

Cross-Metric Compatibility of Altmetrics

Consistency of the Metrics from PlumX and Altmetric.com

METRICS 2017
Workshop on Informetric
and Scientometric Research
(SIG/MET)



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1. INTRODUCTION



Alt metrics and alt metric aggregators



Motivation



Researchers are strongly under pressure to prove their contribution to society



Motivation

Researchers use social media tools in different stages of their work.

(Nicholas & Rowlands, 2011)



Motivation

Quantitative indicators are one way to prove one's contribution to society

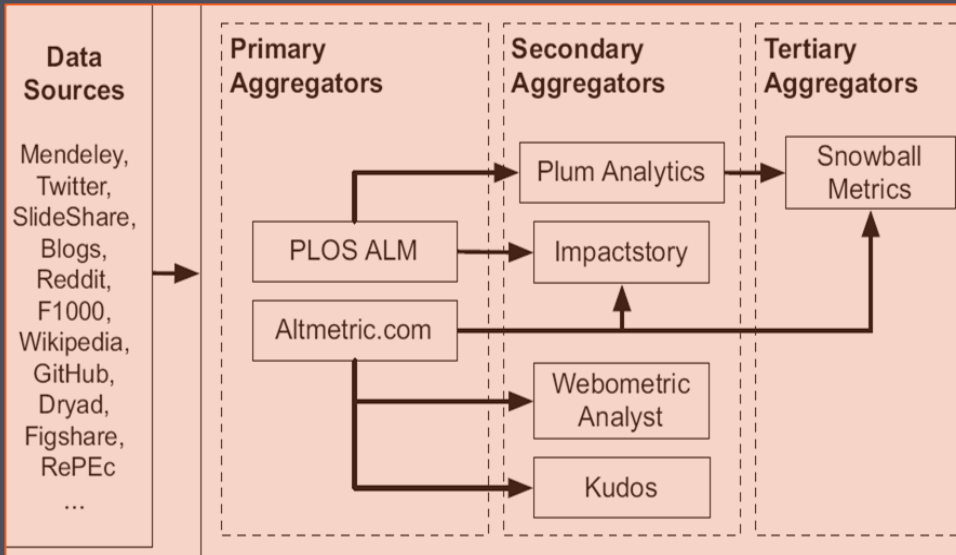




Altmetrics are “events on social and mainstream media platforms related to scholarly content or scholars, which [...] are not the same as the more ‘traditional’ concept of citations”.

(Haustein, Bowman, & Costas, 2015, p. 373)

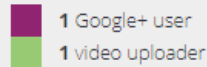
Aggregators



(Erdt, Nagarajan, Sin, & Theng, 2016, p. 1121)

Constituents of political cognition: Race, party politics, and the alliance detection system

Overview of attention for article published in Cognition, July 2015



SUMMARY

News

Blogs

Twitter

Google+

Video

Misc.

Title Constituents of political cognition: Race, party politics, and the alliance detection system

Published in Cognition, July 2015

[View on publisher site](#)

<https://www.altmetric.com/details/3918413>

Altmetric.com

Constituents of political cognition: Race, party politics, and the a

Review of attention for article published in Cognition, July 2015



About this Attention Score

In the top 5% of all research outputs scored by Altmetric

MORE...

Mentioned by

10 news outlets

SUMMARY

News

Blogs

Twitter

Google+

Video

Misc.

So far, Altmetric has seen 40 tweets from 32 users, with an upper bound of 179,878 followers.



Christopher Federico

@ChrisPolPsych

RT @IBALyons: See <https://t.co/CoYLGyt7DV> and maybe <https://t.co/CG1z9bb54c> <https://t.co/C6cylJTZ0g>

30 Aug 2017



Ben Ly

@IBALyons

See <https://t.co/CoYLGyt7DV> and maybe <https://t.co/CG1z9bb54c> <https://t.co/C6cylJTZ0g>

30 Aug 2017



Oliver Scott Curry

@Oliver_S_Curry

RT @Oliver_S_Curry: Politics erases race (but not sex or age) <http://t.co/EpFw1meZtH> @M_B_Petersen @rkurzban @ToobyCosmides <http://t.co/dR9...>



Helen

@HPluck

@Lorienen @jos <https://t.co/Obw...>

11 Aug 2016

<https://www.altmetric.com/details/3918413/twitter>

PlumX Metrics



Usage	Captures	Mentions
Bitty - Clicks: 3	EBSCO - Exports-Saves: 16	Blogs: 2
EBSCO - Abstract Views: 742	Mendeley - Readers: 66	
EBSCO - Link-outs: 99		
Social Media	Citations	
Facebook - Shares, Likes & Comments: 10	CrossRef - Citation Indexes: 10	
Twitter - Tweets: 20	PubMed - Citation Indexes: 2	

<https://www.scopus.com/record/pubmetrics.uri?eid=2-s2.0-84926469174&origin=recordpage>



*“[T]he act of **citing** has been an essential part of **scholarly communication** in modern science, whereas researchers are still exploring how to use **social media**”.*

(Haustein, 2016, p. 414)

Need for evaluating altmetrics

For relying on indicators like tweet counts, Mendeley readers and blog posts, it is essential that these measures fulfill criteria like **transparency** and **robustness**.

(Martin, 2015)

“



*“[G]iven that there are many different parts of the social web, evidence about the **value** and **relative importance** of each one for altmetrics would be useful for publishers seeking to **use them effectively**”.*

(Sud & Thelwall, 2014, p. 1132)

Need for evaluating altmetrics

Coverage and metric counts can differ across different data aggregators.

More analyses needed in comparing different data aggregators to detect **challenges** in altmetric data collection.

(Jbbmann et al., 2014)

2. METHODS

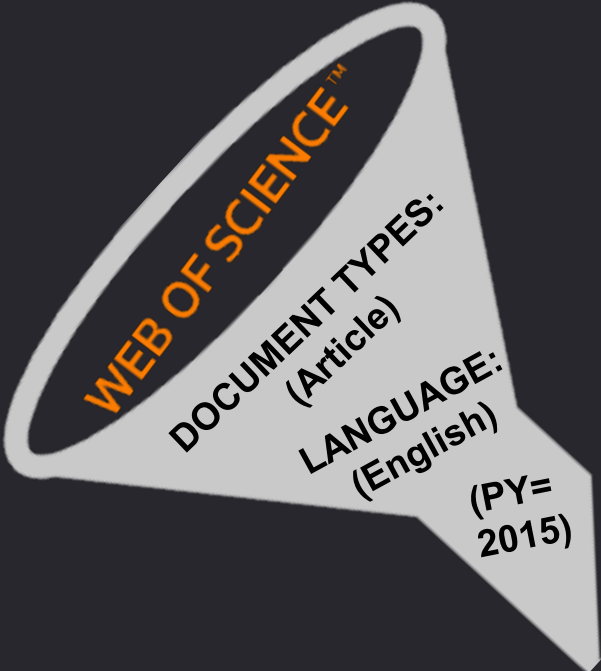


Data Gathering and Evaluations





Data gathering



1,499,100

random set
(with DOI)



5,000



Altmetric aggregators



Evaluations



- descriptive statistics
- correlations



skew ed data → Spearman's rank correlation
(Spearman, 1904)



3. RESULTS

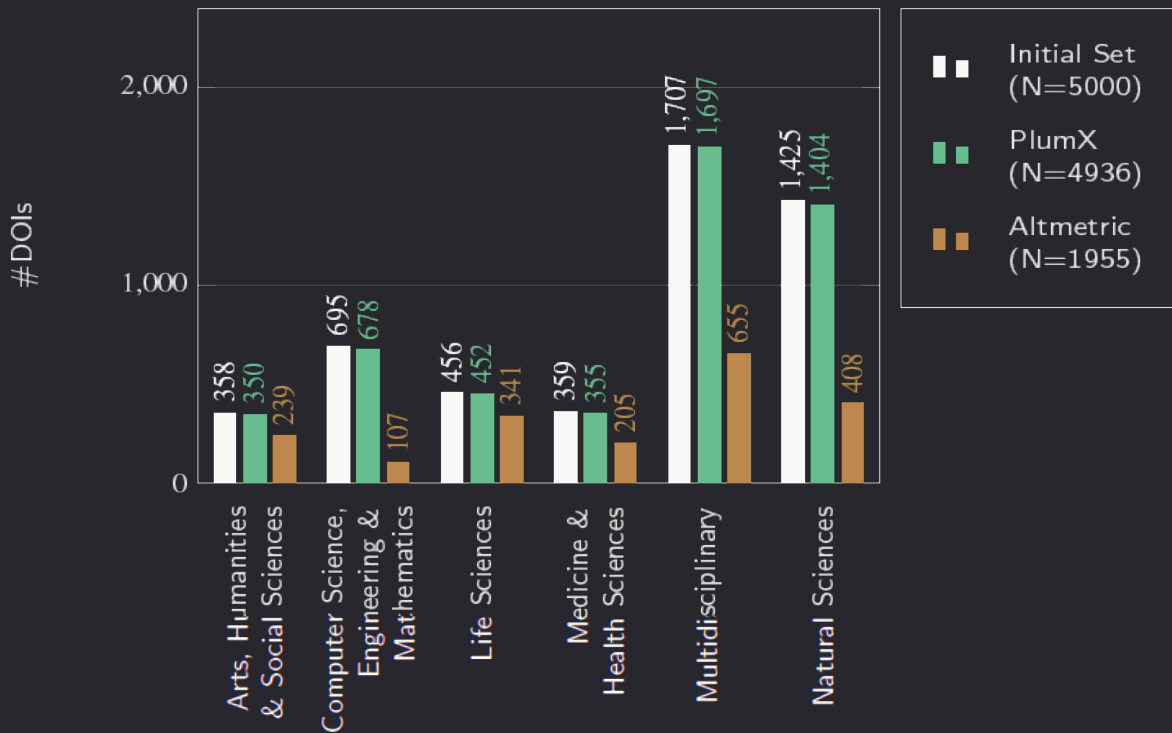


Coverage & Correlations

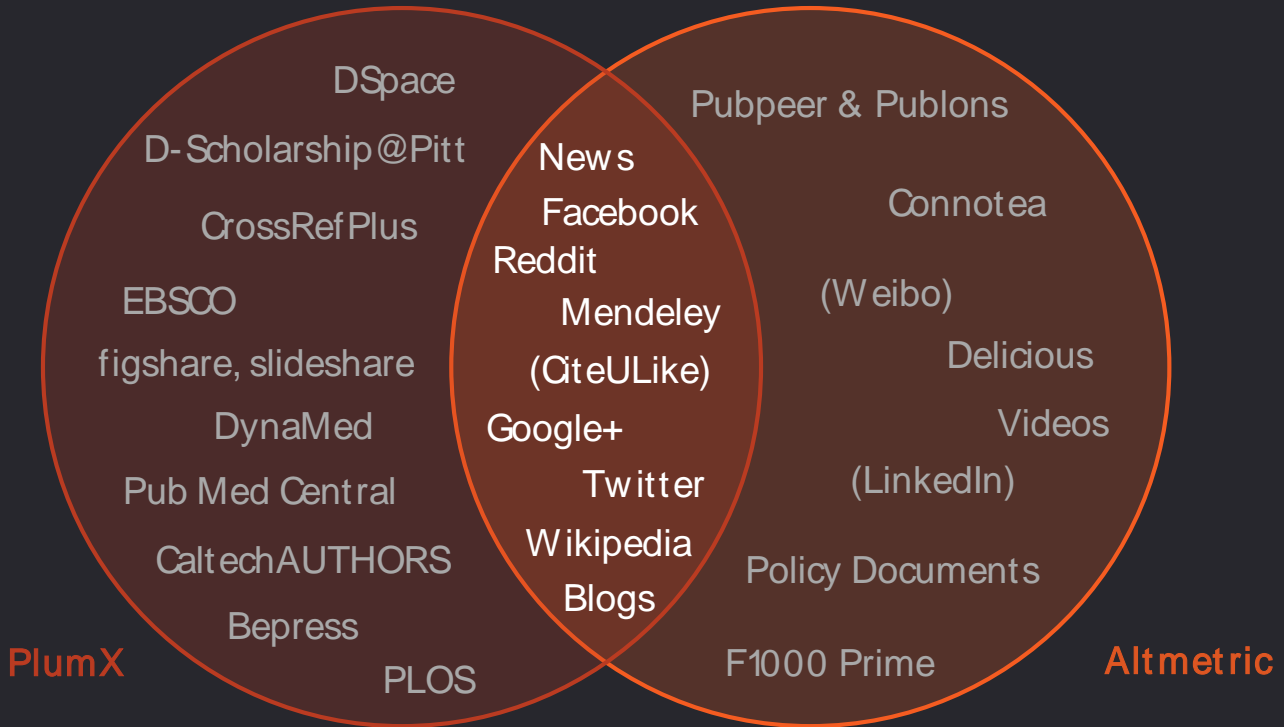


Coverage

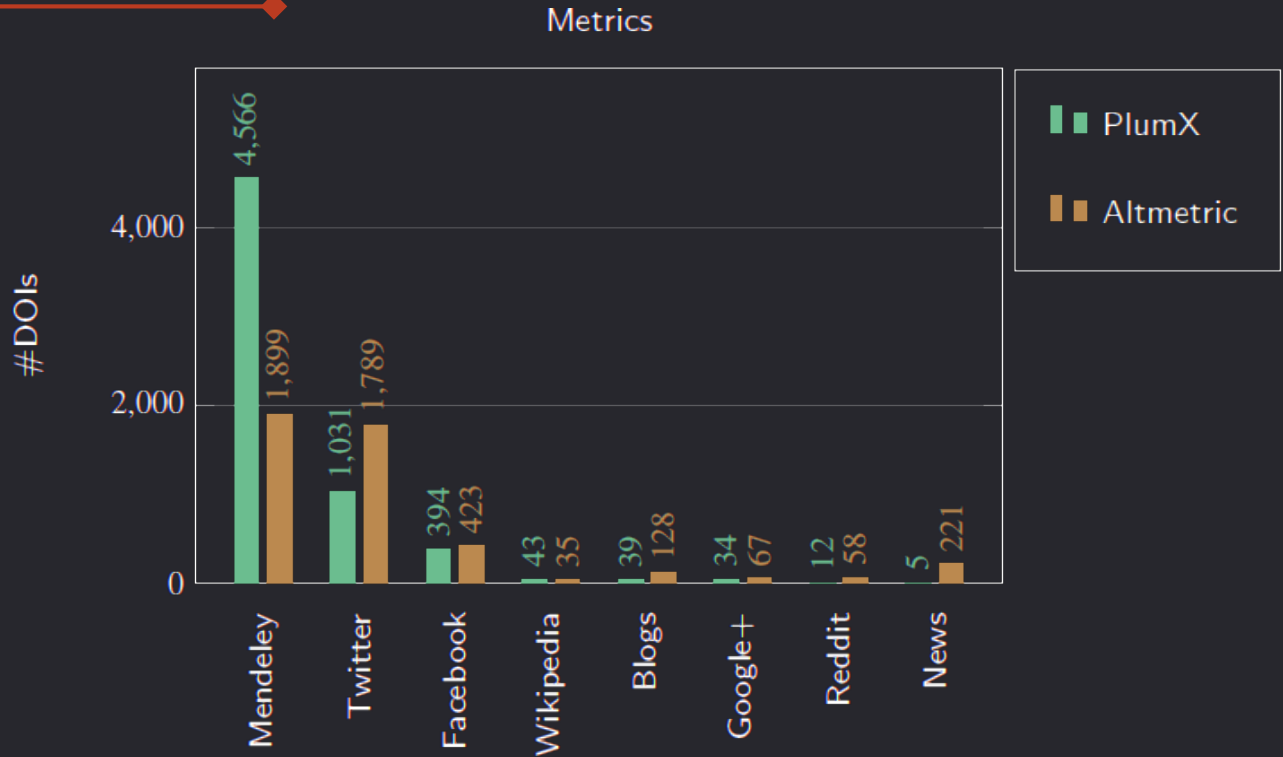
DOIs per Discipline



Data sources covered by the aggregators (excerpt)



Coverage



Difficulties in tracking a publication

Generalized Communities in Networks

M. E. J. Newman and Tiago P. Peixoto

Phys. Rev. Lett. **115**, 088701 – Published 20 August 2015



Altmetric hasn't picked up any sharing activity around this article yet.

0 readers on Mendeley
0 readers on CiteULike

Have we missed something?
Let us know at
support@altmetric.com



Generalized Communities in Networks.

Citation data: Physical review letters, ISSN: 1079-7114, Vol: 115, Issue: 8, Page: 088701
Publication Year: 2015

USAGE ▾	4	CAPTURES ▲	216	SOCIAL MEDIA ▾	28
Abstract Views ◉	3	Readers ◉	216	Tweets ◉	28
Link-outs ◉	1	Mendeley	215		
		CiteULike	1		

Example - Facebook

A proton relay enhances H₂O₂ sensitivity of GAPDH to facilitate metabolic adaptation

Overview of attention for article published in Nature Chemical Biology, January 2015



SUMMARY

News

Twitter

Facebook



So far, Altmetric has seen **1** public wall post.



A proton relay enhances H₂O₂ sensitivity of GAPDH to facilitate metabolic adaptation.

Citation data: Nature chemical biology, ISSN: 1552-4469, Vol: 11, Issue: 2, Page: 156-63

SOCIAL MEDIA ▾

156

Shares, Likes & Comments

155

Facebook

155

Example - Twitter



Prevalence and Characteristics of Hepatitis B Virus (HBV) Coinfection among HIV-Positive Women in South Africa and Botswana.

2 TWEETS

0 RETWEETS

Prevalence and Characteristics of Hepatitis B Virus (HBV) Coinfection among HIV-Positive Women in South Africa and Botswana

Overview of attention for article published in PLoS ONE, July 2015



SUMMARY

Twitter



So far, Altmetric has seen 19 tweets from 13 users with an upper bound of 47,390 followers.



Example – Blogs

Ice friction: Role of non-uniform frictional heating and ice premelting

Overview of attention for article published in Journal of Chemical Physics, December 2015

■ PlumX

- It's the Rheo Thing
- Compound Interest
- Txchnologist
- Inside Science

■ Altmetric

- It's the Rheo Thing
- physicsworld.com
- ANALYTIK NEWS
- STEAM Register
- Txchnologist
- Brightsurf Science News and Current Events



Inter-Correlations

	PlumX – Altmetric (subset of DOIS) N=1946
Mendeley	0.97*
Facebook	0.29*
Twitter	0.49*
Reddit	0.14*
News	0.11*
Blogs	0.46*
Wikipedia	0.82*

* Significant at the 0.01 level (two-tailed)



Inter-Correlations

	PlumX – Altmetric (subset of DOIS) N=1946	PlumX – Altmetric (filled with zeros) N=5000
Mendeley	0.97*	0.34*
Facebook	0.29*	0.50*
Twitter	0.49*	0.21*
Reddit	0.14*	0.30*
News	0.11*	0.08*
Blogs	0.46*	0.17*
Wikipedia	0.82*	0.69*

* Significant at the 0.01 level (two-tailed)



4. CONCLUSION



Inconsistencies



Inconsistencies of alt metrics

- The same data source leads to different event counts when using different aggregators
- Possible reasons:
 - Difficulties in tracking a publication
 - For one source different kinds of indicators are used (e.g. Facebook shares and/or likes)
 - Different kinds of sources (e.g. blogs)
- Future work:
 - Evaluate sources in a qualitative way
 - Compare more aggregators

THANKS!

ANY QUESTIONS?

You can find me at:

 @chmesch

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References



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