

Differences between Altmetric Data Sources – A Case Study

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Introduction

Altmetrics are a hot topic. They are supposed to complement traditional metrics by tracking the Web and social media interactions with scholarly artifacts.

Altmetrics rely on a number of data sources, reported by aggregators like Altmetric.com and PlumX, or can be directly retrieved from Twitter or Mendeley.

Mendeley is a free online reference manager, reporting the number of users (called readers) who bookmarked a given publication. Mendeley readership counts are reported by the aggregators as well.

The dataset for this case study are articles and reviews from the journal JASIST

The research questions in this study were:

- What is the coverage of the data sources, i.e. for how many items in the dataset do they report readership counts?
- How does coverage change over time?
- Do the different data sources report the same readership counts when data were downloaded on the same day?
- How readership counts change within a year, and how are they reported by the three data sources:



- What happens to tweets over and how are they reported by the aggregators?

Methodology

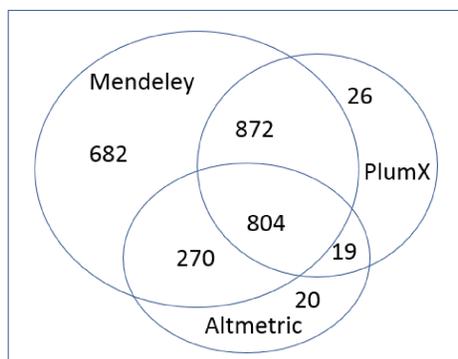
- The dataset for the study were articles and reviews published in JASIST between 2010 and mid 2017. Altogether 2,728 documents.



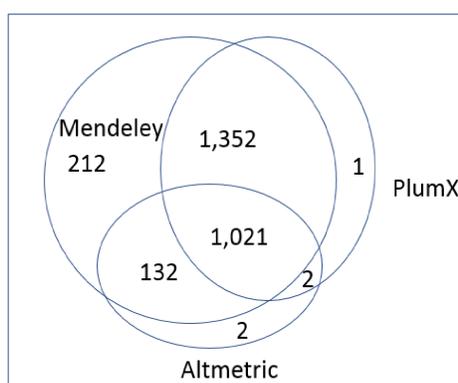
- The initial data collection took place on June 29, 2017.
- The second round of data collection on March 29, 2018.
- Data from Mendeley and Altmetric.com were collected by using Mike Thelwall's Webometric Analyst.
- Data from PlumX was collected from a dedicated dashboard licensed by the authors.
- Data were analyzed using Excel.

Results

Coverage 2017



Coverage 2018



Increased coverage by the aggregators over time

Changes in readership counts over time

As reported by Mendeley and the aggregators

	sum of readers	articles with readers	% of total	average # readers
Mendeley17	82,040	2,628	96.3%	31.22
Mendeley18	87,917	2,690	98.6%	32.68
MA17	36,678	1,113	40.8%	32.95
MA18	45,555	1,156	42.4%	39.41
MP17	47,617	1,721	63.1%	27.67
MP18	81,449	2,375	87.1%	34.29

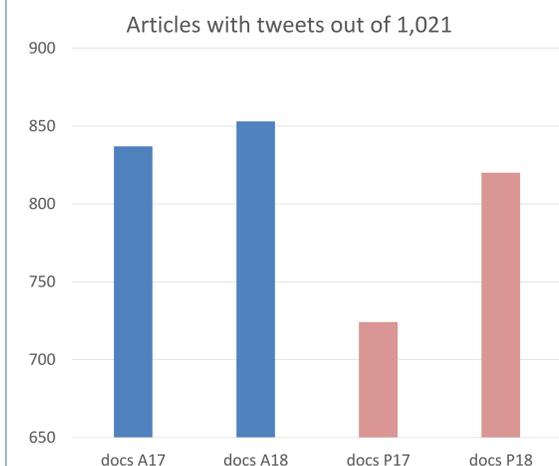
MA/MP – Mendeley counts reported by the aggregators

All three data sources increased coverage and reported growth in the number of Mendeley readers over time, as expected. PlumX had the highest increase in coverage.

The average number of readers per article, depends on the number of articles covered by the data source and on the number of readers of these articles.

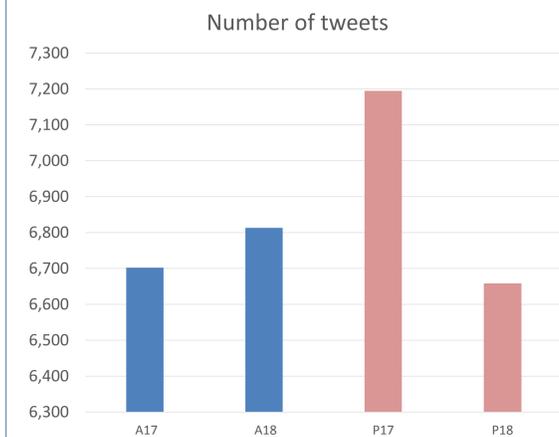
Twitter

For twitter, the dataset was filtered to the 1,021 documents covered by both aggregators.



Again a huge increase in coverage is observed by PlumX. In general, the coverage is much higher than expected (Thewall et al., 2013; Zahedi, Costas & Wouters).

The next chart displays the sum of tweets. Interesting to note that in spite of the increase in the number of articles reported by PlumX in 2018, the number of tweets decreased considerably.



We also examined blogs, news and Wikipedia mentions, but there coverage was negligible.

Conclusions

We showed that there are differences in indicators' counts provided by various altmetric sources. There is, however, better alignment between the two data collection points which is seen in the diminishing gaps between them. Especially encouraging is the significant increase in coverage of readership counts by PlumX coupled with the increase in the overlap between Altmetric.com and PlumX.

The study has limitations, dataset is rather small, and covers a single journal. Further studies are needed to explore the reliability of altmetric counts.

Contact

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References

- Bar-Ilan, J., & Halevi, G. (2017). Altmetric counts from different sources. Presented at the Altmetrics17 Workshop, September 26, 2017, Toronto, Canada.
- Thelwall, M., Haustein, S., Larivière, V., & Sugimoto, C. R. (2013). Do altmetrics work? Twitter and ten other social web services. *PLoS ONE* 8(5), e64841.
- Zahedi, Z., Costas, R., & Wouters, P. (2014). How well developed are altmetrics? A cross-disciplinary analysis of the presence of 'alternative metrics' in scientific publications. *Scientometrics*, 101(2), 1491-1513.