 1541-6577 OR 0080-6234 OR 0193-9459 OR 1871-5192 OR 2165-0799 OR 1545-102X)

Figure 1: Search Formula in Scopus

According to the formula outlined above, the data was extracted from a Scopus advanced search and stored in an Excel file. The frequency of readership of these articles was then determined using the Webometric analyst software and the information obtained from Scopus. The entire process is outlined in detail in Table 4.

Table 4
Research Procedure

No.	description	purpose
1	Extraction of the list of all nursing journals using SJR	Accessing the name and ISSN of journals
2	Creating search formula in Scopus using ISSN for journals	Accessing the frequency of citations by these articles
3	Transferring the obtained information from Scopus to Webometric analyst software	Accessing the frequency of readership of each paper
4	Extracting the results of Webometric analyst software and analyzing them using the Spearman test	Finding the correlation between the frequency of readership of articles and the frequency of citations by them

Results

The results of the research questions are presented in five sections. Section 1 examines the frequency of readership in Mendeley based on publication type, profession, and educational level of readers. The findings related to this question are divided into two parts: Table 5 presents the frequency of readerships based on the "publication type".

Table 5
Frequency of Readership According to Publication Type

Publication Type	1 st year	2 nd year
paper	5656	5716
Article being printed	1	31
book	1	0
Conference paper	7	35
editorial	580	545
errata	54	70
letter	21	237
note	267	299
review	455	478
Short consideration	60	49
Other types	5	9

Table 5 demonstrates that many readers in both years preferred reading papers. This is followed by editorials and reviews, which also had many readers. These results suggest that readers prefer reading papers as they conduct their research. Consequently, papers are expected to receive more citations than editorials and reviews. This is because papers contain valuable research information that readers seek for academic or professional purposes. Table 6 showcases the "educational level and profession of readers.

Table 6
The Mean Readership Per Year

Educational level and major	Period	Mean of readership
Post-doctoral graduates	1st year	3.79
	2nd year	12.33
Ph.D. graduates	1st year	25.38
	2nd year	18.44
Ph.D. students	1st year	5.28
	2nd year	6.41
MA or MSc graduates	1st year	5.08
	2nd year	9.46
MA or MSc students	1st year	4.23
	2nd year	8.02
Academic researchers	1st year	8.47
	2nd year	5.13
Non-academic researchers	1st year	11.24
	2nd year	5.63
Professors	1st year	10.26
	2nd year	5.56
Librarians	1st year	2.15
	2nd year	5.16
Lecturers	1st year	9.54
	2nd year	1.44

The data in Table 6 highlights the relationship between the educational level and readership

of nursing articles on Mendeley. It is shown that post-doctoral graduates have the highest mean of readership in both years, indicating that these individuals are the most frequent users of Mendeley to access nursing articles. Additionally, non-academic researchers are also found to have a high number of readerships in both years, suggesting that professionals in the field of research are also actively utilizing this platform.

Table 7 provides further insights into the distribution of citations to the resources studied in the first year. It can be seen that 7,293 citations were recorded in the first year, with the maximum citation rate for a resource reaching 495 times. The average citation rate for these resources is 7.47 times, indicating that the information contained in these resources is deemed valuable and is frequently referred to by others in the field. Overall, these results suggest that Mendeley is a popular platform for professionals and researchers in the nursing field, particularly those with a higher educational level and those working in non-academic research. The high citation rate also indicates that the resources available on Mendeley are considered credible and relevant to the field.

Table 7
Frequency of Citations in the 1st Year

N	Valid	7293	
	Missing	5	
	Mean	7.47	
	Mode	0	
	Std. Deviation	13.308	
	Minimum	0	
	Maximum	495	
	Percentiles	25	1.00
		50	4.00
		75	10.00

As indicated by Table 8, out of all the articles cited in Scopus, 5360 cases have a negative frequency of readership, meaning that these articles are not present in Mendeley. As a result, these articles have been excluded from the current study. The rest of the analyses in the study have been presented without considering these articles.

Table 8
Frequency of Citations in the 1st Year after Removing Articles with a Readership Frequency Of -1

N	Valid	1935	
	Missing	1	
	Mean	16.10	
	Mode	0	
	Std. Deviation	16.575	
	Minimum	0	
	Maximum	301	
	Percentiles	25	1.00
		50	14.00
		75	21.00

Table 9 provides an overview of the distribution of the number of citations received by each

article in the second year in the database. The table displays the frequency of citations, showing how often articles have been referenced or used as a source by other articles in the same period. This information helps measure each article's impact and influence and determine the most cited articles in the database. Additionally, it provides insight into the overall trends and patterns of citation behavior in the field, which can help to inform future research and development efforts.

Table 9
Frequency of Citations in the 2nd Year

N	Valid	7341	
	Missing	1	
	Mean	6.1225	
	Mode	0	
	Std. Deviation	12.44317	
	Minimum	0	
	Maximum	654.00	
	Percentiles	25	1.0000
	50	3.0000	
	75	8.0000	

The 2nd year articles were analyzed, with 1277 articles being deemed negative and excluded from the analysis. The remaining articles were analyzed and presented in Table 10. The table shows the distribution of the number of citations each article received.

Table 10
Frequency of Citations in the 2nd Year after Removing the Articles with the Readership Frequency of -1

N	Valid	6064	
	Missing	0	
	Mean	6.4822	
	Mode	0	
	Std. Deviation	9.10842	
	Minimum	0	
	Maximum	245.00	
	Percentiles	25	10000
	50	40000	
	75	80000	

The number of nursing journals in Scopus remained constant between the two years, but many journals from the first year were not recorded in Mendeley. Only 1936 papers from the first year were recorded in Mendeley, while the second year saw 6064 papers. Despite having fewer papers, the first year's articles had a higher frequency of citations, with 301 citations. This could be due to the earlier publication of these articles. In Scopus, the first year's nursing journal articles were cited 7293 times, while the second year's articles were cited 7341 times. The articles from the first year received 55,009 citations while the articles from the second year received 45,996 citations.

The relationship between the frequency of readership in Mendeley and citation in Scopus is presented in Table 11. This table compares the number of articles' readership in Mendeley and the frequency of citations these articles receive in Scopus. This table aims to examine

whether there is a correlation between the readership of articles in Mendeley and the citation of these articles in Scopus. The results of this comparison can provide insights into the impact of readership on the citation of scientific articles. They can help to inform the scientific community about the importance of increasing readership to enhance the effects of scientific research.

Table 11
Frequency of Readership in Mendeley and Citation in Scopus

Year	1st year	2nd year
The frequency of readership of articles in Mendeley	1936 times	6064 times
The frequency of citations by the articles of nursing journals in Scopus	7293 articles	7341 articles
The nursing papers with a citation frequency of - 1 (no article recorded in Mendeley software)	5360 articles	1277 articles

The Spearman test in SPSS 18 was utilized to determine the relationship between the frequency of citations and the frequency of readership of articles in both the 1st and 2nd years. The correlation between these two variables was depicted through figures. Figure 2 illustrates explicitly the correlation between the frequency of citations and the frequency of readership in the 1st year.

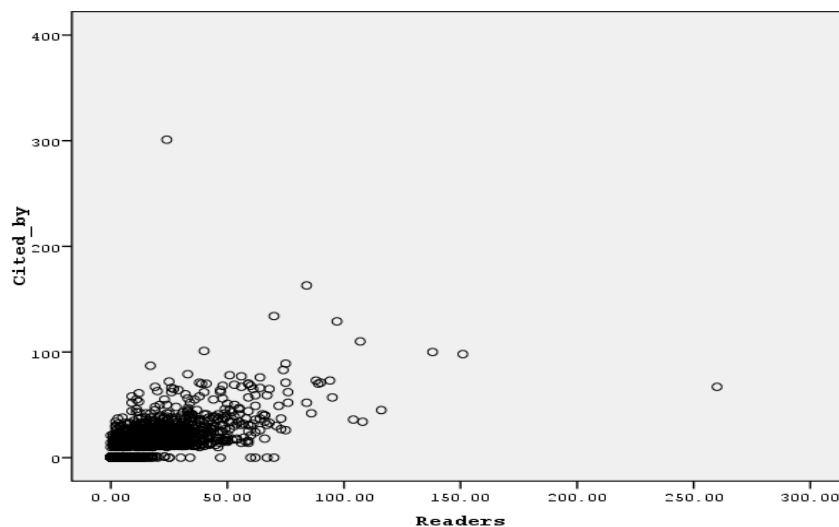


Figure 2: The Relationship Between the Frequency of Citations and Readerships in the 1st Year

Table 12 provides a numerical representation of this correlation, calculated for the 1st year.

Table 12
Correlation Between Frequency of Citations and Readerships in the 1st Year

Spearman correlation test between the number of articles read and the number of RC Year 2009	
P- Value	0.001
n	1936
Coefficient Correlation	0.649

Figure 3 illustrates the correlation between the number of citations received by articles and

the number of times they have been read during the second year. The graph suggests a positive relationship between the two variables, meaning that the more an article is cited, the more it is read by the audience. This finding highlights the significance of citation in determining the popularity and relevance of an article. Moreover, it emphasizes the importance of creating high-quality content to attract readers and receive recognition in the academic community.

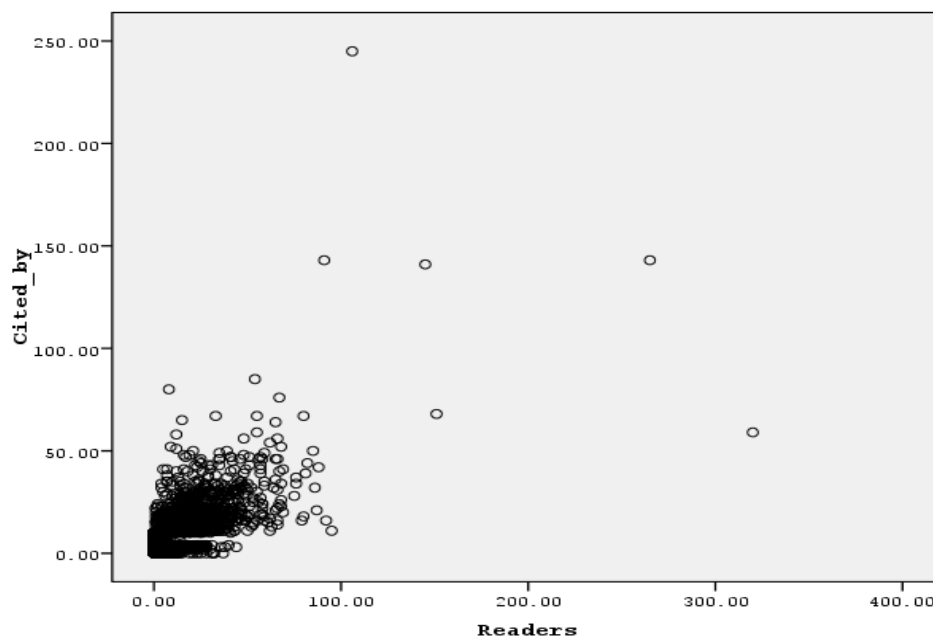


Figure 3: Relationship Between Frequency of Citations and Readerships in the 2nd Year

The results of the Spearman test indicate a moderate correlation between the number of citations received by articles and their frequency of readership. The correlation coefficients for the 1st year and 2nd year were 0.649 and 0.539, respectively, which were significant at the 0.001 level (as shown in Table 13). This level of correlation suggests a moderate relationship between these two factors, as measured by Scopus and Mendeley, even though these two measures reflect different aspects of the articles, albeit with some similarities. If the correlation were strong, the two measures would be closely aligned.

Table 13

Correlation Between the Frequency of Citations and Readerships in the 2nd Year

Spearman correlation test between readings papers and the number of RC Year 2010	
P- Value	0.001
n	6064
Coefficient Correlation	0.539

The difference in frequency of readership in Scopus between two years can be analyzed through statistical tests such as the t-test and Mann-Whitney test. The results of these tests are presented in Tables 14 and 15, providing insights into the variation in readership frequency over the two years. These results can be used to compare the frequency of readership and determine if there is a significant difference between the two years.

Table 14
T-test to Compare the Mean of Readership in Both Years

Reading of Papers	Year	N	Mean	Standard Deviation
	2009	1936	168507	1708084
	2010	6064	60261	1279314

The t-test and Mann-Whitney test data demonstrate that the variance in readership frequency between the first and second years is statistically significant. This signifies that the divergence in readership is not merely a random occurrence. To elaborate, during the first year, there were 1,936 readers out of 19,240 nursing articles stored in Mendeley, whereas in the second year, the number of readers increased to 6,064. The first year, we recorded a notably higher readership frequency than in the second year, with statistical tests affirming the significance of this disparity. This finding suggests that, in the first year, a more significant proportion of Ph.D. students, non-academic researchers, academic researchers, professors, and lecturers engaged with the articles as opposed to the second year. The elevated readership frequency in the first year can likely be attributed to the articles' earlier publication date and enhanced accessibility to the intended audience.

Table 15
Mann-Whitney Test to Compare the Frequency of Readership in Both Years

Reading of Papers	Year	N	Average Ranks	Total of Ranks
	2009	1936	5891.33	114056 15.50
	2010	6064	3396.83	205983 84.50
	Total	8000		

What is the difference between the frequency of citations in Scopus for two years?

The T-test and Mann-Whitney tests are statistical methods used to compare the frequency of citations in Scopus between two years. The results of these tests are presented in Tables 16 and 17. These tests aim to determine if there is a significant difference between the frequency of citations in the two years and, if so, to quantify the magnitude of this difference. By analyzing the data in these tables, researchers can determine if there has been a change in the number of citations over time and can draw conclusions about the impact and influence of the research each year.

Table 16
T-Test to Compare the Mean of Citations in Both Years

Reading of Papers	Year	N	Mean	Standard Deviation	Average error
	2009	1936	16.10	16.575	0.377
	2010	6064	6.48	9.108	0.117

The data presented in this text compares the frequency of articles published in nursing journals in two years and the number of times they were cited in the Scopus database. In the first year, 729 articles were published and were cited 55009 times, whereas, in the second year, 7341 articles were published and were cited 45996 times. The analysis of the data shows that the average and mean frequency of citations for the articles published in the first year was higher

than that of the second year, and this difference was found to be statistically significant through the application of the t-test and Mann-Whitney test. The higher frequency of citations in the first year can be attributed to the earlier publication of these articles. This could imply that the articles published in the first year were more widely recognized and significantly impacted the nursing community. Overall, this information highlights the importance of the timeliness of publication in terms of the impact and recognition of research in the nursing field.

Table 17

Mann-Whitney Test to Compare the Frequency of Citations in Both Years

	Year	N	Average Ranks	Total of Ranks
Reading of Papers	2009	1936	5252.77	1064119.50
	2010	6064	3600.24	21831889.50
	Total	7999		

Discussion

Evaluating scientific sources and researchers still heavily relies on the number of citations as the main criterion for determining scientific impact. However, the number of readerships is also crucial in evaluating the effectiveness of a researcher, scientific resource, and website, especially for subjects with a practical or experimental aspect. This is because many readers use these scientific resources without citing them. In nursing journals, the frequency of readership and the number of citing articles can be used as suitable factors for ranking.

With the advancement of technology and the expansion of professional communication and research workflow using the web, Altmetrics can be used as a complementary indicator and citation analysis to assess the validity of scientific articles. This is supported by the findings of Asemi and Heydari (2018), who concluded that Altmetrics could be used as a supplementary tool. The study of the reading of articles can also be used along with the study of citations as an auxiliary tool in evaluating the validity of articles. Askeridis (2018) found that the h-index strongly correlates with the reading rate, with higher h-index values indicating higher reading rates. This supports using both methods to evaluate the reading and citation rates.

On the other hand, Herrmannova et al. (2018) showed that the number of citations is a better indicator of research quality than the readership of research in Mendeley. However, the number of citations and readership should be considered in evaluating the validity and importance of articles. Costas et al. (2019) and Yu et al. (2019) conducted extensive research on Mendeley readerships and citations across different countries. Their findings indicate varying levels of performance across countries, and the citation and readership rates serve as different indicators based on the country's location. The authors propose that a framework should be developed considering the geographical location in evaluating these indicators. However, D'Angelo & Di Russo (2019) assert that Altmetrics scores only apply to articles and cannot be used as an auxiliary variable. This limitation can potentially be addressed in future studies.

On the other hand, Tang et al. (2020) argued that Altmetrics can be used as a substitute for measuring the impact factor of scientific publications. Nevertheless, this study contradicts the present research, suggesting that Altmetrics should only be used as a complementary tool, not a replacement. Nath et al. (2020) and Nath et al. (2021) support the present research by revealing a positive correlation between the rate of citation and the rate of Mendeley readership. Furthermore, their research highlights that most readers are Ph.D. students. Seyyedhosseini et

al. (2021) also support the present study by demonstrating a significant correlation between Altmetrics scores and citation indices. Lastly, Akella et al. (2021) concluded that the Mendeley readership rate could be the most essential factor in predicting citation rate, thereby supporting the positive relationship between the two variables in line with the present study's findings. According to Congleton et al. (2022), readership and citation are two distinct criteria for evaluating the impact and quality of a resource. The study found a meaningful relationship between the frequency of citations and readership.

Additionally, the study found that Ph.D. graduates perform better in reading and citing scientific texts, making it a useful factor in ranking. The frequency of readership of articles was considered a scientometrics factor and compared to citation analysis, with a correlation being established between the two. The results showed that as the frequency of readership increases, so does the frequency of citations. Therefore, it can be said that the ranking of journals based on the frequency of readership is trustworthy. Previous research also concluded that the degree of trust in the ranking of journals based on readership is consistent across fields such as humanities and medical science. Finally, the study concluded that Mendeley is a more appropriate environment for investigating the frequency of readership of scientific articles compared to other social networks and existing networks.

Conclusion

The quality of articles and journals can be evaluated with two quantitative tools: the number of citations and the number of readerships. These tools are available on various platforms and can be used to assess the quality of a scientific source, author, or researcher. However, the purpose of the evaluation is a crucial factor in determining which tool should be used for prioritization. The article's subject or the journal's thematic coverage also plays a significant role in the evaluation process. It is important to note that an article's or scientific article's content can significantly affect the evaluation results. For instance, some scientific materials may have a high readership but a low citation rate due to their type of content. In such cases, prioritizing the readership evaluation tool may be more appropriate. However, the number of citations and readerships can be used together to evaluate a scientific source comprehensively. In future studies, the results of this evaluation could be compared to the number of citations in the Web of Science (WoS) database.

Additionally, using specialized nursing databases such as PubMed to collect data would be recommended. However, it is vital to acknowledge the limitations of these quantitative tools. The number of citations and readerships only provide a snapshot of the impact and visibility of a particular article or journal. It does not take into account the quality or relevance of the content itself. Furthermore, the data collected from these platforms may also be subject to bias, as the number of citations and readerships may be influenced by factors such as the author's reputation, the popularity of the journal, and the impact of the author's network.

In conclusion, the quality of articles and journals can be evaluated by using the number of citations and readerships. However, it is essential to consider the purpose of the evaluation and the subject of the article or magazine. The results of this evaluation should be interpreted with caution, and further research should be conducted to address its limitations and improve the accuracy of the evaluation results.

Declarations

Conflict of Interest: The authors declare that there is no conflict of interest related to the publication of this article.

Ethics Approval and Consent to Participate: The authors certify that this article does not include any studies involving human or animal participants, and therefore, no ethics approval was sought.

Availability of Data and Materials: The data used in this article is available upon request from the authors.

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