RESEARCH ARTICLE

Measuring the Multidimensional Impact of University of Jaffna Research: An Altmetric-Based Evaluation

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Abstract: This study aims to measure the overall social media visibility, societal impact and analyze the policy influence in national and international policy documents of research publications of University of Jaffna (UoJ) using Altmetric data. Analysis of the Altmetric Attention Score (AAS) shows that, UoJ research publications received 2,512 total mentions among those 1,972 mentions from social media, 254 news and blogs, 182 mentions in policy, patents and guidelines etc. Seventy-five publications were mentioned in World Health Organization (WHO) policy sources. Open access publications received more AAS than closed access and among the open access, bronze open access received highest AAS and dimension citation. Trend of AAS shows fluctuating pattern and in general it increasing over the time. Among the different social media platforms, X-mentions is a dominant platform to publicize UoJ publications. Psychology (n=25.83) and biomedical clinical sciences (n= 22.03) received highest average AAS it indicates the strong social media interest than other research publications by UoJ. Research output related to psychology also perform well in dimension citation and it reflecting academic impact. There is a considerable mismatch in some research areas that are highly cited academically may not get proportionate attention in Altmetric and vice versa. The result significantly shows the usage of research outputs by the national and international level policy documents. It bought as a valuable indicator of real world influence especially these publications have been cited in global health policies published by WHO. This study highlights the multidimensional impact of UoJ research, demonstrating that Altmetrics complement traditional citations by capturing immediate societal and policy influence. The study recommends strengthening open access publishing and researcher engagement on social media while incorporating Altmetrics into institutional evaluations to enhance visibility and societal impact. growth and supporting future academic planning and development.

INTRODUCTION

Traditional citation-based indices remain widely used for assessing scientific productivity and research excellence, but they present notable limitations. Citations typically accumulate only after several years, which delays impact assessment, and citation distributions are often highly skewed, making journal-level measures unsuitable proxies for article-level impact (Lamba et al., 2021). Moreover, the predictive power of journal impact factors has weakened in recent years, prompting the emergence of alternative approaches. The growing presence of scholarly communication on social media platforms has accelerated the development of alternative metrics (altmetrics), which complement traditional citation analysis by capturing the broader and more immediate societal visibility of research outputs (Dotti & Walczyk, 2022). The dissemination of research and its influence on society have traditionally been measured using article- and journal-level indicators such as citation counts and Impact Factor (IF) (Sedighi,

2020). While these bibliometric indicators continue to serve as standard tools for assessing the long-term impact of research, alternative metrics have emerged to evaluate the visibility and short-term societal influence of scholarly work through nontraditional means. With the rapid growth of social media platforms, researchers now have greater opportunities to increase the reach and public exposure of their work. Social networking sites, news media, and video-sharing platforms all contribute significantly to the broader dissemination of academic content (Chang et al., 2019). Traditional citation patterns suggest that it typically takes two to three years post-publication for an article to reach its citation peak, thereby delaying the assessment of its impact (Thelwall, 2020).

In contrast, due to the speed and accessibility of information sharing on social media, alternative metrics offer a more immediate reflection of an article's societal impact (Adie & Roe, 2013). There has been no documented research examining the relationship between traditional citation-based metrics and alternative social media-based indicators in assessing the visibility of research outputs originating from the

University of Jaffna. The Altmetric Attention Score (AAS) /Altmetric score was introduced in 2010 as a tool to evaluate the individual impact of an article, though attention attracted online. The score reflects how widely an article is "mentioned" in a range of media, including social media (i.e., Facebook, Twitter), newspapers and encyclopedias (i.e., Wikipedia), public policy documents, online reference managers (i.e., Mendeley), multimedia sites (i.e., YouTube), and patents. Individual mentions on these platforms are assigned specific weights. Subsequently, all mentions are tallied and combined into a single index (Adie & Roe, 2013). In recent years, scholarly communication has undergone a significant transformation with the increasing use of digital platforms and social media for disseminating research outputs. Traditional research impact indicators, particularly citations, primarily reflect academic influence but often fail to capture the immediate visibility, societal engagement, and online attention received by scholarly publications. In this context, (AAS) has emerged as a complementary indicator that measures online attention across social media, news outlets, policy documents, blogs, and academic networking platforms. The University of Jaffna, as a leading public university in Sri Lanka, produces a growing volume of scholarly publications. However, systematic evidence on how these publications gain visibility through social media platforms, how researchers contribute to online academic platforms, and how such visibility relates to traditional citation impact remains limited. Understanding this relationship is essential for enhancing the university's research visibility and global academic presence.

This study aims to explore the relationship between AAS, social media visibility, platform contribution and citation of the university of Jaffna publications.

Objectives of the study

1. To assess the extent to which research publications from the University of Jaffna achieve social media visibility and societal impact, as reflected through Altmetric indicators, in order to understand their reach beyond traditional academic audiences.

2. To assess the relative contribution of different online platforms and open access status to the Altmetric Attention Scores of University of Jaffna research outputs.

3. To compare disciplinary variations in online attention and assess the relationship between

Altmetrics and traditional citation-based indicators.

4. To analyze the policy influence of University of Jaffna research publications as reflected in mentions within national and international policy documents..

RESEARCH METHODS

This study adopted a quantitative approach to analyze the online mentions and social media visibility of research publications affiliated to the University of Jaffna using Altmetric data. The data retrieved from Altmetric Explorer, it is tracking all the online attention to published research in one in-built platform. Altmetric captures online attention surrounding scholarly from wide range of digital platforms including news outlets, blogs, policy documents, social media and reference manager like Mendeley. Data on research publications affiliated with University of Jaffna was retrieved in June 2025 and it was extracted using institutional filters available in Altmetric Explorer (Altmetric.com, 2025).

The dataset included Altmetric Attention Score (AAS), different online platform mentions, open access status, subject classifications, publication meta data and citation counts form Dimensions. Answer to the research question descriptive statistics method was used and the data was analyzed using MS excel and SPSS.

REVIEW OF LITERATURE

Research impact measures in multidimensional approaches as, academic impact, societal impact, policy impact, economic impact, media impact and educational impact (Lamba et al., 2021). The emergence of altmetrics as complementary indicators to traditional citation-based metrics has enabled a broader understanding of research influence, particularly regarding policy and societal engagement. Tattersall & Carroll, 2018, in their case study of the University of Sheffield, examined how Altmetric.com data capture the policy impact of academic publications. Using data collected up to February 2017, their analysis incorporated multiple indicators policy citations, news media coverage, blog mentions, Mendeley saves, and Wikipedia citations derived from Altmetric.com and related platforms. The study found that fields such as medicine, dentistry, and health showed the highest representation in policy documents, underscoring disciplinary differences in societal engagement. Although Altmetric.com effectively identified research cited in government and

organizational policies, the authors cautioned that its automated text-mining system may produce errors, overestimations, or incorrect attributions. The study emphasized the importance of manual verification and careful interpretation of policy citations to ensure data accuracy and reliability.

Expanding on this, Dotti and Walczyk, 2022, conducted a policy-oriented systematic review exploring the societal impact of university research. Drawing on 135 publications from Web of Science, Scopus, and ScienceDirect, they identified multiple approaches for monitoring and evaluating research's societal influence. Their findings highlighted conceptual and methodological ambiguities surrounding the term "societal impact," noting an ongoing shift from attribution (direct outcomes) to contribution (broader societal influence). Both studies conveyed on the view that while traditional bibliometrics remain valuable for assessing academic performance, altmetrics particularly policy citations offer additional insights into the real-world influence of research. However, methodological constraints, inconsistent definitions, and data quality issues continue to challenge the validity and comparability of altmetric measures across contexts (Haustein, 2016).

RESULTS AND DISCUSSIONS

University of Jaffna research publications received 2,512 total mention, among those 1,972 mentions from social media, 254 news and blogs, 182 mentions in policy, patents and guidelines etc. Seventy five publications were mentioned in World Health Organization (WHO) policy sources. Open access publications received more AAS than closed access and among the open access, bronze open access received highest AAS and dimension citation.

Altmetric-Based Online Visibility and Societal Impact of University of Jaffna Publications

University of Jaffna publication's attention on the social media is explain through the AAS with the individual article level. Figure 1 shows the average AAS trend by year. The graph shows fluctuating but generally increasing attention to Jaffna University publications over time. Highest social media visibility observed in 1998 with the average score of 25.33. Among the total attention score article titled "Polycystic Ovary Syndrome, Combined Oral Contraceptives, and the Risk of Dysglycemia: a Population-Based Cohort Study with a Nested Pharmacoepidemiological Case-Control Study" authored by Balachandran Kumarendran, attached to the Faculty of

Medicine received highest AAS 278.

Among the different open access type Bronze open access received highest AAS than others as indicated by the figure 2. Bronze open access journals are free to read articles and made available by the publishers on their websites but without an explicit open license. Because publishers make high interest articles free for marketing, promotional campaigns or to highlight urgent research. Publishers tend to release popular or socially relevant papers as bronze open access and these topics will attract policymakers, journalists, and the public. Social media users often share direct publisher link, which will be tracked more effectively the repository link in Altmetric Attention Score. Also policy makers and NGOs often cite freely available articles directly from publishers sites not from repositories which contributes to policy mentions.

Impact of Social Media Platforms, News Media, Blogs, and Open Access Publishing on Altmetric Attention Scores

The figure 3 shows an overview of how often research publications from the University of Jaffna were mentioned across various platforms, as tracked by Altmetric. The highest number of mentions received from X-mentions and formerly it was mentioned as Twitter. X received the highest number of mentions among all platforms mainly because it serves as the most dynamic and widely used social media channel for real-time scholarly communication. Several factors contribute to this dominance such as, speed and immediate sharing, wide range of academic community presence, integration with scholarly platforms, and also X is not limited to researchers but also covers journalist, policymakers, and general public.

Disciplinary Variations in Online Attention Patterns and Their Relationship with Traditional Citation Indicators

Table 1 shows the difference in AAS and Dimension citations across the difference subject disciplines. Psychology (n=25.83) and biomedical clinical sciences (n= 22.03) received highest average AAS it indicates the strong social media interest than other research publications by University of Jaffna. Psychology, biomedical and clinical sciences, and environmental sciences have received highest AAS because these subject disciplines produce research that attract broad public, media and policy interest beyond the academic community. Also these disciplines are closely linked to people's daily lives and often

deals with human emotions, social behavior, or quality of life and leading to higher social media engagement.

The comparison between Altmetric Attention Scores (AAS) and Dimension Citations across subject disciplines reveals that there is no uniform or linear relationship between social media attention and academic citation impact. Some disciplines receive high online attention butrelatively fewer academic citations, while others show the opposite trend. Psychology recorded the highest average AAS (25.83) and also a very high citation rate (98.66). This indicates that psychology research from the University of Jaffna attracts both academic and societal attention, possibly due to the universal relevance of mental health and human behavior topics, which are widely discussed both in scholarly and public spaces. This field also demonstrated high AAS (22.03) and moderate citation impact (23.06). The results suggest that biomedical findings are quickly shared and discussed online particularly in health communication and patient communities but academic citations take longer to accumulate. Engineering (1.53, 55.45), Chemical Sciences (1.64, 48.2), and Mathematical Sciences (1.11,8.61), these disciplines show low AAS but comparatively high citation averages, suggesting that their audiences are primarily academic. Their technical nature makes them less appealing for social media discussions or news coverage but valuable within scholarly networks. Human Society and Education, these areas record low AAS and low citation counts, possibly due to limited online dissemination or narrower research scope.

Policy Impact of Research Publications from the University of Jaffna at National and International Levels

The inclusion of University of Jaffna research publications in national and international policy documents demonstrates a significant level of policy influence and societal relevance. According to the Altmetric data, a total of 182 mentions were recorded across policy, patents, and guideline sources, indicating that the university's research outputs are being utilized in decision-making and policy formulation processes beyond academia.

Among these, 75 publications were cited by World Health Organization (WHO) policy sources, reflecting the global recognition of research originating from the University of Jaffna, particularly in the fields of public health, mental health, and post-conflict rehabilitation.

The article "Starting Mental Health Services in Cambodia" by D. J. Somasundara received the highest number of policy mentions (n = 15), six of which are from WHO documents. This highlights the direct application of the research findings in shaping mental health policies and service delivery frameworks in developing countries. Similarly, "War and Suicide in Northern Sri Lanka" recorded nine policy mentions, indicating strong influence on post-conflict health and social welfare policies.

Other highly cited policy-relevant works, such as "War Trauma in a Civilian Population" and "Public–Private Partnerships for Universal Health Coverage? The Future of 'Free Health' in Sri Lanka", further demonstrate how the university's research contributes to both national health strategies and global policy dialogues related to healthcare systems and humanitarian recovery.

This evidence confirms that several of the University's research outputs have moved beyond scholarly impact to exert a measurable policy impact. The presence of these works in WHO and other global organizations' policy repositories signifies that Jaffna's research is being integrated into international health and development agendas.

CONCLUSIONS

The real time impact of a research output is not only measured through the citation numbers but also measured by the societal impact. International ranking systems also using societal impact as one of the indicators to measure the research influence and research excellence of universities. Social media can provide a measurement of the early reaction to research because the time it takes to discuss such work on social media can be much less than the time it takes to acquire citation information. Also, social media can provide a more complete picture of the use of research than citation counts alone. Importantly, the altmetric score is helpful to rank research outputs based on attention from various sources, but as Elmore, 2018 has pointed out, it cannot tell you anything about the quality of the article itself. It simply tracks attention, and attention can be good or bad. This study explorer the significance influence of social media on the alternative metrics in evaluating the immediate impact of research publications other than citations. Scientometric studies shows the citation
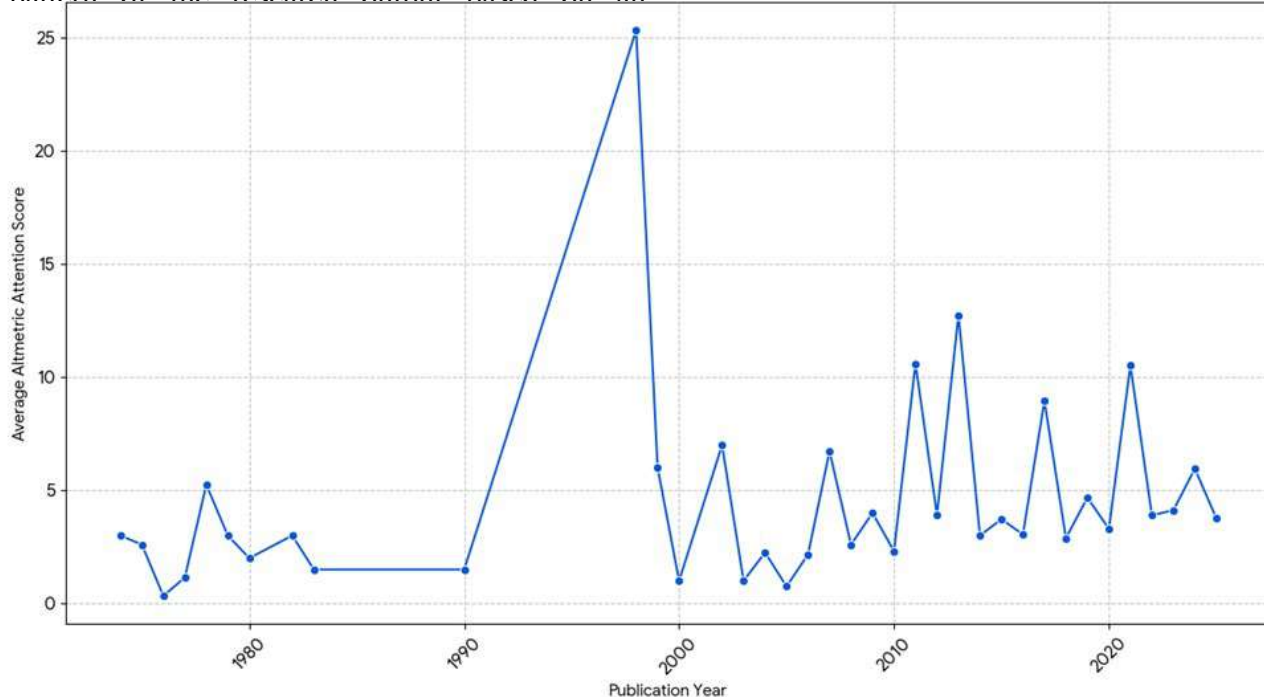
pattern of the research output based on an

Figure 1: Average AAS trend for university of Jaffna publication by year
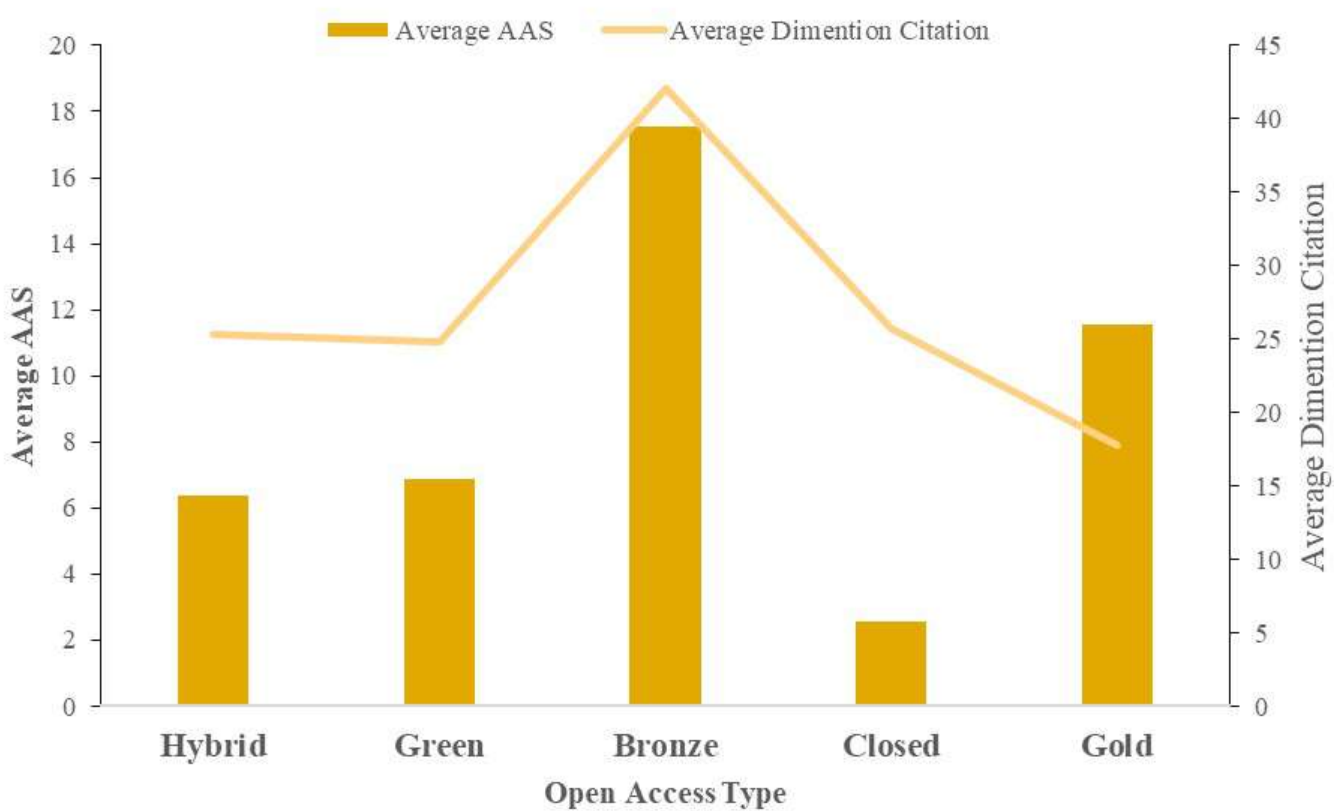

Figure 2: Comparison among the average AAS and dimension citation with different open access type
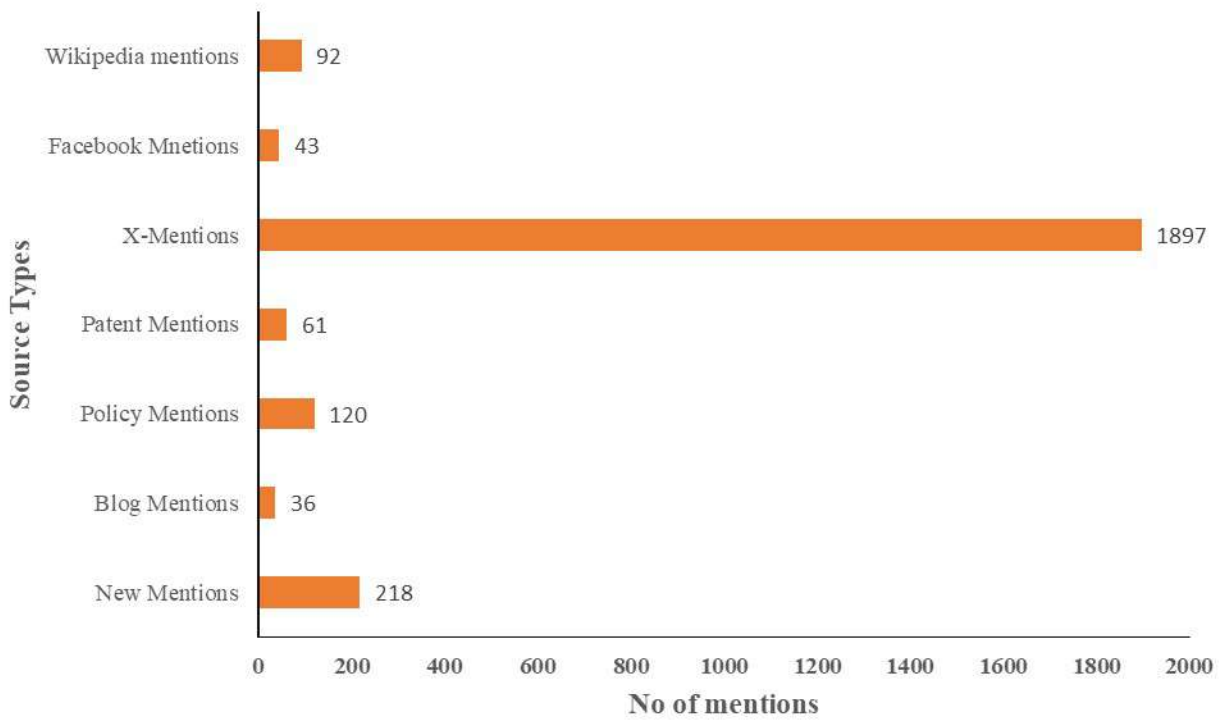
Figure 3: Total mentions by source type for university of Jaffna publications

Table 1: Average AAS and Average dimension citation numbers for the research area

Research Area	Average AAS	Average Dimension
Psychology	25.83	98.66
Biomedical and Clinical Sciences	22.03	23.06
Environmental Sciences	11	30.71
Health Sciences	7.83	16.8
Agriculture	6.26	14.59
Human Society	3.23	3.26
Biological Sciences	2.94	21.48
Earth Sciences	2.62	19.14
Commerce, Management and Tourism & Services	2.05	35.05
Chemical Science	1.64	48.2
Educations	1.63	30.25
Information and Computing Science	1.61	14.52
Engineering	1.53	55.45
Mathematical	1.11	8.61
Build Environment and Design	0.23	10.15

institutions, authors and topic. The analysis of altemtric data of University of Jaffna publications explore the online engagement and societal impact of those publications. Trend of AAS shows fluctuating pattern and in general it increasing over the time. Among the different social media platforms, X-mentions (formerly Twitter) is a dominant platform to publicize University of Jaffna publications. Open access model having an impact on receiving atlmetric attention than the closed access. Highest AAS received by the Psychology and biomedical sciences, which reveals it's visibility among broader audience. The result significantly shows the usage of research outputs by the national and international level policy documents. It bought as a valuable indicator of real world influence especially these publications have been cited in global health policies published by World Health Organization. Altmetric Attention Score highlighting the multidimensional nature of the University Jaffna research impact. Finally this analysis ensure the value of incorporating altmetrics into institutional research evaluation framework, encouraging researchers to actively engage in public and policy development will help to plan research dissemination, improve the visibility and align academic efforts with societal needs.

REFERENCES

Adie, E., & Roe, W. (2013). Altmetric: Enriching scholarly content with article-leveldiscussion and metrics. Learned Publishing, 26(1), 11–17. https://doi.org/10.1087/20130103.

Altmetric.com. (2025). Altmetric Explorer - Altmetric. How It Works-Altmetric. https://url-shortener.me/3T86.

Chang, J., Desai, N., & Gosain, A. (2019). Correlation Between Altmetric Score and Citations in Pediatric Surgery Core Journals. Journal of Surgical Research, 243(February), 52–58. https://doi.org/10.1016/j.jss.2019.05.010.

Dotti, N. F., & Walczyk, J. (2022). What is the societal impact of university research? A policy-oriented review to map approaches, identify monitoring methods and success factors. Evaluation and Program Planning, 95, 102157. https://doi.org/10.1016/.evalprogplan.2022.102157

Elmore, S. A. (2018). The Altmetric Attention Score: What Does It Mean and Why Should I Care? Toxicologic Pathology, 46(3), 252–255. https://doi.org/10.1177/0192623318758294.

Lamba, M., Kashyap, N., & Margam, M. (2021). Research evaluation of computer science publications using Altmetrics: a cohort study of Indian Central Universities. Global Knowledge, Memory and Communication, 70(4/5), 459–486. https://doi.org/10.1108/gkmc-07-2020-0097.

Sedighi, M. (2020). Evaluating the impact of research using the altmetrics approach (case study: the field of scientometrics). Global Knowledge, Memory and Communication, 69(4–5), 241–252. https://doi.org/10.1108/GKMC-02-2019-0013.

Tattersall, A., & Carroll, C. (2018). What Can Altmetric.com Tell Us About Policy Citations of Research? An Analysis of Altmetric.com Data for Research Articles from the University of Sheffield. Frontiers in Research Metrics and Analytics, 2. https://doi.org/10.3389/frma.2017.00009.

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