UNIVERSITÀ DEGLI STUDI FIRENZE

The use of social media in modern research

Prof. Gherardo Chirici

Laboratorio di Geomatica Forestale

UNIVERSITÀ DEGLI STUDI FIRENZE
DAGRI
DIPARTIMENTO DI SCIENZE E TECNOLOGIE AGRARIE, ALIMENTARI, AMBIENTALI E FORESTALI

Introduction

Following the current Italian regulation early stage reserachers need to obtain the *Abilitazione Scientifica Nazionale* (ASN) as soon as possible to compete for RTD positions.

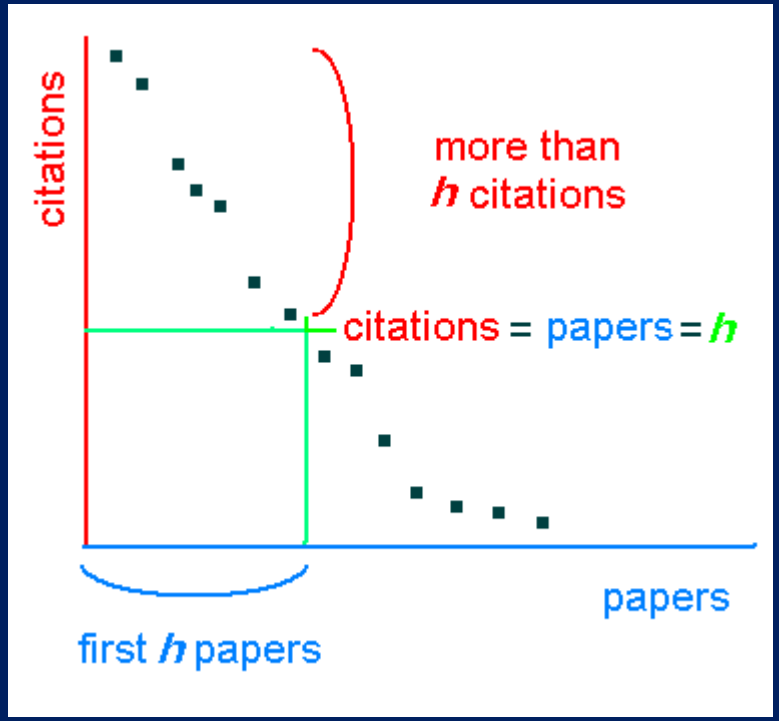
ASN is based on three indicators:

Number of papers
Number of citations
H-index

H-index is calculated on the basis of number of papers and number of citations.

Researchers are therefore requested to:

- Publish papers
- Accumulate as many citations as possible



The number and quality of papers published is not under discussion in this presentation

The main aim here is to analyse **citations accumulations** and possible way to augment citations through **social media**

Citations serve to document the collective and cumulative nature of knowledge production (Catalini, Lacetera, & Oettl, 2015).

Citation, noun. (Ci·ta·tion)

1. "The action or an act of quoting or referring to a passage, text, author, legal precedent, etc., esp. as an authority or in support of an argument; quotation."
2. "A cited passage, a quotation."
3. "A reference providing information about where a particular quotation, text, etc., is to be found; a bibliographical reference."

Oxford English Dictionary Online

Do academics today have to participate actively in social media to stay relevant?

Some FACTS

Citation behavior is a complex phenomenon which is influenced by many factors besides scientific merit (Bornmann & Daniel, 2008)

The number of publications in peer-reviewed journals steadily **grows** (de Solla Price, 1965; Larsen & von Ins, 2010)

Newer articles tend to cite more sources than older ones (Neff & Olden, 2010)

Recent papers are cited more frequently than in some others (Peters & van Raan, 1994)

Citation inflation Citations have become more common from year to year

Citation ageing How citations received by articles evolve as time passes since their publication? (citation history, life cycle, obsolescence, durability)

Citation ageing

Journal of Informetrics 13 (2019) 738–750

Contents lists available at ScienceDirect

Journal of Informetrics

journal homepage: www.elsevier.com/locate/joi

An empirical approach based on quantile regression for estimating citation ageing

Sebastian Galiani[a,b,1], Ramiro H. Gálvez[c,*,1]

[a] Department of Economics, University of Maryland, College Park, MD 20742, United States
[b] NBER, Cambridge, MA, United States
[c] Department of Computer Science, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires, C1428EGA, Argentina

ARTICLE INFO

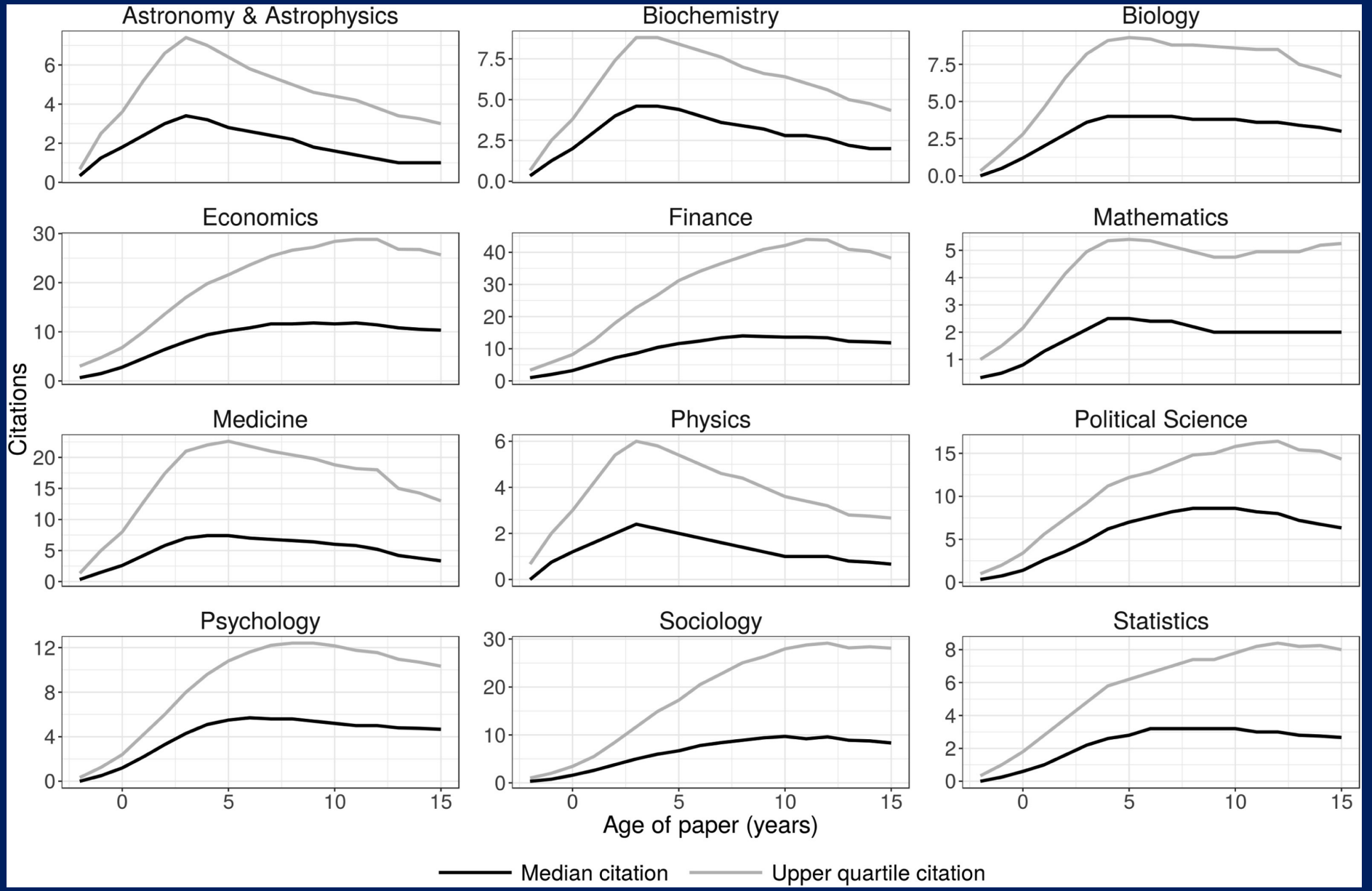
Article history:
Received 24 August 2018
Received in revised form 23 March 2019
Accepted 25 March 2019
Available online 16 April 2019

Keywords:
Citation analysis
Citation ageing functions
Quantile regression
Life cycle of citations

ABSTRACT

An aspect of citation behavior, which has received longstanding attention in research, is how articles' received citations evolve as time passes since their publication (i.e., citation ageing). Citation ageing has been studied mainly by the formulation and fit of mathematical models of diverse complexity. Commonly, these models restrict the shape of citation ageing functions and explicitly take into account factors known to influence citation ageing. An alternative—and less studied—approach is to estimate citation ageing functions using data-driven strategies. However, research following the latter approach has not been consistent in taking into account those factors known to influence citation ageing. In this article, we propose a model-free approach for estimating citation ageing functions which combines quantile regression with a non-parametric specification able to capture citation inflation. The proposed strategy allows taking into account field of research effects, impact level effects, citation inflation effects and skewness in the distribution of cites effects. To test our methodology, we collected a large dataset consisting of more than five million citations to 59,707 research articles spanning 12 dissimilar fields of research and, with this data in hand, tested the proposed strategy.

Annual trends



Scientometrics (2013) 94:851–872
DOI 10.1007/s11192-012-0775-9

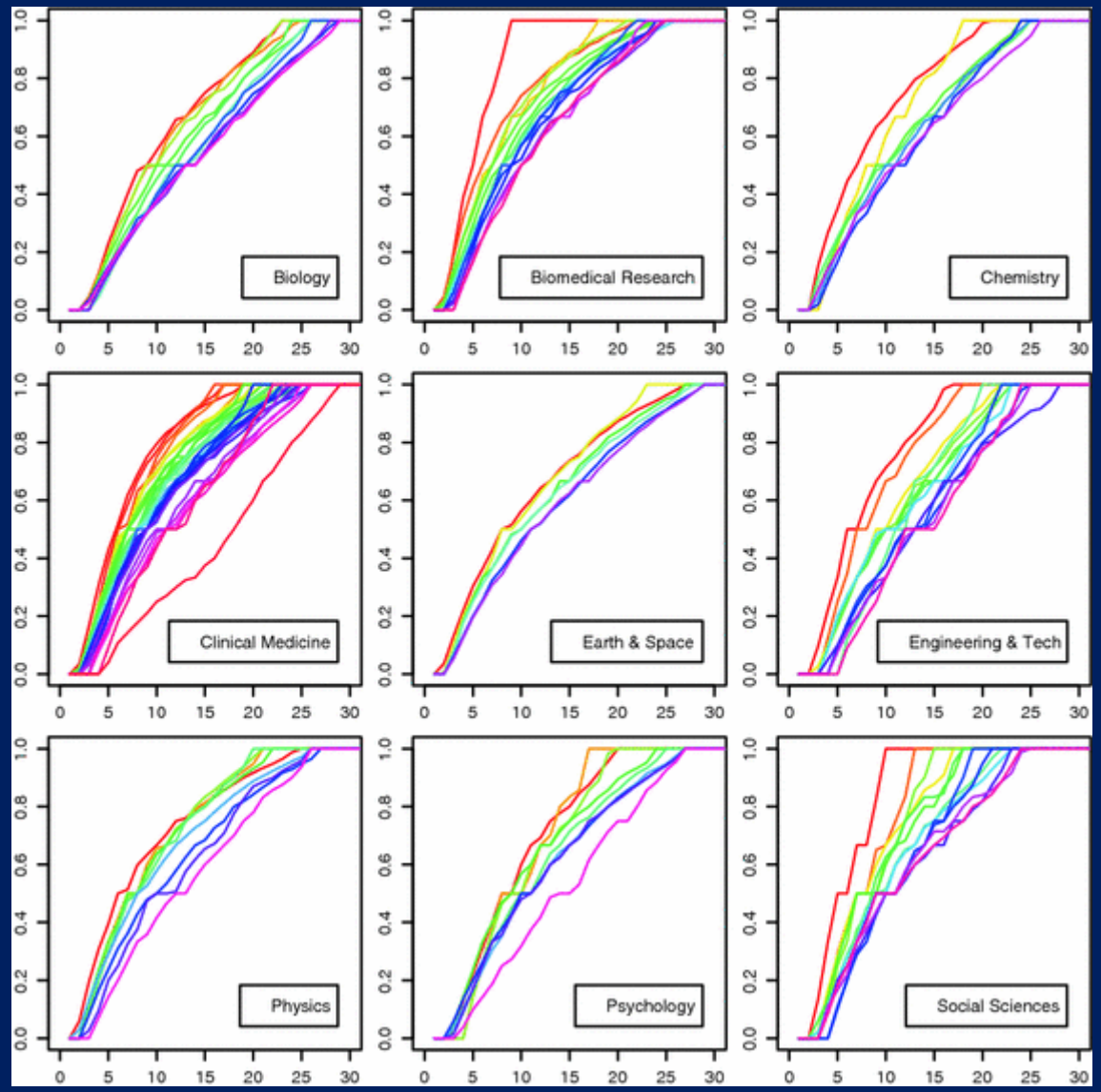
Citation time window choice for research impact evaluation

Jian Wang

Received: 5 March 2012 / Published online: 26 May 2012

Abstract This paper aims to inform choice of citation time window for research evaluation, by answering three questions: (1) How accurate is it to use citation counts in short time windows to approximate total citations? (2) How does citation ageing vary by research fields, document types, publication months, and total citations? (3) Can field normalization improve the accuracy of using short citation time windows? We investigate the 31-year life time non-self-citation processes of all Thomson Reuters Web of Science journal papers published in 1980. The correlation between non-self-citation counts in each time window and total non-self-citations in all 31 years is calculated, and it is lower for more highly cited papers than less highly cited ones. There are significant differences in citation ageing between different research fields, document types, total citation counts, and publication months. However, the within group differences are more striking; many papers in the slowest ageing field may still age faster than many papers in the fastest ageing field. Furthermore, field normalization cannot improve the accuracy of using short citation time windows. Implications and recommendations for choosing adequate citation time windows are discussed.

Keywords Citation time window · Citation ageing · Research evaluation · Field normalization



X-axes are year. Y-axes are the median ratio between cumulative non-self-citation counts in year x and total non-self-citation counts

ALTMETRICS: Alternative metrics in scientometrics

Citations are said to be most significant measure of scientific impact

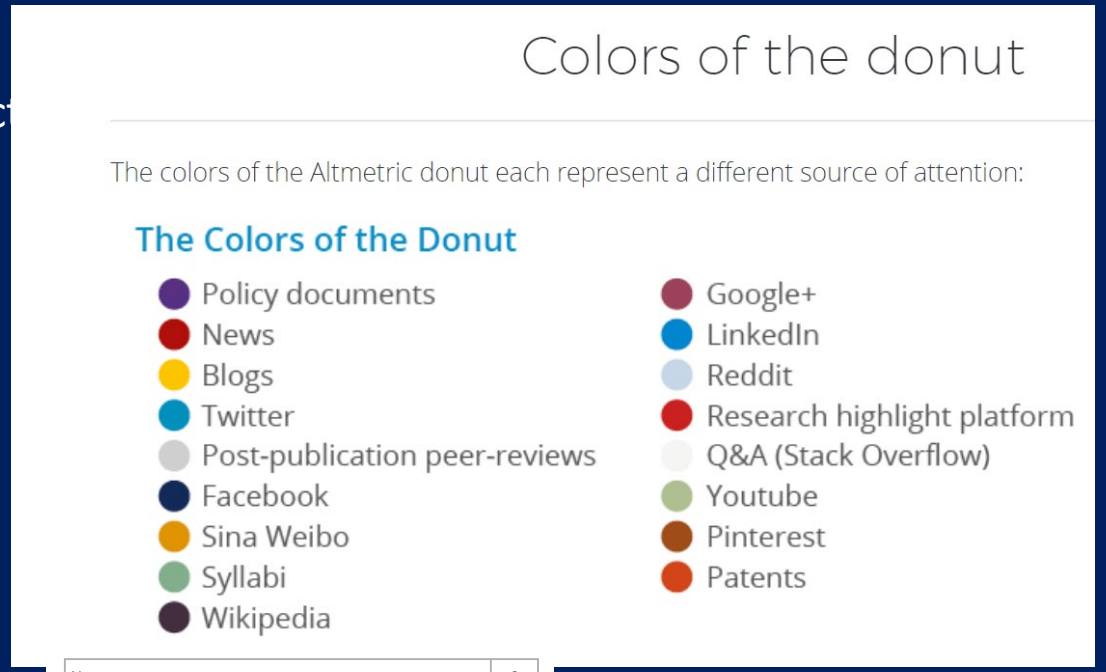
Altmetrics "the study and use of scholarly impact measures based on activity in online tools and environments" (Priem 2014).

Citations measures only a small fraction of user engagement: only **one in 70 users** who download a PDF of the paper will cite it (Lin & Fenner, 2013)

Citation is tracking formal acknowledged influence whereas altmetrics is tracking unintentional and informal influence (Jason Priem et al., 2012).

Scholarly use of internet and social media also should be considered while determining the impact of an article?

Altmetric.com is an online tool which tracks the online activities of a research article (http://www.altmetric.com)



News	8
Blog	5
Policy document (per source)	3
Patent	3
Wikipedia	3
Twitter (tweets and retweets)	1
Peer review (Publons, Pubpeer)	1
Weibo (not trackable since 2015, but historical data kept)	1
Google+ (not trackable since 2019, but historical data kept)	1
F1000	1
Syllabi (Open Syllabus)	1
LinkedIn (not trackable since 2014, but historical data kept)	0.5
Facebook (only a curated list of public Pages)	0.25
Reddit	0.25
Pinterest (not trackable since 2013, but historical data kept)	0.25
Q&A (Stack Overflow)	0.25
Youtube	0.25
Number of Mendeley readers	0
Number of Dimensions and Web of Science citations	0

SUMMARY | Twitter | Dimensions citations

So far, Altmetric has seen **59** tweets from **44** users, with an upper bound of **44,010** followers.

Jose Luis Tome
@quecoak

RT @fgiannetti_FRS: Want to know more on on how to use #UAV #Photogrammetric data for forest inventory WITHOUT any #DTM? Check out the pape...

24 Jan 2019

educación forestal
@eforestal

RT @stefanopuliti: Want to know more on on how to use #UAV #Photogrammetric data for forest inventory WITHOUT any #DTM? Check out the paper...

11 Dec 2018

AIT Associazione Italiana di Telerilevamento
@ait_italiana

RT @fgiannetti_FRS: Want to know more on on how to use #UAV #Photogrammetric data for forest inventory WITHOUT any #DTM? Check out the pape...

15 Nov 2018

Lauri Markelin
@LauriMarkelin

RT @fgiannetti_FRS: Want to know more on on how to use #UAV #Photogrammetric data for forest inventory WITHOUT any #DTM? Check out the pape...

09 Oct 2018

Irfan A. Iqbal
@IrfanAk_Iqbal

RT @castillaCFS: #ForestSAT2018 2/4: @fgiannetti_FRS showed that UAV photogrammetry can be used effectively for forest inventories even if...

08 Oct 2018

shashank
@s_shashank_s

RT @castillaCFS: #ForestSAT2018 2/4: @fgiannetti_FRS showed that UAV photogrammetry can be used effectively for forest inventories even if...

07 Oct 2018

Guillermo Castilla
@castillaCFS

#ForestSAT2018 2/4: @fgiannetti_FRS showed that UAV photogrammetry can be used effectively for forest inventories even if you don't have a pre-existing bare-ground DEM to normalize the point cloud https://t.co/NHGtmQeOT5

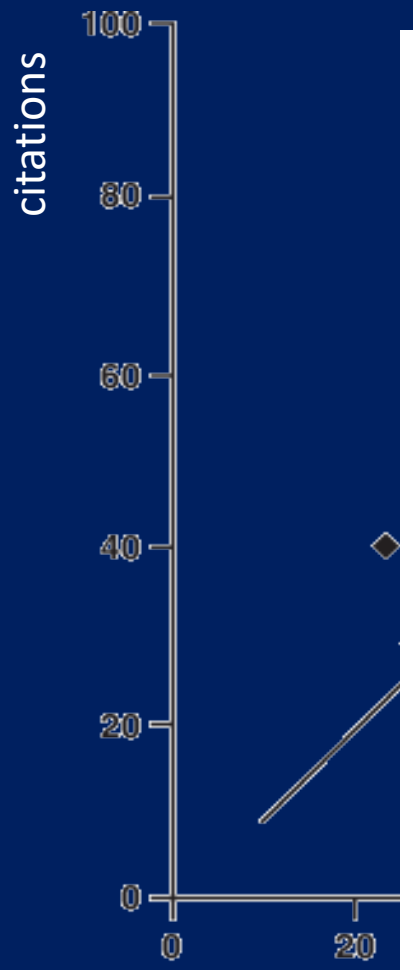
07 Oct 2018

Big DataScience Flow
@big_data_flow

RT @fgiannetti_FRS: Want to know more on on how to use #UAV #Photogrammetric data for forest inventory WITHOUT any #DTM? Check out the pape...

05 Oct 2018

FUTURE



COLLNET Journal of Scientometrics and Information Management
ISSN : 0973-7766 (Print) 2168-930X (Online)
Vol. 11(1) June 2017, pp. 103-117, DOI : 10.1080/09737766.2016.1260815

Taylor & Francis
Taylor & Francis Group

Do altmetric correlate with citation? : A study based on PLOS ONE journal

C. Syamili
R.V. Rekha

Altmetrics or alternative metrics is a new kind of metrics originated at 2010 aiming at complimenting the traditional metrics. Altmetrics can provide a better view on the influvance of research or the reach of research on people. The major objective of the study was to identify the correlation between altmetrics score and citation. For this altmetrics data and citations for the articles on "Ebola" disease published in PLOS ONE journal during the years 2010-2015 were collected. The correlation between the altmetrics scores like saves, views, Mendeley and twitter are compared with bibliometric score citation. The result shows that all the altmetric scores except twitter have good correlation with traditional bibliometric citation.

Keywords: *Altmetrics, PLOS ONE, Research impact, Citation metrics, Bibliometric*

evidence of a correlation
ltmetrics and citations

can estimate
n the basis of

an increase altmetrics to
citations!!!???

PRESENT

TO BE OR NOT TO BE…. ON TWITTER

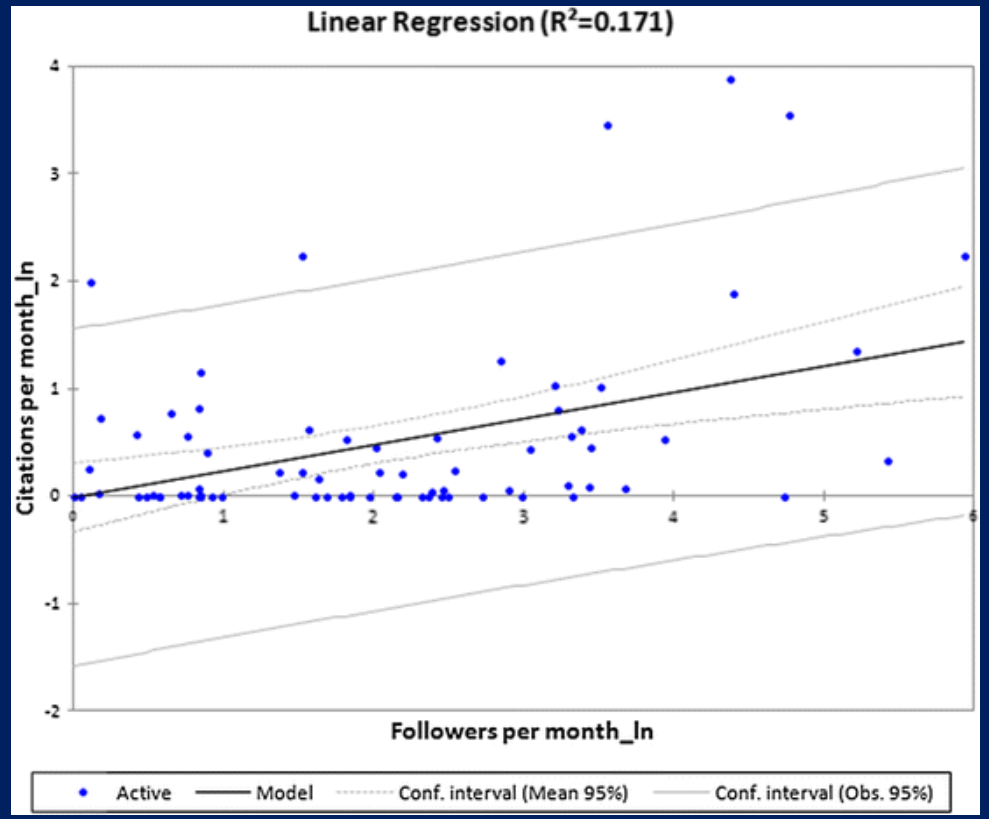
Twitter became one of **the most important tools** to disseminate research outputs and to popularise scientific advances (Ebner 2013).

Twitter usage and citation behaviour **hardly overlap**

Tweets seem to be able to predict **highly cited articles** within the first 3 days of publication

No differences were found between the citation impact (i.e. number of citations) of papers authored by **Twitter users** and **non-Twitter users**

No general conclusion can be drawn



Erdt, M., Nagarajan, A., Sin, S.-C.J., & Theng, Y.-L. (2016). Altmetrics: an analysis of the state-of-the-art in measuring research impact on social media. Scientometrics, 109, 1117-1166

Zhang, L., & Wang, J. (2018). Why highly cited articles are not highly tweeted? A biology case. Scientometrics, 117, 495-509

Ortega, J.L. (2016). To be or not to be on Twitter, and its relationship with the tweeting and citation of research papers. Scientometrics, 109, 1353-1364

AVOID THE END OF THE YEAR

"The citation trap: Papers published at year-end receive systematically fewer citations"

NO QUESTIONS IN THE TITLE

"Evidently asking the reader a question is not an optimal strategy"

FEW AUTHORS, SHORT TITLES

"We found a link between papers with fewer authors and shorter titles, which had higher rates of citations."

SHARE YOUR DATA

"Sharing your data can increase your citations." Figshare or SlideShare, or contributing to Wikipedia.

Journal of Economic Behavior and Organization 166 (2019) 667–687

Contents lists available at ScienceDirect

Journal of Economic Behavior and Organization

journal homepage: www.elsevier.com/locate/jebo

The citation trap: Papers published at year-end receive systematically fewer citations

Chao Ma[a,b], Yiwei Li[c], Feng Guo[d,*], Kao Si[e]

[a] School of Public Health, Southeast University, No.87, Dingjiaqiao Road, Nanjing, 210009, China
[b] School of Public Health, Yale University, U.S
[c] Department of Marketing and International Business, SEK101, 1/F Simon and Eleanor Kwok Building, Lingnan University, Tuen Mun, Hong Kong, China
[d] School of Public Economics and Administration, Shanghai University of Finance and Economics, No.777, Guoding Road, Shanghai, 200433, China
[e] Faculty of Business Administration, University of Macau, E22, Avenida da Universidade, Macau, Taipa, China

ARTICLE INFO

Article history:
Received 27 December 2018
Revised 30 July 2019
Accepted 9 August 2019
Available online 17 August 2019

JEL classification:
A11
C21
D63

Keywords:
Citation
Publication timing
Year-end
Search engine

ABSTRACT

The present research reveals that academic papers published at year-end on average receive systematically fewer citations than papers published at other times in the year. Using more than 200,000 papers in economics published between 1956 and 2010, the results of our analysis show that papers published between October and December on average get as much as 18.5% fewer citations than those published in the other months in the year. We refer to this phenomenon as *the citation trap* as there is no evidence that papers published at different times in the year differ in their academic quality. We propose that the current effect could arise because of the time window options in most online academic search engines: the specific setting of those options leads papers published at year-end to appear in the engines' search results for a systematically shorter period of time as compared to papers published at other months in the year. Our analysis reveals evidence that is consistent with the proposed mechanism and that rules out several alternative explanations. Implications of the current research for academia and possible solutions to mitigate the citation trap are discussed.

Piwowar HA, Vision TJ. 2013. Data reuse and the open data citation advantage. PeerJ 1:e175 https://doi.org/10.7717/peerj.175

Hudson, J. (2016). An analysis of the titles of papers submitted to the UK REF in 2014: authors, disciplines, and stylistic details. Scientometrics, 109, 871-889

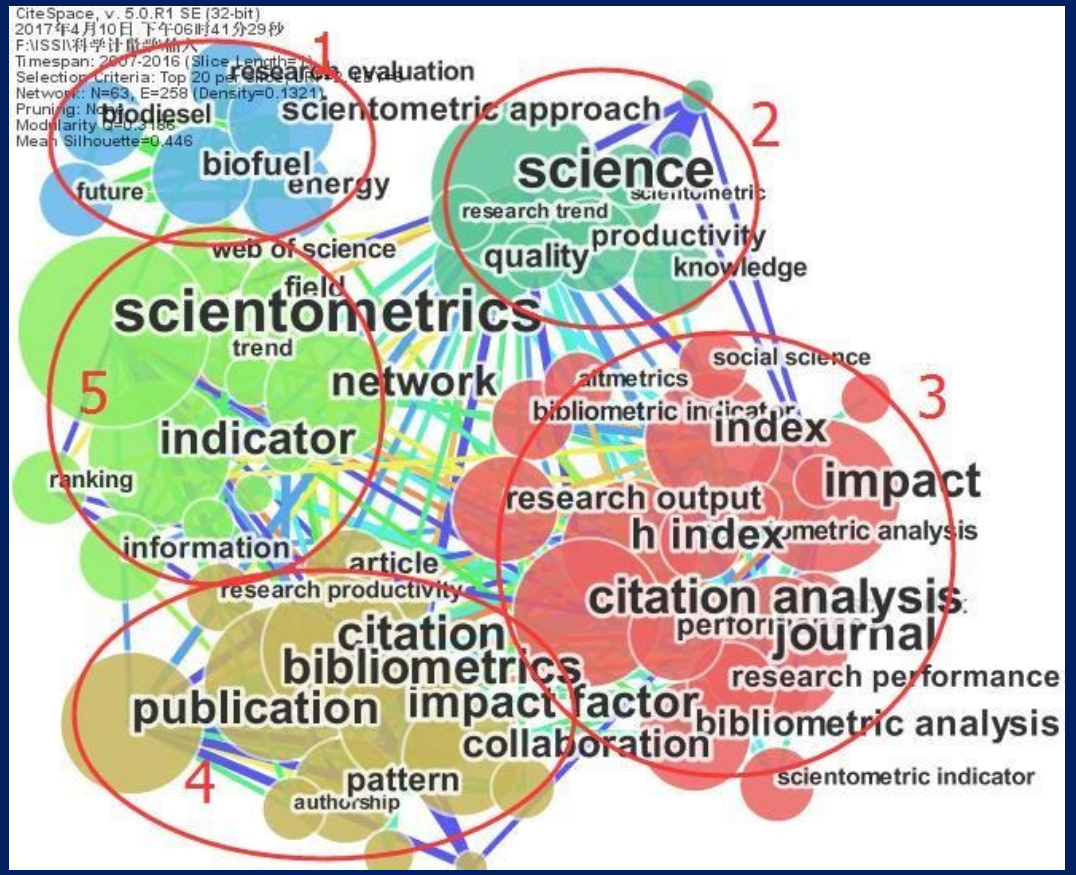
Do academics today have to participate actively in social media to stay relevant?

Only 15%-24% of the publications presenting some altmetric activity and concentrating in the most recent publications

Weak correlation (ranging from 0.08 to 0.5) between altmetrics and citation counts, confirming that altmetrics do indeed measure a different kind of research impact (Erdt et al., 2016)

Public engagement Scientific communication does not only refer to the communication among scientists, but also between scientists and the general public

Scientific impact is not equivalent with **societal impact**, and our findings have practical implications for improving societal impact of scientific research



Bornmann, L. (2015). Alternative metrics in scientometrics: a meta-analysis of research into three altmetrics. *Scientometrics, 103, 1123-1144*

Snijder, R. (2016). Revisiting an open access monograph experiment: measuring citations and tweets 5 years later. Scientometrics, 109, 1855-1875

nature COMMUNICATIONS

Corrected: Author Correction

ARTICLE

https://doi.org/10.1038/s41467-019-09959-4 OPEN

Discrepancy in scientific authority and media visibility of climate change scientists and contrarians

Alexander Michael Petersen [1], Emmanuel M. Vincent[2,3] & Anthony LeRoy Westerling[1,3,4]

We juxtapose 386 prominent contrarians with 386 expert scientists by tracking their digital footprints across ~200,000 research publications and ~100,000 English-language digital and print media articles on climate change. Projecting these individuals across the same backdrop facilitates quantifying disparities in media visibility and scientific authority, and identifying organization patterns within their association networks. Here we show via direct comparison that contrarians are featured in 49% more media articles than scientists. Yet when comparing visibility in mainstream media sources only, we observe just a 1% excess visibility, which objectively demonstrates the crowding out of professional mainstream sources by the proliferation of new media sources, many of which contribute to the production and consumption of climate change disinformation at scale. These results demonstrate why climate scientists should increasingly exert their authority in scientific and public discourse, and why professional journalists and editors should adjust the disproportionate

[personal] Conclusions

- Early stage researchers should use social media to increase the impact of their research
- Professors should use social media to increase the authority of science-based assertations against fake-news

#OneStepAhead