

Altmetrics – new metrics and its application in Croatia

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Abstract

Social media is creating new ways of communication in the academic environment. More and more scholars read, share and discuss topics using “non traditional” modes of communication (blogs, social networks, twitter).

We find this useful and very engaging because an author can publish interesting research results in article and discuss his findings in e.g. a blog, so other can see his post, look up the article and cite it. This can increase the impact of the article by being cited by other authors and thus increase the IF of the journal.

To monitor and rate the progress of science, the Croatian academic community has been using bibliometrics. Some of the criteria for evaluating academic achievement (with minor variations in different fields of science) are: a) publishing in journals which are indexed in Current Contents, Science Citation Index, SCI – Expanded; b) publishing in journals included in other relevant databases ; c) publishing in journals with an IF > 1, etc.

Croatian scientific productivity has shown the value of bibliometrics, but can there be more factors that contribute to the value of a scientific work, and the integrity of the authors in the academic context?

“Bibliometric indicators have long been used in academic publishing to assess the quality of a publication, article or author and the vast majority of traditional bibliometric indicators have been based around article-article citation, where the cited source is seen as being strongly relevant to the citing source. The ‘Impact Factor’ (IF) is the most prevalent metric associated with the journal citation-based system, and while it has its place as a single-source indicator of quality, more and more eyebrows are being raised about it’s real value, the expanding distance between IF and individual article citations, and the widespread misuse of the IF.”¹

By analyzing the basic services provided in academic libraries, which are directly incorporated in the academic environment, and the criteria set forth in the *Regulations for academic advancement in Croatia (applied from 1 January, 2006)*, this poster will try to answer:

In which way could altmetrics contribute in tracking citations of Croatian authors via social networks?

This question will be answered with an appropriate sample size of two examples from the Croatian academic community. The authors of this poster work in libraries at the University of Zagreb, one at the School of Medicine, and the other at the Faculty of Humanities and Social Sciences, therefore the examples chosen are from the field of psychology (from author Ajduković, D.) and medicine (from author Habek, M.), both articles are from 2010.

The examples will show results that we obtained by applying bibliometric and altmetric methodology, and they are listed under their DOI numbers, because we wanted to place the emphasis on the paper and not the author as well as to protect the authors, and allow for the further use of these examples in future research.

Examples:

Example A (Medicine):

doi: 10.1016/j.clineuro.2010.04.011.

¹ Galligan, F. (2013). Reforming bibliometrics with altmetrics and Mendeley data. [Swets: blog] Retrieved May 9, 2014 from <http://www.swets.com/blog/reforming-bibliometrics-with-altmetrics-and-mendeley-data#.U2373KIkQTA>

Example B (Psychology):
doi: 10.1001/archgenpsychiatry.2010.37.

Table 1. Indexing examples A (Medicine) and B (Psychology)

Index in:	Example A Medicine	Example B Psychology
Web of Science	+	+
Current Content	+	+
Impact factor (IF)	1.636/1.585 (5 year)	10.782 /15.618 (5 year)
Subject Category (Q)	Clinical Neurology (Q3) Surgery (Q2)	Psychiatry (Q1)
Scopus	+	+
Citations (Article)	12	44
Total documents in Scopus	114	45
h-index	11	11
PubMed	+	+
Altmetrics (score in contex)	5	7
Altmetrics- Blog	0	1
Altmetrics- Mendeley	10	11
Altmetrics-Connotea	0	1
Altmetrics-Tweet	3	0
Altmetrics- Facebook	6	0
Altmetrics-CiteULike	1	0

Altmetrics are new metrics proposed as an alternative to the widely used journal impact factor and personal citation indices (h-index). Altmetrics can be applied to any kind of publishing by looking at the (context, e.g.) number of article views, downloads, saves, cites or mentions in social media as a reference. That is why altmetrics is better suited to the challenges of the modern era and the current environment of scientific communication.

Table 2. Comparison between bibliometrics and altmetrics

	Bibliometrics	Altmetrics
Required time for results	Impact Factors (IF) are based on cites to articles published in the previous two years.	Results of the impact are available immediately, and are increasing through time.
Scope /coverage field	Less coverage includes scientific databases only.	Wider coverage includes e.g. blogs, forums, tweets = wider audience
Funds	Databases are commercial and in large parts hold a monopoly along with high subscription prices.	Some of these tools are commercial, but the philosophy is based on open source = wider audience
Citation	Based on: citations of the journal (IF) or citation of the author (h-index, which is not recognized in Croatia)	Based on: citations of the journal (IF), but it can be calculated separately also for the impact of the journal, and the institution etc..
Impact of the work-article	Impact is seen only when the work is published, this may take several months (the time it takes to make a review). Longer feedback loop.	Shorter feedback loop: before the official review in a journal, the work can be commented on or corrected e.g. on scientific forums. The work can go through more informal reviews prior to official reviews.

As the current metrics, based only on citations, cannot keep up diversity in scientific communication, alternative indicators offer a different perspective on the impact of scientific work.

Tools such as Mendeley and CiteULike, Connotea, ImpactStory, and Altmetric have all arisen from the need to shift these quality measurements into the modern, digital era. Fundamental features of web tools, these days, are easy to

use, built around specific user needs, and available, up-to-date and in real time. Also some databases (e.g. Scopus) and publishers (e.g. BioMed Central, Public Library of Science, Frontiers, Nature Publishing Group) have begun to incorporate the Altmetric tool on their websites and provide such information to their readers. This is also an indicator of the impact and increase in "non traditional" ways of measurement and metric.

Our work on this poster has given way to new questions, which we will try to answer in a future study (detailed study and elaboration of the Croatian examples, statistically relevant sample). At the moment we have only scratched the surface and this is certainly an interesting topic for research and opens up rich possibilities in the future.

Our goal with this poster is to contribute to the raising of the awareness of the academic community about the value of new methods as a preface for more research in the future. Libraries and institutions should be looking for new and more relevant ways of measuring the authors' impact, and the impact of their work in the scientific community.

Keywords: bibliometrics, altmetrics, academic libraries, Croatia

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Curriculum Vitae

Lovela Machala Poplašen was born in Zagreb, Croatia. She graduated from the Faculty of Humanities and Social Sciences in Zagreb. From 2010 she is head librarian at the Andrija Štampar Library, School of Public Health, School of Medicine, University of Zagreb. She is teaching assistant at the School of Public Health PhD Programme: Biomedicine and Health Sciences in the courses Structure, methodology and function of a scientific work 2. Her research interests are new technologies, information literacy, academic education, information science. She is a member of the Croatian Library Association, and from 2012 member of the Medical Library Commission of the Croatian Library Association.

Lana Zrnić was born on 15 June 1983 in Zagreb, Croatia. She studied Philosophy and Library and Information Science (majoring in Library science) at the Faculty of Humanities and Social Sciences in Zagreb, and graduated in 2008. While she was a student she worked as a student assistant in the Faculty library (Philosophy Collection). Since May 2008 she has been employed as a subject librarian in the Philosophy Collection of the Faculty of Humanities and Social Sciences Library in Zagreb. Her subjects of interest are information and reference services in libraries, subject cataloging and indexing, and especially new technologies and their application in libraries. She has been a member of the Croatian Library Association since 2013.