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# PROCEEDINGS OF THE 17TH CONFERENCE OF THE INTERNATIONAL SOCIETY FOR SCIENTOMETRICS AND INFORMETRICS

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# Assessing Promotion of Research Results in Media: Examples from Siberian Institutes

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## Introduction

Science communication for research organizations is more than part of public relations (Carver, 2014), institutions are driven by the need to justify the importance of their own activities (Bauer, Allum, & Miller, 2007), which ultimately affects funding. A significant driver is the need to promote the results of scientific research not only among the public but also in the professional community. Due to the rapid increase in the amount of scientific information (Bornmann & Mutz, 2015), scientists resort to all possible methods in order to draw peers attention to the results of their research (Wilkinson & Weitkamp, 2013). Back in the 1990s, Phillips, Kanter, Bednarczyk, & Tastad, (1991) drew attention to the relationship between the coverage of research results in the traditional lay press and subsequent citation indicators. In recent years, this trend has come to Russian science.

## Research tasks and goals

The news report on the scientific publication has several goals: promotion of a research institution; promotion of personal brands of authors of scientific publications; increase of public importance and relevance of a research field; promotion of a scientific view of the world, public awareness, improving the quality and reliability of available information; promotion of the results of scientific research in the professional community.

A number of scientometricians study the degree of media coverage of research topics and areas since it characterizes well the public interest in the science field (Elmer, Badenschier, & Wormer, 2008; Holliman, 2004). We assume that the institutional level metrics should be related to the completeness of media coverage of scientific results of the organization, its authors, and research topics.

## Methods and data

We selected mass media news reports based on research results of the institutions of the Siberian Branch of the Russian Academy of Sciences (SB RAS) as a subject for validation of the metrics proposed. The SPSTL SB RAS supports an aggregator of scientific news - Siberian Science News, which gathers media publications with references to Siberian research institutes and

universities (Kosyakov et al., 2018). This project selects and gathers relevant news stories from a wide variety of sources. News reports related to the articles published in scientific journals for the period from the beginning of 2016 to September 2018 were selected from this newsfeed in semi-automatic mode by a number of keywords. The total number of news mentioning the institutes of SB RAS for this period was 5544, of which 301 messages were related to the results of scientific research. In total, 92 organizations got into consideration, however, the media activity of some of them was too small to be evaluated.

Named entities were compared with a list of Siberian authors of research articles obtained from the Russian Index of Science Citations (RISC) and additionally checked for affiliation with the abovementioned scientific organizations. For news reports and their versions in different media, the number of linked posts on social networks Facebook and VK were obtained. Data on the number of scientific articles indexed for 2016-2017, as well as the number of authors of these articles for every single institution, were also obtained from the RISC. Based on these data, three metrics were calculated for each institution:

- Media coverage of articles, equal to the ratio of the number of news reports to the number of publications indexed in the RISC for a particular year as a percentage.
- Media coverage of the authors is equal to the ratio of the number of unique employees of the organization mentioned in the news reports to the number of authors of publications indexed in the RISC for a particular year as a percentage.
- Media impact index equal to the sum of the number of news messages with a factor of 10, the number of reposts of news messages in the media with a factor of 4 and the number of posts in social media linked to the original news item or any of the reposts with a factor of 1.

## Results

The analysis showed that the number of news mentioning Siberian research institutes is growing. This may be due both to an increase in the media activity of institutions, in particular, the establishment of PR departments and press services and to the general increase in the number of media and news. However, news on research results

published in scientific journals occupy a modest place in this news feed. A total of 301 such news items and 3568 reprints were found. This averages over the entire period about 5.5% of the total number of mass media news reports with references to the institutes and a little more than 11% of reprints. The Krasnoyarsk Scientific Center (KSC) turned out to be the leader in terms of the number of news, for the entire study period. 71 original news reports and 1211 reposts related to the results of its research activities were published. The Institute of Cytology and Genetics (ICG), the Institute of Petroleum Geology and Geophysics (IPGG), the Institute of Geology and Mineralogy (IGM), and the Institute of Catalysis (IC) were also ranked in the top five with a noticeable gap from the leader.

The share of news based on scientific publications for the entire period under consideration reaches a little over 13% by the leader of this ranking, the KSC. For a few more organizations, this proportion is above 10%. It can also be noted that the media shows a noticeable interest in news related to scientific publications – the average number of reprints of such news is usually higher than the corresponding figure for all news reports.

The calculation of the coverage metrics described above is given in Table 1. We can observe visible progress in media coverage of scientific publications and authors. The higher output of the IMCB, which is small in the number of researchers, stands out. While large organizations held some of the high positions in the ranking (KSC, IPGG, ICG) small ones occupy the prominent place too.

**Table 1. The degree of media coverage of scientific publications (PC), authors (AC) and media impact index (MI) of SB RAS Institutes (top 10 ranked by the publications coverage in 2017)**

Institute	2016			2017		
	PC	AC	MI	PC	AC	MI
IMCB	4.00%	4.35%	45	5.66%	8.51%	483
ICKC	2.17%	1.00%	223	2.90%	3.08%	143
ICBFM	1.72%	1.58%	281	2.64%	2.90%	1 545
IAE	1.64%	5.06%	214	2.58%	4.79%	186
KSC	0.56%	0.58%	1 603	2.41%	3.91%	21 512
IPGG	1.11%	1.60%	8 749	2.35%	4.26%	1 465
ICG	0.68%	0.95%	239	2.26%	2.79%	8 208
IAET	0.99%	1.72%	1 055	2.24%	7.33%	3 692
ISEA	0.52%	0.00%	333	2.00%	2.27%	577
SIPPB	0.48%	0.76%	42	1.74%	2.65%	502

## Conclusion

The study of media activity of research institutes of the Siberian Branch of the Russian Academy of Sciences shows an increasing interest in popularizing and promoting the brands of organizations, individual scientists and scientific

results. The progress both in the level and in the completeness of the media coverage of research results published in scientific journals is clearly visible. The proposed metrics and the results of their calculations make it possible to identify the most successful practices, to identify weaknesses, to formulate recommendations on the most effective presentation and promotion of scientific results. The ongoing data collection on media publications mentioning institutions will expand the time range of analysis; more accurately identify trends due to the general environment and specific features of each individual organization.

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