Scientometrics (2019) 119:1715–1727
https://doi.org/10.1007/s11192-019-03108-w

The impact of video abstract on citation counts: evidence from a retrospective cohort study of New Journal of Physics

Qianjin Zong[1] · Yafen Xie[2] · Rongchan Tuo[3] · Jingshi Huang[1] · Yang Yang[4]

Received: 4 January 2019 / Published online: 20 April 2019

Abstract
In this paper, we addressed the question of whether a video abstract of an article affects its citation counts. A retrospective cohort study was conducted using the research articles published in *New Journal of Physics* during 2010 and 2016. Articles with video abstract ($N=315$) as the experimental group, were matched 1:2, with articles without video abstract ($N=630$) as the control group, by the same publishing issue, same article type. Specifically, the articles lacking video abstract that appeared immediately before and after each experimental group article were included in the control group. A negative binomial regression model was employed to analyze the data. After controlling for the characteristics of articles (including the number of authors, international co-authorship, character counts of title, character counts of text-based abstract, keyword counts, reference counts, page counts and funding), our results showed that articles with video abstract (experimental group) compared to the articles without video abstract (control group) were expected to have a rate 1.206 times greater for citation counts. This study suggests that a video abstract can potentially serve as a useful genre of a research article for receiving more citation counts.

Keywords Video abstract · Citation counts · Citation analysis · Altmetrics · Retrospective cohort study

Introduction

Advantages in Internet and multimedia contribute to academic communications. A new genre of academic communication, named video abstract, has attracted a great deal of attention from a few journals. A video abstract, which is usually less than 5 min long, is

✉ Qianjin Zong
zongqj@m.scnu.edu.cn

[1] School of Economics and Management, South China Normal University, Guangzhou 510006, China

[2] Guangdong Provincial Work Injury Rehabilitation Hospital, Guangzhou 510440, China

[3] Rutgers, The State University of New Jersey, New Brunswick, NJ 08901, USA

[4] China Electronic Product Reliability and Environmental Testing Research Institute, Guangzhou 510610, China

professionally animated and narrated synopsis that briefly explains a paper's methods, findings and contributions to the research field (WileyPress. 2018; CellPress. 2018). The *Journal of Visualized Experiments*, launched in 2007, provides one of the earliest examples of the digital video abstract (Spicer 2014). Currently, increasing numbers of publishers (Cell Press, WILEY, etc.) and journals (*New Journal of Physics*, *Journal of the American Chemical Society*, etc.) encourage authors to make and share their researches with video abstract. Although a traditional text-based abstract serves a similar purpose, a video abstract provides an opportunity to communicate research in a rich multimedia format that may have a greater impact (Jakhar and Kaur 2018). The aim of the current study was to investigate the impact of a video abstract of a paper on its citation counts via a retrospective cohort study. This research could contribute to comprehending the influence of a video abstract of an article on its citation counts by controlling for characteristics of the article. The findings could help journal editors, publishers, researchers, and research administration offices understand the impact of a video abstract on the citation counts of a paper, thus enhancing the academic impact of scientific literature.

Literature review

Online videos are a new method of academic communication (Xu et al. 2018). Thelwall et al. (2012) performed a content analysis of YouTube videos tweeted by academics. The results of their study showed that view counts on videos for small specialist are small. However, they suggested that these videos could be regarded as supporting other scientific activities that might have measurable outputs. Online video is also a useful way to support discussion in a scientific publication. Kousha et al. (2012) conducted a content analysis of 551 YouTube videos cited by publications in Scopus. They found that approximately 78% and 77% of the cited videos content related to the sciences and to medicine and health, respectively, including demonstrations of natural or formal science phenomena, documentaries, educational or hobby-related videos and academic lectures.

Videos of TED Talks are often focused on science and technology and are considered a successful means of academic communication (Sugimoto et al. 2017). A bibliometric analysis conducted by Sugimoto and Thelwall (2013) showed that citation counts (from Web of Knowledge) of a video of TED Talk had no significant correlation with YouTube views and TED site views of the video of TED Talks, while the YouTube metrics (views, comments, like proportion) and TED site metrics (views, comments) mostly correlated highly with each other. Therefore, they suggested that videos of TED Talks primarily impact the public sphere rather than the academic realm. Sugimoto et al. (2013) examined TED Talk presenters' characteristics and the relationship between those characteristics and the number of citations. They found that 77% of the academic TED presenters were cited more frequently above the average. The main reason for this higher citation frequency was that 74% of the presenters were affiliated with institutions that were among the top 200 universities worldwide. That is, the TED Talk presenters were high-impact scholars. It should be noted that audiences with different cultures have different preferences with regard to TED Talk topics. Pan et al. (2016) investigated the TED Talks viewed on YouKu (a Chinese video website) and YouTube and found that topics on global issues and technology were more popular on YouKu, whereas topics on entertainment and psychology/philosophy were more popular on YouTube.

Unlike videos of TED Talks and the majority of scientific videos available on video portals (e.g., YouTube, YouKu, etc.), a video abstract is usually created after a paper has been accepted and accompanies the paper when it is published (Hartley 2016). A video abstract of a paper is used for explaining the research in a broad-scope (Gulley 2014). There has yet to be a study investigating the impact of video abstracts on citation counts, although Spicer (2014) conducted a systematic overview of video abstracts in science journals, including the definition of a video abstract, history, publication trends, and guideline trends. More importantly, he examined the relationship between the YouTube and native platform (journal website) video abstract view counts and the relationship between the video abstract view counts (on both YouTube and the native platform) and the article view counts. Based on usage data (view counts of articles and video abstracts) for 56 articles in *New Journal of Physics*, he used the Spearman rank correlation coefficient to examine the relationship between video abstract view counts on YouTube and the native platform and the relationship between the video abstract view counts and the article view counts. The results of his study revealed that video abstract view counts on YouTube had a moderate positive relation with the video abstract view counts on the *New Journal of Physics* website; the video abstract view counts on the *New Journal of Physics* website had a strong, positive correlation with the article view counts; and the video abstract view counts on YouTube had a moderate positive correlation with the article view counts.

A study conducted by Rees et al. (2015) found further evidence to support a weak positive correlation between the video abstract view counts and the full article view counts. Furthermore, they investigated differences in citation counts of articles with and without video abstracts in a controlled trial with 62 articles. The results showed that there was no difference in the mean number of citations for articles with or without a video abstract ($P > 0.05$).

However, few studies have focused on the impact of video abstracts on citation counts. The pilot study by Rees et al. (2015) was a controlled trial (based on 62 articles with video abstracts) intended to compare the citation counts of articles with and without video abstracts. However, a larger data set is needed to identify a difference. Although for the control group they chose the same type of article (without video abstracts) with similar publication dates to those of the articles with video abstracts, they did not control for other characteristics of the articles, such as the page counts, character counts of title, character counts of text-based abstract, keyword counts, counts of references, etc. These potential confounders may affect the citation counts (Didegah et al. 2018; Gnewuch and Wohlrabe 2017; Guo et al. 2018; Hafeez et al. 2019; Hudson 2016; Jamali and Nikzad 2011). Thus, our study investigated the impact of video abstracts on citation counts via a retrospective cohort study based on a relatively large data set; we conducted a negative binomial regression analysis after controlling for the number of authors, international co-authorship, character counts of title and text-based abstract, keyword counts, reference counts, page counts and funding.

Methods

Data collection

Research articles published in *New Journal of Physics* during 2010 and 2016 were selected. *New Journal of Physics* was chosen because it was an early adopter of video

abstracts and continues to encourage authors to submit video abstracts. Moreover, *New Journal of Physics* has the largest number of video abstracts to date. Video abstracts of *New Journal of Physics*, usually less than 4 min, are used for introducing the topic of the article, highlighting the main results and conclusions, and discussing future potential developments in the field (IOP-Publishing 2017). In *New Journal of Physics*, a video abstract is published alongside the text-based abstract on the full-text webpage for the article (an example of an article with a video abstract on its full-text webpage can be found at the following site: https://iopscience.iop.org/article/10.1088/1367-2630/aaacea/meta). Readers can play the video abstract online or download it. Furthermore, a transcript (a.txt file written in English) of the video abstract is available for readers to facilitate their understanding of the research.

Retrospective cohort studies are common in the medical sciences (Basile et al. 2018; Isogai et al. 2017) and have been conducted in the field of Scientometrics (Lokker et al. 2011; Cramond et al. 2016; Clavería et al. 2000). We performed a retrospective cohort study with articles published in *New Journal of Physics* during 2010 and 2016. Research articles published during 2010 (the publication year of the first article to include a video abstract) and 2016 were chosen because of the balance of sufficient sample size and a fair chance of being cited up. Moreover, the peak citation time for physical science journals is 2 years (Kim et al. 2018). All articles in the data set were published at least 2 years ago, with the citations counted up to 24 December 2018 (we gathered citation counts for the articles via Scopus API on 12 September 2018 and updated the citation counts via Scopus API on 24 December 2018).

First, the information about the characteristics (e.g., DOI, title, video abstract, text-based abstract, and references) of all articles published in *New Journal of Physics* during 2010 and 2016 was gathered on 22 August 2018.

Second, we used Scopus API (Elsevier. 2018a) via the DOI of each article to obtain the citation count for each article (gathered on 12 September 2018 and updated on 24 December 2018). Scopus was selected as the source for the citation counts in this study because it is the largest citation database to date (Elsevier 2018b).

Experimental group and control group design

Articles with a video abstract (e.g., one article referred to hereafter as T) were selected as the experimental group. To standardize the articles in the experimental and control groups, the articles without video abstracts that appeared in the same issue before and after each article in the experimental group were set as the control group. The experimental and control group articles were paired in a 1:2 ratio. It should be noted that there were several special cases. First, if T was the first article of an issue, the next two articles without video abstracts of T were included in the control group. Second, if T was the last article of an issue, then the previous two articles without video abstracts were included in the control group. Third, if the article that appeared before T (hereafter referred to as S) had a video abstract, then the two articles without video abstracts appearing before S and the two articles without video abstracts following T were included in the control group. Fourth, if the article following T (hereafter referred to as U) had a video abstract, and then the two articles without video abstracts appeared before T and the two articles without video abstracts following U were included in the control group.

Variables and data processing

The article citation count was the dependent variable, and the independent variable was the group (0 = control group of literatures without video abstracts, 1 = experimental group of literatures with video abstracts).

The controlled variables were the article characteristics, including the number of authors, number of institutions, international co-authorship, character counts of title, character counts of text-based abstract, reference counts, funding, page counts and keyword counts.

The number of authors and number of institutions were calculated directly from the raw data. International co-authorship was defined by the number of distinct countries in the author institutions of each article (Didegah and Thelwall 2013, 2014) and calculated by a Python program for processing the raw data. Character counts of title, character counts of text-based abstract and reference counts were automatically calculated from the raw data. Funding was a binary variable (0 = no funding; 1 = funding). The page counts was defined as the number of pages in each article. The keyword counts was defined as the number of keywords in each paper.

Unfortunately, the page counts and keyword counts for each article were not provided on the *New Journal of Physics* website; instead, they were provided in the PDFs of the full-text articles. Therefore, we downloaded the PDFs of the full-text versions of all the articles in the experimental and control groups. Next, we developed a Python program based on the package PyPDF2 (Fenniak and Phaseit-Inc. 2016) to extract the numbers of pages and keywords from the PDFs of the full-text versions of all the articles in the experimental and control groups. Then, we calculated the page and keyword counts for each article.

Statistical procedures

Descriptive statistics were used to quantitatively describe the features of the sample. A Spearman correlation analysis was conducted to investigate the relations between the controlled variables and the citation counts.

It should be noted that the independent variable in this study (citation counts) was count data. Count models (e.g., Poisson regression model, negative binomial regression model, zero-inflated negative binomial regression model) are appropriate estimation techniques for count data. However, the Poisson distribution is limited by the equality of the mean and variance of the data (Hanssen and Jorgensen 2015) and cannot adequately deal with over-dispersed data (Didegah and Thelwall 2013). The variance in the citation counts (dependent variable) in this study was greater than its mean; therefore, the Poisson regression model was rejected. In addition, the citation counts in this study did not have an excessive number of zeros (only 25 articles had citation counts of zero). Under these conditions, the negative binomial regression model was a reasonable alternative. In fact, a negative binomial regression model has been employed in several studies to assess the influences of various factors on citation counts (Hanssen and Jorgensen 2015; Tu 2019). Therefore, a negative binomial regression model was selected to reveal the impact of video abstracts on citation counts.

Results

Descriptive statistics and correlation analyses

In total, 945 research articles published in *New Journal of Physics* were identified. Specifically, 315 articles were in the experimental group, and 630 articles were in the control group. Of the 945 articles, 798 articles were supported by funding, and 147 articles did not receive funding. The results of descriptive statistics of variables are presented in Table 1.

With regard to the controlled variables, the mean values of the number of authors, number of institutions, international co-authorship, character counts of title, character counts of text-based abstract, keyword counts, reference counts and page counts in the data set were 14 (SD = 162.566), 3.70 (SD = 14.555), 1.99 (SD = 2.414), 10.05 (SD = 3.433), 150.98 (SD = 56.165), 1.82 (SD = 2.795), 42.81 (SD = 20.920), 15.91 (SD = 7.374), and 19.8 (SD = 31.304), respectively. The mean (SD) citation counts was 19.800 (31.304). This suggests that the citation count data were over-dispersed.

Correlations among the variables were calculated by Spearman's correlation analysis. The results are shown in Table 2.

The citation counts were significantly positively correlated with the number of authors ($r = 0.139$, $p < 0.01$), number of institutions ($r = 0.091$, $p < 0.01$), international coauthorship ($r = 0.104$, $p < 0.01$), reference counts ($r = 0.109$, $p < 0.01$) and page counts ($r = 0.206$, $p < 0.01$). The character counts of title ($r = -0.081$, $p < 0.05$) and keyword counts ($r = -0.332$, $p < 0.01$) were negatively correlated with the citation counts. The character counts of text-based abstract were not correlated with the citation counts ($p > 0.05$).

Negative binomial regression analysis

The variance inflation factor (VIF) was calculated for each controlled variable. The preliminary result showed that there was multicollinearity (O'brien 2007; Mela and Kopalle 2002) between the number of authors (VIF = 56.90) and the number of institutions (VIF = 82.32). The results of the Spearman's correlation analysis showed that the Spearman's correlation coefficient for the relationship between the number of authors and the citation counts was 0.139 ($p < 0.01$), and the Spearman correlation coefficient for the relationship between the number of institutions and the citation counts was 0.091 ($p < 0.01$). Therefore, we removed the number of institutions from the regression model.

Table 1 Descriptive statistics of the data set

	N	Min	Max	Mean	SE	SD
Number of authors	945	1	3062	14.000	5.288	162.566
Num of institutions	945	1	270	3.700	0.473	14.555
International co-authorship	945	1	42	1.990	0.079	2.414
Character counts of title	945	3	25	10.050	0.112	3.433
Character counts of text-based abstract	945	32	501	150.980	1.827	56.165
Keyword counts	945	0	14	1.820	0.091	2.795
Reference counts	945	6	328	42.810	0.681	20.920
Page counts	945	5	57	15.910	0.240	7.374
Citation counts	945	0	422	19.800	1.018	31.304

Table 2 Spearman's correlation coefficients

(No.) variables	1	2	3	4	5	6	7	8	9
1 Citation counts	1								
2 No. of authors	0.139[b]	1							
3 No. of institutions	0.091[b]	0.560[b]	1						
4 International co-authorship	0.104[b]	0.385[b]	0.699[b]	1					
5 Character counts of title	−0.081[a]	0.083[a]	0.017	−0.049	1				
6 Character counts of text-based abstract	0.049	0.007	0.066[a]	−0.004	0.111[b]	1			
7 Keyword counts	−0.332[b]	−0.012	−0.006	0.008	0.049	0.161[b]	1		
8 Reference counts	0.109[b]	0.02	0.061	0.061	0.105[b]	0.212[b]	0.154[b]	1	
9 Page counts	0.206[b]	−0.121[b]	0.064	0.091[b]	0.021	0.274[b]	−0.280[b]	0.424[b]	1

$N = 945$

[a]Correlation is significant at the 0.05 level (2-tailed)

[b]Correlation is significant at the 0.01 level (2-tailed)

Table 3 The coefficients from the negative binomial regression model

Variables	Coef.	SE	z	$P>z$	[95% CI]	
Number of authors	0.000	0.000	-0.040	0.970	−0.001	0.001
International co-authorship	0.022	0.033	0.650	0.513	−0.044	0.087
Character counts of title	−0.025	0.009	−2.700	0.007	−0.043	−0.007
Character counts of text-based abstract	0.001	0.001	1.560	0.118	0.000	0.002
Keyword counts	−0.139	0.012	−11.710	0.000	−0.162	−0.116
Reference counts	0.004	0.002	2.610	0.009	0.001	0.008
Page counts	0.008	0.005	1.530	0.126	−0.002	0.018
Funding	0.169	0.091	1.860	0.062	−0.009	0.347
Group	0.187	0.069	2.730	0.006	0.053	0.322
_cons	2.685	0.164	16.410	0.000	2.365	3.006
alpha	0.911	0.042			0.833	0.996

$N=945$; *LR chi2* (9) = 171.59, *Prob > chi2* = 0.000; Likelihood-ratio test of alpha = 0: *Prob >=chibar2* = 0.000; The dependent variable was citation counts; group: 0 = control group of literatures without video abstracts, 1 = experimental group of literatures with video abstracts

Table 4 The IRRs from the negative binomial regression model

Variables	IRR	SE	z	$P>z$	[95% CI]	
Number of authors	1.000	0.000	−0.040	0.970	0.999	1.001
International co-authorship	1.022	0.034	0.650	0.513	0.957	1.091
Character counts of title	0.976	0.009	−2.700	0.007	0.958	0.993
Character counts of text-based abstract	1.001	0.001	1.560	0.118	1.000	1.002
Keyword counts	0.870	0.010	−11.710	0.000	0.850	0.891
Reference counts	1.004	0.002	2.610	0.009	1.001	1.008
Page counts	1.008	0.005	1.530	0.126	0.998	1.018
Funding	1.184	0.107	1.860	0.062	0.991	1.415
Group	1.206	0.083	2.730	0.006	1.054	1.379
_cons	14.664	2.400	16.410	0.000	10.640	20.210

A negative binomial regression model was used to analyze the data. The coefficients from the negative binomial regression model are shown in Table 3. To interpret the results, the incidence rate ratios (IRRs) of the negative binomial regression model were calculated and are presented in Table 4.

The alpha value was significantly different from zero ($p<0.001$). This result suggested that the dataset was over-dispersed and that the negative binomial model was more appropriate than the Poisson regression model. The regression model was statically significant (*LR chi2*(9) = 171.59, *Prob > chi2* = 0.000). The character counts of title ($p<0.01$) and keyword counts ($p<0.001$) were shown to be statistically significant to explain citation counts, with a negative effect of the regression coefficient. The number of authors ($p>0.05$), international co-authorship ($p>0.05$), character counts of text-based abstract ($p>0.05$), page counts ($p>0.05$) and funding ($p>0.05$) were shown to be statistically nonsignificant to predict citation counts. Reference counts was shown to be statistically significant to explain citation counts, with a positive effect of the regression coefficient ($p<0.01$). Articles with

video abstract (experimental group) compared to articles without video abstract (control group), while holding the other variables constant in the model, were expected to have a rate 1.206 times greater for citation counts.

Discussion

The results of the current study showed that articles with video abstracts received more citation counts compared to articles without video abstracts when controlling the characteristics of articles including number of authors, international co-authorship, character counts of title, character counts of text-based abstract, keyword counts, reference counts, page counts and funding. There may be several possible explanations for this finding.

First, a video abstract can increase the replicability and credibility of the article, thus helping to receive more citations. In recent years, there has been increasing concern regarding the replicability of scientific findings (Cheng et al. 2018). The replicability crisis has brought about many changes in the scientific community. One of these changes is enhanced transparency of data and methods, promoting research replicability and credibility (Payne et al. 2017; Burton et al. 2017; McBee et al. 2018). A video abstract enables authors to personally demonstrate the detailed process of experiment or data processing. As consequence, video abstracts play an important role in increasing the transparency of methodologies and processes in research (Jamali et al. 2018). Increased transparency could improve the credibility of the research. Additionally, the decision to cite an article is usually based on an assessment of credibility of the study (Bornmann and Marx 2014; Greenberg 2011), and a lack of replicability and credibility reduces the likelihood of an article being cited. As a result, the presence of a video abstract may increase the number of times an article is cited.

Second, video abstracts enhance understanding of scientific researches. Authors can present the background of their research, explain the importance of their work (Schlarb et al. 2018), and discuss their findings, often using animation and infographics (Ladher and Jarvies 2013). The old saying "*a picture is worth a thousand words*" is true; however, today, a video can be even more powerful at pulling audiences into a story (McGrath and Brandon 2016). A video abstract enables audiences to understand the research more deeply. As a result, the audiences are likely to cite the research which they have a comprehensive understanding of. Therefore, this could explain why a video abstract of an article can enhance its citation counts.

In addition, video abstracts can improve the accessibility, visibility (McGrath and Brandon 2016) and popularity (Ruriani et al. 2017) of scientific literatures, thus enhancing their citation counts. Video abstracts are usually uploaded to the journal's website and online video platforms, such as YouTube, and video abstracts are available for free to readers worldwide. In addition, the journal websites and online video platforms provide many tools to promote the sharing of video abstracts. Studies are therefore made accessible and visible to a wider audience and can be easily shared (Ladher and Jarvies 2013). A survey with authors of Dove Medical Press journals reported that 73% of the authors thought that one of the primary benefits of a video abstract was increased reach of the headline results (Lê et al. 2015). Furthermore, a case study (Spicer 2014) on investigating video abstract viewership data from *New Journal of Physics* showed that video abstract view counts had a strong, positive monotonic correlation with article usage counts. More importantly, that case study revealed that articles with video abstracts accounted for 36%

of the top 25 articles and 18% of the 100 most popular articles. A video abstract accompanies with an article is published together with the article, rather than be published after the article. Therefore, a video abstract may help increase the popularity of an article. Previous studies have demonstrated that citation counts are significantly positively correlated with article views (Ortega 2018; Liu et al. 2013), readership (Thelwall and Wilson 2016; Thelwall 2018) and social media (Shu et al. 2018; Erdt et al. 2016). Moreover, a path analysis revealed that an article's view count positively and significantly predicts the citation count (Ebrahimy et al. 2016). Consequently, video abstracts may increase the visibility and popularity of an article, which, in turn, may improve the citation counts.

Conclusion

This study investigated the impact of a video abstract of an article on its citation counts via a negative binomial regression model. The results revealed that a video abstract of an article had a significant positively impact on its citation count after controlling for other characteristics of the article, including the number of authors, international co-authorship, character counts of title, character counts of text-based abstract, keyword counts, reference counts, page counts and funding. This finding suggests that a video abstract can potentially serve as a useful genre for receiving more citation counts.

This study has some limitations. Although *New Journal of Physics* has the largest number of video abstracts to date, the conclusions of this study may not be generalizable to other journals. To increase the generalizability of these conclusions, further studies should include articles from additional journals in the data set. In addition, the content of the video abstracts should be considered into the model. Further studies should investigate the effects of the content of a video abstract (e.g., some video abstracts may focus on methods, while some video abstracts may focus on other aspects) on the citation counts.

Despite the limitations mentioned above, the results of this study have some practical implications for scientific communities. The results of this study revealed that the presence of a video abstract had a significant positive impact on the citation count of an article. The publishers who do not yet support uploading a video abstract should consider providing the opportunity for authors to include a video abstract for their manuscripts. Journal editors should encourage authors to include video abstracts with their accepted manuscripts and provide authors with detailed instructions on how to create a video abstract. Authors and research administration offices should recognize the importance of a video abstract with regard to the academic impact of an article.

Acknowledgements This study was supported by the National Natural Science Foundation of China (Grant No. 71704057) and Guangdong Planning office of Philosophy and Social Science of China (Grant No. GD17YTS01).

References

Basile, J., Egan, B., Punzi, H., Ali, S., Li, Q., Patel, M., et al. (2018). Risk of hospitalization for cardiovascular events with beta-blockers in hypertensive patients: A retrospective cohort study. *Cardiology and therapy*. https://doi.org/10.1007/s40119-018-0117-y.

Bornmann, L., & Marx, W. (2014). The wisdom of citing scientists. *Journal of the Association for Information Science and Technology, 65*(6), 1288–1292. https://doi.org/10.1002/asi.23100.

Burton, A., Koers, H., Manghi, P., La Bruzzo, S., Aryani, A., Diepenbroek, M., et al. (2017). The data-literature interlinking service towards a common infrastructure for sharing data-article links. *Program-Electronic Library and Information Systems, 51*(1), 75–100. https://doi.org/10.1108/prog-06-2016-0048.

CellPress. (2018). *Video abstract guidelines*. https://www.cell.com/video-abstract-guidelines. Accessed 4 Sept 2018.

Cheng, Y. T., Li, J. C. H., & Liu, X. Y. (2018). Limited usefulness of capture procedure and capture percentage for evaluating reproducibility in psychological science. *Frontiers in Psychology, 9,* 9. https://doi.org/10.3389/fpsyg.2018.01657.

Clavería, L. E., Guallar, E., Camí, J., Conde, J., Pastor, R., Ricoy, J. R., et al. (2000). Does peer review predict the performance of research projects in health sciences? *Scientometrics, 47*(1), 11–23. https://doi.org/10.1023/a:1005609624130.

Cramond, F., Irvine, C., Liao, J., Howells, D., Sena, E., Currie, G., et al. (2016). Protocol for a retrospective, controlled cohort study of the impact of a change in Nature journals' editorial policy for life sciences research on the completeness of reporting study design and execution. *Scientometrics, 108*(1), 315–328. https://doi.org/10.1007/s11192-016-1964-8.

Didegah, F., Bowman, T. D., & Holmberg, K. (2018). On the differences between citations and Altmetrics: An investigation of factors driving Altmetrics versus citations for finnish articles. *Journal of the Association for Information Science and Technology, 69*(6), 832–843. https://doi.org/10.1002/asi.23934.

Didegah, F., & Thelwall, M. (2013). Which factors help authors produce the highest impact research? Collaboration, journal and document properties. *Journal of Informetrics, 7*(4), 861–873. https://doi.org/10.1016/j.joi.2013.08.006.

Didegah, F., & Thelwall, M. (2014). Article properties associating with the citation impact of individual articles in the social sciences. In *Paper presented at the proceedings of the science and technology indicators conference 2014 Leiden*, Leiden, the Netherlands. 3–5 Sept 2014.

Ebrahimy, S., Mehrad, J., Setareh, F., & Hosseinchari, M. (2016). Path analysis of the relationship between visibility and citation: The mediating roles of save, discussion, and recommendation metrics. *Scientometrics, 109*(3), 1497–1510. https://doi.org/10.1007/s11192-016-2130-z.

Elsevier. (2018a). Elsevier scopus APIs. https://dev.elsevier.com/sc_apis.html. Accessed 23 Aug 2018.

Elsevier. (2018b). The largest database of peer-reviewed literature-Scopus-Elsevier Solutions. https://www.elsevier.com/solutions/scopus. Accessed 23 Aug 2018.

Erdt, M., Nagarajan, A., Sin, S. C., & Theng, Y. L. (2016). Altmetrics: an analysis of the state-of-the-art in measuring research impact on social media. *Scientometrics, 109*(2), 1117–1166. https://doi.org/10.1007/s11192-016-2077-0.

Fenniak, M., & Phaseit-Inc. (2016). PyPDF2·PyPI. https://pypi.org/project/PyPDF2/. Accessed 23 Aug 2018.

Gnewuch, M., & Wohlrabe, K. (2017). Title characteristics and citations in economics. *Scientometrics, 110*(3), 1573–1578. https://doi.org/10.1007/s11192-016-2216-7.

Greenberg, S. A. (2011). Understanding belief using citation networks. *Journal of Evaluation in Clinical Practice, 17*(2), 389–393. https://doi.org/10.1111/j.1365-2753.2011.01646.x.

Gulley, N. (2014). Metrics and evaluation in publishing. In W. Blockmans, L. Engwall, & D. Weaire (Eds.), *Bibliometrics: Use and abuse in the review of research performance* (pp. 77–83). London: Portland Press.

Guo, F., Ma, C., Shi, Q. L., & Zong, Q. Q. (2018). Succinct effect or informative effect: The relationship between title length and the number of citations. *Scientometrics, 116*(3), 1531–1539. https://doi.org/10.1007/s11192-018-2805-8.

Hafeez, D. M., Jalal, S., & Khosa, F. (2019). Bibliometric analysis of manuscript characteristics that influence citations: A comparison of six major psychiatry journals. *Journal of Psychiatric Research, 108,* 90–94. https://doi.org/10.1016/j.jpsychires.2018.07.010.

Hanssen, T. E. S., & Jorgensen, F. (2015). The value of experience in research. *Journal of Informetrics, 9*(1), 16–24. https://doi.org/10.1016/j.joi.2014.11.003.

Hartley, J. (2016). What's new in abstracts of science articles? *Journal of the Medical Library Association, 104*(3), 235–236. https://doi.org/10.3163/1536-5050.104.3.011.

Hudson, J. (2016). An analysis of the titles of papers submitted to the UK REF in 2014: Authors, disciplines, and stylistic details. *Scientometrics, 109*(2), 871–889. https://doi.org/10.1007/s11192-016-2081-4.

IOP-Publishing. (2017). Video abstracts in journal articles. https://publishingsupport.iopscience.iop.org/video-abstracts/. Accessed 23 March 2019.

Isogai, T., Matsui, H., Tanaka, H., Yokogawa, N., Fushimi, K., & Yasunaga, H. (2017). Treatments and in-hospital mortality in acute myocardial infarction patients with rheumatoid arthritis: A nationwide retrospective cohort study in Japan. *Clinical Rheumatology, 36*(5), 995–1004. https://doi.org/10.1007/s10067-017-3555-3.

Jakhar, D., & Kaur, I. (2018). Video abstracts in dermoscopy: Moving beyond text. *Research in Clinical Dermatology, 1*(2), 20.

Jamali, H. R., Nabavi, M., & Asadi, S. (2018). How video articles are cited, the case of JoVE: Journal of Visualized Experiments. *Scientometrics, 117*(3), 1821–1839. https://doi.org/10.1007/s11192-018-2957-6.

Jamali, H. R., & Nikzad, M. (2011). Article title type and its relation with the number of downloads and citations. *Scientometrics, 88,* 653–661. https://doi.org/10.1007/s11192-011-0412-z.

Kim, B., Kim, Y., & Kang, J. (2018). Analysis of the citation impact of national journals toward SCIE journals on JCR ranking. *Malaysian Journal of Library & Information Science, 23*(2), 1–24.

Kousha, K., Thelwall, M., & Abdoli, M. (2012). The role of online videos in research communication: A content analysis of YouTube videos cited in academic publications. *Journal of the American Society for Information Science and Technology, 63*(9), 1710–1727. https://doi.org/10.1002/asi.22717.

Ladher, N., & Jarvies, D. (2013). Video abstracts: The latest in a series of initiatives to increase the accessibility and visibility of BMJ research. *BMJ : British Medical Journal, 347,* 1–2. https://doi.org/10.1136/bmj.f7617.

Lê, S., Rees, T., Dennis, N., Petit, S., Jones, A., & Smith, S. (2015). Video abstracts: Publication professional's and academic author's perspectives. In *Paper presented at the 11th annual meeting of the international society for medical publication professionals (ISMPP)*, Arlington, VA, USA, 27–29 April.

Liu, C. L., Xu, Y. Q., Wu, H., Chen, S. S., & Guo, J. J. (2013). Correlation and interaction visualization of altmetric indicators extracted from scholarly social network activities: dimensions and structure. *Journal of Medical Internet Research, 15*(11), e259. https://doi.org/10.2196/jmir.2707.

Lokker, C., Haynes, R. B., McKibbon, K. A., & Wilczynski, N. L. (2011). Determining the impact factors of secondary journals: A retrospective cohort study. *Journal of the American Society for Information Science and Technology, 62*(4), 637–642. https://doi.org/10.1002/asi.21493.

McBee, M. T., Makel, M. C., Peters, S. J., & Matthews, M. S. (2018). A call for open science in giftedness research. *Gifted Child Quarterly, 62*(4), 374–388. https://doi.org/10.1177/0016986218784178.

McGrath, J. M., & Brandon, D. (2016). Video abstracts: A fun, easy way to capture your audience—Try it! *Advances in Neonatal Care, 16*(1), 1–2. https://doi.org/10.1097/ANC.0000000000000271.

Mela, C. F., & Kopalle, P. K. (2002). The impact of collinearity on regression analysis: The asymmetric effect of negative and positive correlations. *Applied Economics, 34*(6), 667–677.

O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality and Quantity, 41*(5), 673–690. https://doi.org/10.1007/s11135-006-9018-6.

Ortega, J. L. (2018). The life cycle of altmetric impact: A longitudinal study of six metrics from PlumX. *Journal of Informetrics, 12*(3), 579–589. https://doi.org/10.1016/j.joi.2018.06.001.

Pan, X., Yan, E., & Hua, W. (2016). Science communication and dissemination in different cultures: An analysis of the audience for TED videos in China and abroad. *Journal of the Association for Information Science and Technology, 67*(6), 1473–1486. https://doi.org/10.1002/asi.23461.

Payne, P., Lele, O., Johnson, B., & Holve, E. (2017). Enabling open science for health research: Collaborative informatics environment for learning on health outcomes (CIELO). *Journal of Medical Internet Research, 19*(7), 5. https://doi.org/10.2196/jmir.6937.

Rees, T., Lê, S., Prevost, L., & Smith, S. (2015). Video abstracts: Do the metrics stack up? In *Paper presented at the 11th annual meeting of the international society for medical publication professionals (ISMPP)*, Arlington, VA, USA, April 27–29.

Ruriani, R., Lê, S., & Vegman, L. (2017). Let's take it from the top: A view into video abstracts. http://ismpp-newsletter.com/2017/01/25/lets-take-it-from-the-top-a-view-into-video-abstracts/. Accessed 26 Sep 2018.

Schlarb, A. A., Friedrich, A., & Claßen, M. (2018). We are pleased to announce the winner for the Dove Medical Press Video Abstract Award 2017. https://www.dovepress.com/author_guidelines.php?content_id=3195. Accessed 10 Sept 2018.

Shu, F., Lou, W., & Haustein, S. (2018). Can Twitter increase the visibility of Chinese publications? *Scientometrics, 116*(1), 505–519. https://doi.org/10.1007/s11192-018-2732-8.

Spicer, S. (2014). Exploring video abstracts in science journals: An overview and case study. *Journal of Librarianship and Scholarly Communication, 2*(2), eP1110. https://doi.org/10.7710/2162-3309.1110.

Sugimoto, C. R., & Thelwall, M. (2013). Scholars on soap boxes: Science communication and dissemination in TED videos. *Journal of the American Society for Information Science and Technology, 64*(4), 663–674. https://doi.org/10.1002/asi.22764.

Sugimoto, C. R., Thelwall, M., Larivière, V., Tsou, A., Mongeon, P., & Macaluso, B. (2013). Scientists popularizing science: Characteristics and impact of TED talk presenters. *PLoS ONE, 8*(4), e62403. https://doi.org/10.1371/journal.pone.0062403.

Sugimoto, C. R., Work, S., Larivière, V., & Haustein, S. (2017). Scholarly use of social media and altmetrics: A review of the literature. *Journal of the Association for Information Science and Technology, 68*(9), 2037–2062. https://doi.org/10.1002/asi.23833.

Thelwall, M. (2018). Early Mendeley readers correlate with later citation counts. *Scientometrics, 115*(3), 1231–1240. https://doi.org/10.1007/s11192-018-2715-9.

Thelwall, M., Kousha, K., Weller, K., & Puschmann, C. (2012). Assessing the impact of online academic videos. In K. H. Gunilla Widén (Ed.), *Social information research* (Vol. 5, pp. 195–213). Bradford: Emerald Group Publishing Limited.

Thelwall, M., & Wilson, P. (2016). Mendeley readership Altmetrics for medical articles: An analysis of 45 fields. *Journal of the Association for Information Science and Technology, 67*(8), 1962–1972. https://doi.org/10.1002/asi.23501.

Tu, J. (2019). What connections lead to good scientific performance? *Scientometrics, 118*(2), 587–604. https://doi.org/10.1007/s11192-018-02997-7.

WileyPress. (2018). Video abstracts and video bytes FAQ. https://authorservices.wiley.com/asset/photos/promote.html/VA%20FAQ%20Postcard.pdf. Accessed 4 Sept 2018.

Xu, S., Yu, H., Hemminger, B. M., & Dong, X. (2018). Who, what, why? An exploration of JoVE scientific video publications in tweets. *Scientometrics, 117*(2), 845–856. https://doi.org/10.1007/s11192-018-2880-x.