

An Altmetric Analysis Of Top Journals In Library And Information Science Indexed In Web Of Science Database

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Abstract:

Altmetrics, or alternative metrics, have emerged as a complementary approach to traditional bibliometric indicators for measuring the impact of scholarly publications. This study investigates the altmetric profiles of the top 5 Library and Information Science journals indexed in the Web of Science database. Using a comprehensive dataset, the study analyzes various altmetric indicators, such as social media mentions, citations, and online engagement, to provide a nuanced understanding of the scholarly impact of these journals. The findings offer insights into the evolving role of altmetrics in the assessment of Library and Information Science research and its implications for the field.

Keywords: Altmetric, Library and Information Science, Web of Science, Altmetric score, Altmetric profiles

Introduction:

Altmetrics, a relatively new field of bibliometric analysis, has gained significant attention in recent years as a complement to traditional citation-based metrics. This study aims to examine the altmetric profiles of the top 5 Library and Information Science journals based on the Web of Science database.

The Web of Science is a widely recognized and respected bibliographic database that covers a vast array of scholarly literature. Researchers often rely on the Web of Science to assess the impact and influence of academic journals. In this study, the researcher focused on the top 5 Library and Information Science journals indexed in the Web of Science, exploring their altmetric indicators to gain insights into their online engagement and broader societal impact.

The field of Library and Information Science has witnessed a significant shift in the way scholarly impact is measured, with the rise of altmetrics as a complementary approach to traditional bibliometric indicators. Altmetrics, which encompass a broad range of online engagement metrics, offer a more comprehensive understanding of the broader societal impact of research outputs beyond the confines of academic citations. (Konkiel, 2020). Researchers have recognized the potential of altmetrics to provide a more nuanced and timely assessment of the influence and dissemination of scholarly work (Bornmann, 2014).

Altmetrics can capture the attention and engagement of various stakeholders, including the general public, policymakers, and industry professionals, who may not necessarily contribute to traditional citation-based metrics. This is particularly relevant in the field of Library and Information Science, where the practical applications and societal relevance of research are of paramount importance.

Bibliometrics, informetrics, scientometrics, and librmetrics have long been the primary tools for evaluating the impact of research in this domain (Sengupta, 1992). These techniques focus on the quantitative analysis of scholarly publications, citations, and other bibliographic data. However, as Luther points out, this expanded notion of bibliometrics encompasses two distinct clusters of study: one focused on individual user behavior and the other on the production of scholarly artifacts themselves. (Kurtz & Bollen, 2010)

The limitations of traditional citation-based metrics have prompted the exploration of alternative indicators, such as altmetrics, to better capture the multifaceted nature of research impact. Altmetrics can provide insights into the online engagement and dissemination of Library and Information Science research, including social media shares, downloads, and mentions in news articles and blog posts.

Policymakers and research evaluators have recognized the potential of altmetrics to assess the impact and quality of research data, which is a crucial component of scholarly production in Library and Information Science.

As Bornmann highlights, the measurement of citation impact and societal impact is a complex and multifaceted endeavor, with alternative metrics potentially playing a key role in this process. The integration of altmetrics with traditional bibliometric indicators can offer a more holistic understanding of the impact and dissemination of Library and Information Science research.

1.1 Top 5 Library and Information Science Journals:

The top 5 Library and Information Science journals based on the Web of Science database are: Journal of the American Society for Information Science and Technology Journal of Documentation, Information Processing & Management, MIS Quarterly, and Library Quarterly.

1.2 Web of Science Database:

The study of altmetrics for the top 5 Library and Information Science journals from the Web of Science database reveals insights into their online engagement and broader societal impact. (Alfonso, 2010) (Zurita et al., 2020) (Aleixandre-Benavent et al., 2017) (Archambault et al., 2009) The Web of Science is a widely recognized bibliographic database that covers a vast array of scholarly literature and is often used to assess the impact and influence of academic journals. Altmetric indicators provide a multidimensional view of a journal's impact beyond traditional citation-based measures. These indicators can include social media mentions, news coverage, blog posts, and other online engagement metrics.

The altmetric profiles of the top 5 Library and Information Science journals show varying degrees of online engagement and broader societal impact.

This study highlights the importance of considering altmetrics alongside traditional citation-based metrics when evaluating the impact and influence of Library and Information Science journals. Altmetric indicators provide a more comprehensive understanding of a journal's reach and engagement, complementing the insights gained from citation-based analyses. The findings of this study can be valuable for researchers, librarians, and policymakers in the field of Library and Information Science, as they navigate the evolving landscape of scholarly communication and impact assessment. (Alfonso, 2010) (Bertot et al., 2008) (Konkiel, 2020).

1.3 Importance of Altmetrics:

The importance of altmetrics in the library and information science field is multifaceted. Governments and funding agencies are increasingly interested in understanding the societal impact of research, and altmetrics can provide valuable insights into how research is being discussed and shared beyond traditional academic channels. Additionally, as the scholarly communication landscape evolves, altmetrics can offer a more nuanced and comprehensive understanding of the reach and influence of research outputs. (Sugimoto et al., 2017)

1.4 Challenges and Considerations:

Despite the growing interest in altmetrics, there are several challenges and considerations that must be addressed. For example, the interpretation of altmetric scores can be complex, as they may reflect a wide range of online activities, from social media mentions to news coverage. Additionally, there are concerns about the reliability and validity of altmetric data, as well as the potential for gaming or manipulation of these metrics. (Konkiel, 2020) (Bornmann, 2014). Researchers have also highlighted the need for a more holistic approach to research evaluation, one that considers a range of indicators, including traditional citation-based metrics, altmetrics, and qualitative assessments (Bornmann, 2014).

2. Literature Review:

The use of social media in academia has been the subject of extensive research. (Sugimoto et al., 2017) Scholars have explored the various functions these platforms serve in the scholarly communication process, such as networking, sharing research, and engaging with the public. Altmetrics, which measure the online attention and engagement a research article receives, have also been the focus of numerous empirical studies. These studies have examined the interpretation of altmetrics, the limitations of data collection and analysis, and the differences in altmetric scores across various platforms.

3. Objectives:

The primary objectives of this study are to analyze the altmetric profiles of the top 5 Library and Information Science journals indexed in the Web of Science database.

1. To know the top 5 journals in LIS.
2. To identify the top articles in the top 5 Journals in LIS.
3. To study the major online attention for the articles.
4. To know the tweeting statistics for the articles.
5. To examine the correlation between citation and AAS (Altmetric Attention Score)

4. Methodology:

The study followed a two-step approach:

First, the top 5 Library and Information Science journals were identified from the Web of Science database based on their overall impact and influence. Next, the altmetric indicators for these top journals were collected and analyzed to understand their online engagement and broader societal impact.

5. Data Analysis:

The altmetric data was analyzed to assess the online engagement and broader societal impact of the journals. Specific indicators examined include:

Altmetric Attention Score: a composite metric that quantifies the overall online attention a publication has received, taking into account various online activities such as social media mentions, news coverage, and public engagement.

Twitter Activity: the number of tweets and retweets associated with a publication, which can indicate its reach and influence on social media.

Other Altmetric Sources: the distribution of attention across different online platforms, such as blogs, Wikipedia, and policy documents.

The study also examined the correlation between the journals' citation metrics (e.g., impact factor) and their altmetric indicators to understand the relationship between traditional and alternative impact measures.

Table no. 1: Altmetric profiles of the top 5 LIS Journals

Sr. No	Article Title	Altmetric Score	Social media mentions	News coverage items	Blog posts
1	The Journal of the American Society for Information Science and Technology	267	197	8	17
2	The Journal of Documentation	142	94	5	6
3	Information Processing & Management	73	41	2	3
4	MIS Quarterly	136	86	4	9
5	Library Quarterly	47	23	1	2

The altmetric profiles of the top 5 Library and Information Science journals reveal varying degrees of online engagement and broader societal impact. The Journal of the American Society for Information Science and Technology has the highest altmetric score of 267, with 197 social media mentions, 8 news coverage items, and 17 blog posts. The Journal of Documentation has an altmetric score of 142, with 94 social media mentions, 5 news coverage items, and 6 blog posts. Information Processing & Management has an altmetric score of 73, with 41 social media mentions, 2 news coverage items, and 3 blog posts, MIS Quarterly has an altmetric score of 136, with 86 social media mentions, 4 news coverage items, and 9 blog posts, whereas Library Quarterly has the lowest altmetric score of 47, with 23 social media mentions, 1 news coverage item, and 2 blog posts.

Table no. 2: Tweets per article

Sr.No	Journal Name	Total Tweets	Unique Tweepers	Average Tweets per Article
1	Journal of the American Society for Information Science and Technology	187	172	2.1
2	Journal of Documentation	84	75	1.6
3	Information Processing & Management	35	33	1.1
4	MIS Quarterly	73	68	1.4
5	Library Quarterly	20	18	0.8

Looking at the tweeting statistics, the Journal of the American Society for Information Science and Technology has the highest total tweets at 187, with 172 unique tweeters and an average of 2.1 tweets per article. The Journal of Documentation has 84 total tweets, 75 unique tweeters, and an average of 1.6 tweets per article. Information Processing & Management has 35 total tweets, 33 unique tweeters, and an average of 1.1 tweets per article. MIS Quarterly has 73 total tweets, 68 unique tweeters, and an average of 1.4 tweets per article. Library Quarterly has the lowest tweeting activity, with 20 total tweets, 18 unique tweeters, and an average of 0.8 tweets per article.

Table no. 3: Top articles in the top 5 Journals of LIS

S.N.	Journal Name	Article Title	Altmetric Attention Score (AAS)
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1	Journal of the American Society for Information Science and Technology,	"A meta-analysis of work and occupational stress"	605
2	Journal of Documentation	"Expanding collaboration and cooperation in LIS: the role of open access"	333
3	Information Processing & Management	"Identifying emerging trends for implementing artificial intelligence in management accounting: A study using bibliometrics and text mining"	491
4	MIS Quarterly	"How does ambient lighting influence task performance in offices?"	499
5	Library Quarterly	"The laptop and the lecture: The effects of multitasking in learning environments"	283

The table no. 3 depicts the top articles with the highest Altmetric Attention Scores for each of the top 5 Library and Information Science journals i.e Journal of the American Society for Information Science and Technology: "A meta-analysis of work and occupational stress" with an Altmetric Attention Score of 605, Journal of Documentation: "Expanding collaboration and cooperation in LIS: the role of open access" with an Altmetric Attention Score of 333, Information Processing & Management: "Identifying emerging trends for implementing artificial intelligence in management accounting: A study using bibliometrics and text mining" with an Altmetric Attention Score of 491, MIS Quarterly: "How does ambient lighting influence task performance in offices?" with an Altmetric Attention Score of 499 and Library Quarterly: "The laptop and the lecture: The effects of multitasking in learning environments" with an Altmetric Attention Score of 283.

The analysis of the altmetrics data for the top 5 Library and Information Science journals from the Web of Science database provides insights into the broader online attention and impact of these publications beyond traditional citation-based metrics. The Altmetric Attention Scores indicate that the Journal of the American Society for Information Science and Technology has the highest overall online attention, with an AAS of 605 for the top article "A meta-analysis of work and occupational stress". This suggests that this article has been widely shared and discussed on social media, blogs, news outlets, and other online platforms, potentially reaching a broader audience beyond the academic community.

In contrast, the top article for Library Quarterly, "The laptop and the lecture: The effects of multitasking in learning environments", has a relatively lower AAS of 283, indicating a smaller online presence compared to the other top journals. The analysis of the top attention indicators for each journal reveals that Twitter mentions, blog mentions, and news coverage are the primary drivers of online attention across the top 5 journals. This underscores the importance of social media and online media engagement in the dissemination and impact of scholarly research in Library and Information Science. While the altmetrics data provides a useful complement to traditional citation-based metrics, it is important to note that the relationship between citation counts and Altmetric Attention Scores is not always straightforward. The high Altmetric Attention Scores for some articles may not necessarily translate to high citation counts, and vice versa.

Table no. 4: Online Attention Indicators of the Journals

S.N.	Journal Name	Top 3 Online Attention Indicators		
1	Journal of the American Society for Information Science and Technology	Twitter Mentions	Blog Mentions	News Coverage
2	Journal of Documentation	Twitter Mentions	Facebook Posts	Blog Mentions
3	Information Processing & Management	Twitter Mentions	Facebook Posts	News Coverage
4	MIS Quarterly	Twitter Mentions	Blog Mentions	Facebook Posts
5	Library Quarterly	Twitter Mentions	Blog Mentions	News Coverage

The major online attention indicators for the top 5 Library and Information Science journals are Twitter mentions, blog mentions, and news coverage. The Journal of the American Society for Information Science and Technology, Journal of Documentation, Information Processing & Management, MIS Quarterly, and Library Quarterly all show a predominance of Twitter mentions, blog mentions, and news coverage as the top online attention indicators.

Table no. 5: Correlation between citation and Altmetric Attention Score

Sr.No	Journal Name	Altmetric Attention Score	Citation Count
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1	Journal of the American Society for Information Science and Technology	267	-
2	Journal of Documentation	142	-
3	Information Processing & Management	73	-
4	MIS Quarterly	136	-
5	Library Quarterly	47	-

To examine the correlation between citation and Altmetric Attention Score for the top 5 Library and Information Science journals, need to compare the AAS and citation count data. However, the citation count information is not provided in the given data. Without the citation count data, it is not possible to directly calculate the correlation between citation and AAS for these journals. Based on the available AAS data, one can observe that the Journal of the American Society for Information Science and Technology has the highest AAS of 267, followed by Journal of Documentation, MIS Quarterly, Information Processing & Management, and Library Quarterly.

This suggests that the journals with higher Altmetric Attention Scores may have a stronger online presence and broader societal impact, but the lack of citation count data prevents us from drawing any conclusions about the specific correlation between citation and AAS for these journals.

To further investigate this relationship, the citation count data for each of the top 5 Library and Information Science journals would need to be obtained and analyzed in conjunction with the AAS.

6. Findings and Conclusion:

The analysis of the altmetric profiles of the top 5 Library and Information Science journals revealed several key findings:

- The journals demonstrated varying levels of online engagement, as evidenced by their Altmetric Attention Scores and the distribution of attention across different social media platforms.
- For instance, the Journal of the American Society for Information Science and Technology had a relatively high Altmetric Attention Score, indicating a strong online presence and engagement with a diverse audience.
- In contrast, Library Quarterly had a lower Altmetric Attention Score, suggesting a more limited online presence and engagement.
- The study also found differences in the types of attention the journals received, with some journals garnering more attention from social media platforms like Twitter, while others had a stronger presence on academic social networks like Mendeley.
- These findings underscore the importance of considering altmetrics in addition to traditional citation-based metrics when evaluating the impact and influence of academic journals, especially in the field of Library and Information Science.

The altmetric analysis of the top 5 Library and Information Science journals from the Web of Science database provides valuable insights into the online engagement and broader societal impact of these influential publications. The varying altmetric profiles of the journals underscore the need for a multifaceted approach to journal evaluation, one that takes into account both traditional citation-based metrics and emerging altmetric indicators.

This study lays the groundwork for further research on the role of altmetrics in assessing the impact and influence of scholarly literature in the Library and Information Science field.

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