

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

2019

Investigating the Social Media Presence of Articles in Altmetrics Field Indexed in Scopus Database: An Altmetrics study

faridokht salahshoori

Zahra Abedini

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>

 Part of the [Library and Information Science Commons](#)

Investigating the Social Media Presence of Articles in Altmetrics Field Indexed in Scopus Database: An Altmetrics study

Faridokh salahshoori^{1*}. Tehran University of Medical Sciences.salahshoori.f3104@gmail.com

Zahra abedini². University of Isfahan. abedini.zahra2720@gmail.com.

Abstract

Introduction: Altmetrics is one of the novel measures of citation in social media which can be used to investigate scientific and research output. The current study was carried out in order to determine the presence of articles in Altmetrics field in social media, determining superior articles in this field based on Altmetrics criteria and determining the relation between Altmetrics measure and citation performance of these articles.

Method: This is a descriptive study with scientometrics approach using altmetrics method. The study population consisted of 337 articles in the altmetrics field indexed in Scopus database. Among these articles, 53 lacked Digital Object Identifier (DOI) which were eliminated from the study. The citation score of each article was determined by entering each article in Google Scholar database. SPSS16 software was used for data analysis. Descriptive statistics (average and standard deviation) was used to determine the average presence of articles in social media while Pearson correlation coefficient was used to determine the correlation between citation performance of articles and their total altmetrics score.

Findings: Mendeley was the most important social media used by researchers in the field of altmetrics with average score of 45.34 which was followed by Twitter with average score of 19. U-like website with average score of 0.77 and Facebook with average of 0.47 were at the next ranks. The average altmetrics score for articles in the altmetrics field was 20.77 and average citation score was 19.046 and showed that the presence of altmetrics articles in social media and citation databases (Google Scholar) is almost identical.

Conclusion: The results of the current study showed that social media greatly affect the amount of citations to scientific works. Researchers in the field of altmetrics share their articles and research results using social media almost as much as they share them over citation databases. Improving the awareness and educating researchers about social media and their altmetrics scores can improve the sharing of articles and research results in social media.

Keywords: Altmetrics, Social Media, Altmetrics field

Introduction

¹ *.Master's degree in medical librarianship and information science ,Department of Librarianship & information sciences, School of Allied Medical Sciences, Tehran University of Medical Sciences, Tehran, Iran. salahshoori.f3104@gmail.com.

² . Master's degree in in Knowledge and Information Science. Department Librarianship & information sciences School of education and psychology. University of Isfahan, Isfahan. Iran. abedini.zahra2720@gmail.com.

References to a published or nonpublished source are known as citations (Uthman et.al. 2013). Citation analysis is investigating the number of citations, patterns and maps of citations to articles and other texts. Citation analysis method was first used by Eugene Garfield, the founder of ISI organization in 1970 (Rubin, 2010). With the advancements in automatic citation indexing technologies, citation analysis became possible and use of measures including H-index and Impact Factor to investigate the scientific effects of articles by various scientists, research groups and universities gained popularity. However, these traditional measures also have some disadvantages including not showing the reason for the citation and inability to determine the effects of articles outside of academic circles (Preim et.al. 2010). Today, with the expansion of World Wide Web, social media have become one of the tools for publication and evaluation of research activities (Abdullah, Yeong, 2012).

A new area of study in citation analysis is investigating the effects of social media on knowledge sharing. The advent of social media such as Facebook, Twitter, weblogs, and online citation management tools (such as Mendeley), has created an interest in investigating the effects of a citation on scientific society based on social media. Bornmann (2016) states that the increased emphasis on investigating social effects and the opportunities offered by electronic tools have created a revolution in bibliometric evaluations. Social web index or Altmetrics is a non-traditional metrics which was introduced for the first time by Preim et.al. In 2010 and unlike traditional measures includes all uses and citations including number of views, tags, downloads, and sharing of scientific products in all types of social media (Preim et.al. 2010). Sources considered in altmetrics include microblogging services or short message services (such as Twitter), social media websites (such as Facebook), weblogs (WordPress, blogger), social bookmarking networks (Delicious), academic bookmarking platforms (Citelik, Mendeley), peer review services (F1000, F1000prime), academic networks (academia.edu) and mass-edited online encyclopedias (Wikipedia, 2019).

Altmetrics is one of several business organizations which gather information about articles in all social media and different online platforms and offer an instantaneous and immediate analysis of the effects of research activities using a total altmetrics score. This score indicates the weighted effect of the article determined using various online sources. Each online source is assigned a predetermined weight with a weight of 8 for News posts, 8 for blog posts, 1 for Twitter posts, 2 for Wikipedia posts, and 0.25 for Facebook posts (Rosenkrantz et.al, 2017).

Since citation analysis of a research article takes months or even years using traditional methods and since traditional citation measures only investigate the

effects of the articles in a specific journal or database and are unable to evaluate the wider effects of the articles and due to the expansion of internet of social media; altmetrics measure has attracted increased attention in recent years. Therefore, the current study aims to determine the presence of articles in Altmetrics field in social media, determining superior articles in this field based on Altmetrics measure and determining the relation between Altmetrics measure and citation performance in these articles.

Study aims

1. Determining the sharing rate of articles in the field of Altmetrics indexed in Scopus database in social media.
2. Determining the presence of articles in the field of Altmetrics indexed in Scopus database in social media between 2010 and 2017.
3. Determining journals in the field of Altmetrics indexed in Scopus database with the largest presence in social media.
4. Determining articles in the field of Altmetrics indexed in Scopus database with the largest presence in social media
5. Determining the relation between citation performances of the articles in the field of Altmetrics indexed in Scopus database and their presence in social media.

Literature review

The concept of altmetric has been presented since 2010. Since then, many studies have been conducted on research data in social media and the relationship between altmetric and citation indicators.

Erfanmanesh (2018) examined the relationship between altmetric activity and quality of the LIS journals indexed by Scopus in 2015 and bibliometric indicators were utilized to study journals' performance. The population of the study was comprised of 134 LIS journals in Scopus. Altmetric Explorer, Scopus, Scimago Journal and Country Ranking (SJR) and Journal Metrics were used for data gathering. Results of the study revealed that of the 6638 papers with unique DOIs published in LIS journals in 2015, 2524 articles were mentioned at least once in social media platforms (altmetric coverage of 38%). The highest altmetric presence

was seen in “Journal of Information Science” with altmetric coverage of 100%. Moreover, “D-Lib Magazine” was received the most altmetric attention with the mean altmetric score of 17.9. The results of running a series of Spearman’s rank correlation tests revealed positive and statistically significant association between two indicators of altmetric activity (altmetric coverage and mean altmetric score) and four indicators of quality (SJR, SNIP, CiteScore and mean citations received): Results of the current research showed that papers published in higher quality journals, are more likely to be shared in social media tools and get more altmetric attention. (Erfanmanes, 2018)

serati shirazi and Goltaji (2018) investigated the use of social media by health literacy researchers, and identified top articles based on altmetric score and the association between altmetrics and citation indicators. Results found that Mendeley and Twitter were the most used social media by health literacy scholars for sharing scientific outputs, ranked first and second by number of 492 and 487 articles respectively. The results revealed statistically significant relationship between most alternative metrics and the number of citations in Web of Science. From the reviewed articles, Iranian researchers wrote 9 articles on health literacy. Of these, 6 had a digital object identifiers. After searching on the altmetric site, it became clear that these six articles have been used in Mendeley's social media and Twitter compared to more than other social media and had 134 readers in Mendeley and 64 tweets in Twitter respectively (Serrati Shirazi, Marzieh Goltaji, 2018)

Wang et al (2017) performed a comprehensive search for neurosurgical publications using the Altmetric database. results showed that a total of 5794 articles were included in this study. The average Altmetric score in neurosurgical articles was 4.7 (standard deviation ± 22.4). Journals with a social media account had significantly higher Altmetric scores for their articles compared with those without an account ($P < 0.0001$). The number of tweets and online mentions in news outlets had the strongest correlation values with Altmetric scores. The top 100 articles in altmetrics belonged primarily to the Journal of Neurosurgery (33%) followed by Neurosurgery (29%). (Wang et al, 2018)

Rosenkrantz et al (2017) aimed to compare traditional citation and alternative impact metrics for articles in popular general radiology journals. results found among all articles, 96.4% had ≥ 1 traditional citation vs 41.8% for Altmetric ($P < 0.001$). Online platforms for which at least 5% of the articles were represented included Mendeley (42.8%), Twitter (34.2%), Facebook (10.7%), and news outlets (8.4%).

Citations and Altmetric were weakly correlated ($r = 0.20$), with only a 25.0% overlap in terms of articles within their top 10th percentiles. (Rosenkrantz et al, 2017).

Erfanmanesh (2017) using altmetric data examined 563 articles in the area of Information Science & Library Science which specified Iran as their affiliated country and indexed by the Thomson Reuters until the end of 2014. Out of 563 Iranian IS & LS articles, 72 papers (12.8%) were mentioned at least once in different social media. Twitter (80.55%) stands out as the most promising altmetric source for Iranian IS & LS papers, followed by Mendeley (77.77%) and CiteULike (22.22%). Studying the share of IS & LS papers with altmetric indicators across publication years show that papers published in 2014 have the highest proportion (30%). The results of running a Spearman correlation test revealed statistically significant but moderate relationships between Mendeley and CiteULike readership counts and number of citations in Web of Science. (Erfanmanes, 2017)

Esmailpour-Bandboni and et al (2016) aimed to compare the citation rate of academic articles affiliated by Guilan University of Medical Sciences, Iran, in two social scientific networks. results found that all of 845 academic papers were cited 3199 times in Scopus database until 2015. The citation rate in ResearchGate (87%) was more than the citation rate in Mendeley (52%). There was a positive significant correlation between citation rate of articles, observation rate and download rate of articles in ResaerchGate. In addition, there was a positive significant correlation between citation rates with reading frequency of articles in Mendeley ($P < 0.05$). (Esmailpour-Bandboni and et al, 2016)

Barbic et al (2016) described the traditional metrics and Altmetric scores of the 50 most frequently cited articles published in emergency medicine (EM) journals. results showed that The highest Altmetric score for EM articles was 25.0; the mean (SD) was 1.9 (5.0). The EM journal with the highest mean article Altmetric score was "Resuscitation". Spearman correlation demonstrated weakly positive correlation between citation counts and Altmetric scores for EM articles and other journals. (Barbic et al, 2016)

Hustein et al (2014) examined the use and coverage of social media environments amongst a sample of bibliometricians examining both their own use of online platforms and the use of their papers on social reference managers. Results showed that 82 % of articles published by sampled bibliometricians were included in Mendeley libraries, while only 28 % were included in CiteULike. Mendeley

bookmarking was moderately correlated (.45) with Scopus citation counts.(Hustein etal ,2014)

Study Method

This is an applied study with scientometrics approach using altmetrics method. The study population consisted of all articles in the field of altmetrics indexed in Scopus database. The search was carried out using Altimetric subject area and was limited to articles published in 2012-2017 period. A total of 337 articles were retrieved, among which 53 lacked proper Digital Object Identifier (DOI) and were thus eliminated from the study. Information on each article, including author name, publication year and journal name was recorded in a MS Excel file. The addon for Altmetrics score was installed on the web browser. Then, the altmetrics score of each article and the number of articles' mentions in social media including Twitter, Mendeley, CiteULike, LinkedIn, YouTube and other social media were determined and stored in the MS Excel file. The citation score of each article was determined by entering the article in Google Scholar database and added to the Excel file. SPSS16 software was used for data analysis. Descriptive statistics (average and standard deviation) were used to determine the average presence of articles in social media while the correlation between citation performance or articles and indexing (total altmetrics score) was investigated using Pearson correlation coefficient.

Findings

In any study, the most important and essential stage is answering the research questions while data analysis is the final aim of the study. In this section, the findings obtained from investigating the presence of articles in the altmetrics field indexed in Scopus database in social media are presented as tables and graphs.

Table 1. The average presence of articles in the field of altmetrics in social media

	N	Minimum	Maximum	Mean	Std. Deviation
altmetric score	269	0	473	20.77	54.896
Twitter	269	0	464	19.00	50.338
Mendely	266	0	562	45.34	74.914
Facebook page	268	0	13	.47	1.383
CiteULike	266	0	26	.77	2.544
blog	268	0	16	.62	1.825
google+user	267	0	24	.27	1.575
Redditor	270	0	2	.01	.149
Peer review site	267	0	1	.02	.148
news outlet	267	0	59	.32	3.657
wikipedia page	269	0	2	.06	.246
policy source	269	0	3	.08	.357
citation score	282	.0	462.0	19.046	45.1460
Valid N (listwise)	254				

As can be seen in table 1, Mendeley with an average score of 45.34 was the most popular social media website used by researchers in the field of altmetrics and Twitter was in the second place with average score of 19. CiteULike with average score of 0.77 and Facebook with average score of 0.47 were at third and fourth place, respectively. Among 337 retrieved articles, which 53 lacked proper Digital Object Identifier (DOI). Among the 284 remaining articles, 15 articles lacked an altmetrics score. The average altmetrics score in the subject area of altmetrics was 20.77 while the average citation score of the articles was 19.046 which shows that the presence of articles in the field of altmetrics is almost identical in social media websites and indexing databases (Google Scholar).

Table2. The number of articles in the field of altmetrics that have altmetric index in different years

Publication year	Average altmetric score	The number of articles that have altmetric index
2012	21	9
2013	47	32
2014	23	46
2015	18	79
2016	22	80
2017	15	90

The frequency of articles with altmetrics scores based on publication year is presented in the following table. As can be seen, in recent years, more researchers have made use of social media for sharing the result of their scientific studies. The largest presence of published articles in the altmetrics abject area in social media was observed in years 2017, 2016 and 2015.

Table3. Articles have the highest score in the field of altmetrics

Rate	Article	Authors	Journal	Altmetrics score	Average score of the journal articles	The number of journal articles
1	Does a research group increase impact on the scientific community or general public discussion? Alternative metric-based evaluation	De Gregori M., Scotti V., De Silvestri A., Curti M., Fanelli G., Allegri M., Schatman M.E.	Journal of Pain Research	473		
2	The open access advantage considering citation, article usage and social media attention	Wang X., Liu C., Mao W., Fang Z.	Scientometrics	382	31	47
3	Do Altmetrics Work? Twitter and Ten Other Social Web Services	Thelwall M., Haustein S., Larivière V., Sugimoto C.R.	PLoS ONE	379	158	3
4	Altmetrics: Value all research products	Piwowar H.	Nature	333	92	4
5	The rise of altmetrics	Warren H.R., Raison N., Dasgupta P.	JAMA - Journal of the American Medical Association	263	263	1
6	Does a graphical abstract bring more visibility 7to your paper?	Pferschy-Wenzig E.-M., Pferschy U., Wang D., Mocan A., Atanasov A.G.	Molecules	200	200	1
7	The distorted mirror of wikipedia: A quantitative analysis of wikipedia coverage of academics	Samoilenko A., Yasseri T.	EPJ Data Science	152	152	1
8	Alternative Perspectives on Impact: The Potential of ALMs and Altmetrics to Inform Funders about Research Impact	Dinsmore A., Allen L., Dolby K.	PLoS Biology	139	139	1
9	Do "altmetrics" correlate with citations? Extensive comparison of altmetric indicators with citations from a multidisciplinary perspective	Costas R., Zahedi Z., Wouters P.	Journal of the Association for Information Science and Technology	129	28	46
10	Do ResearchGate Scores create ghost academic reputations?	Orduna-Malea E., Martín-Martín A., Thelwall M., Delgado López-Cózar E.	Scientometrics	122	31	47

Table4. Top articles of the altmetrics field in the various social media

Article	policy source	Wiki media	news outlet	Peer review site	Redditor	google+user	blog	CiteU Like	Face book	mendely	Twitter	citation score	
1	Does a research group increase impact on the scientific community or general public discussion? Alternative metric-based evaluation	0	0	59	0	0	0	3	0	23	5	1	
2	The open access advantage considering citation, article usage and social media attention	0	0	1	0	0	5	9	5	13	143	464	50
3	Do Altmetrics Work? Twitter and Ten Other Social Web Services	3	1	8	0	0	5	16	25	5	562	294	462
4	Altmetrics: Value all research products	2	2	3	0	0	24	15	26	9	349	269	270
5	The rise of altmetrics	0	0	0	0	0	0	3	1	4	40	386	16
6	Does a graphical abstract bring more visibility 7to your paper?	0	1	0	1	0	3	1	5	2	19	261	3
7	The distorted mirror of wikipedia: A quantitative analysis of wikipedia coverage of academics	0	1	0	0	2	1	0	3	6	60	101	26
8	Alternative Perspectives on Impact: The Potential of ALMs and Altmetrics to Inform Funders about Research Impact	0	0	1	0	0	0	9	4	2	111	120	54
9	Do "altmetrics" correlate with citations? Extensive comparison of altmetric indicators with citations from a multidisciplinary perspective	1	0	0	0	0	1	10	5	2	357	96	238
10	Do ResearchGate Scores create ghost academic reputations?	0	0	0	0	1	1	5	0	4	45	137	3

As can be seen in above tables, the majority of articles in the field of altmetrics were published in Journal of Pain Research. Journal of Scientometrics and PLoS ONE are in second and third places.

The sum and average altmetrics score of articles in the field of altmetrics published in different journals are presented in the following table (table5).

Table5. Magazines publishing articles in the field of altmetrics that have altmetrics score

Row	Journal title	The number of articles that have altmetric scores	Total altmetric score of the articles	Average altmetric score of the articles
1	Journal of Pain Research	47	1440	31
2	Scientometrics	46	1156	28
3	PLoS ONE	27	15	1
4	Nature	12	18	2
5	JAMA - Journal of the American Medical Association	10	86	10
6	Molecules	9	63	7
7	EPJ Data Science	8	103	15
8	PLoS Biology	8	2	
9	Journal of the Association for Information Science and Technology	5	7	1
10	Scientometrics	5	-	-

The correlation between presence of articles in the field of altmetrics in social media and their citation performance was determined using correlation test. First, normalization of data was determined using Kolmogorov-Smirnov test and then the correlation was investigated using Pearson correlation coefficient. The results of correlation test are presented in the following table (table 6). Then, pair-wise correlations along with their P-values are presented for all investigated variables.

Table 6. The relationship between articles of the field of altmetrics in social media and their citation scores

	twitter	mendely	Facebook page	CiteULike	blog	google+user	Redditor	Peer review site	news outlet	wikipedia page	policy source	citation score
altmetric score	.926**	.705**	.581**	.521**	.683**	.467**	.170**	.086	.345**	.250**	.215**	.385**
	.000	.000	.000	.000	.000	.000	.005	.163	.000	.000	.000	.000
twitter		.625**	.541**	.415**	.493**	.474**	.166**	.123*	.276**	.198**	.126*	.307**
		.000	.000	.000	.000	.000	.007	.044	.000	.001	.040	.000
mendely		.625**	.334**	.499**	.492**	.318**	.110	.029	.151*	.201**	.355**	.652**
		.000	.000	.000	.000	.000	.074	.637	.014	.001	.000	.000
Facebook page		.541**	.334**	.354**	.506**	.444**	.249**	.062	.440**	.199**	.096	.201**
		.000	.000	.000	.000	.000	.000	.314	.000	.001	.119	.001
CiteULike		.415**	.499**	.354**	.515**	.368**	.130*	.038	.339**	.437**	.344**	.504**
		.000	.000	.000	.000	.000	.034	.544	.000	.000	.000	.000
blog		.493**	.492**	.506**	.515**	.400**	.127*	.010	.321**	.219**	.200**	.412**
		.000	.000	.000	.000	.000	.039	.874	.000	.000	.001	.000
google+user		.474**	.318**	.444**	.368**	.400**	.272**	.101	.254**	.345**	.203**	.261**
		.000	.000	.000	.000	.000	.000	.101	.000	.000	.001	.000
Redditor		.166**	.110	.249**	.130*	.127*	.272**		-.016	.293**	-.027	.086
									.024			

	.007	.074	.000	.034	.039	.000		.791	.694	.000	.660	.159
Peer review site	.123*	.029	.062	.038	.010	.101	-.016		-.035	.077	-.038	-.046
	.044	.637	.314	.544	.874	.101	.791	.575	.208	.533	.458	
news outlet	.276**	.151*	.440**	.339**	.321**	.254**	-.024	-.035		.263**	.101	.144*
	.000	.014	.000	.000	.000	.000	.694	.575		.000	.101	.019
wikipedia page	.198**	.201**	.199**	.437**	.219**	.345**	.293**	.077	.263**		.161**	.244**
	.001	.001	.001	.000	.000	.000	.000	.208	.000		.008	.000
policy source	.126*	.355**	.096	.344**	.200**	.203**	-.027	-.038	.101	.161**		.357**
	.040	.000	.119	.000	.001	.001	.660	.533	.101	.008		.000
citation score	.307**	.652**	.201**	.504**	.412**	.261**	.086	-.046	.144*	.244**	.357**	
	.000	.000	.001	.000	.000	.000	.159	.458	.019	.000	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

As can be seen in table 6 Pearson correlation coefficient was used in order to determine the relation between altmetrics variables (number of Twits, number of Mendeley readers, number of Facebook posts, number of weblog posts, number of CiteULike views, number of Google+ posts, number of Wikipedia citations and total altmetrics score) and citation variables (number of citations to the article in google scholar). The results of the Pearson test showed that there is a significant positive relation between altmetrics score and citation performance ($P = 0.000$). Furthermore, there is a strong and significant positive correlation between publication of articles in Twitter and their altmetrics score ($P = 0.000$ and $r = 0.926$). There is also a positive significant correlation between number of readers in Mendeley and citation score of the article.

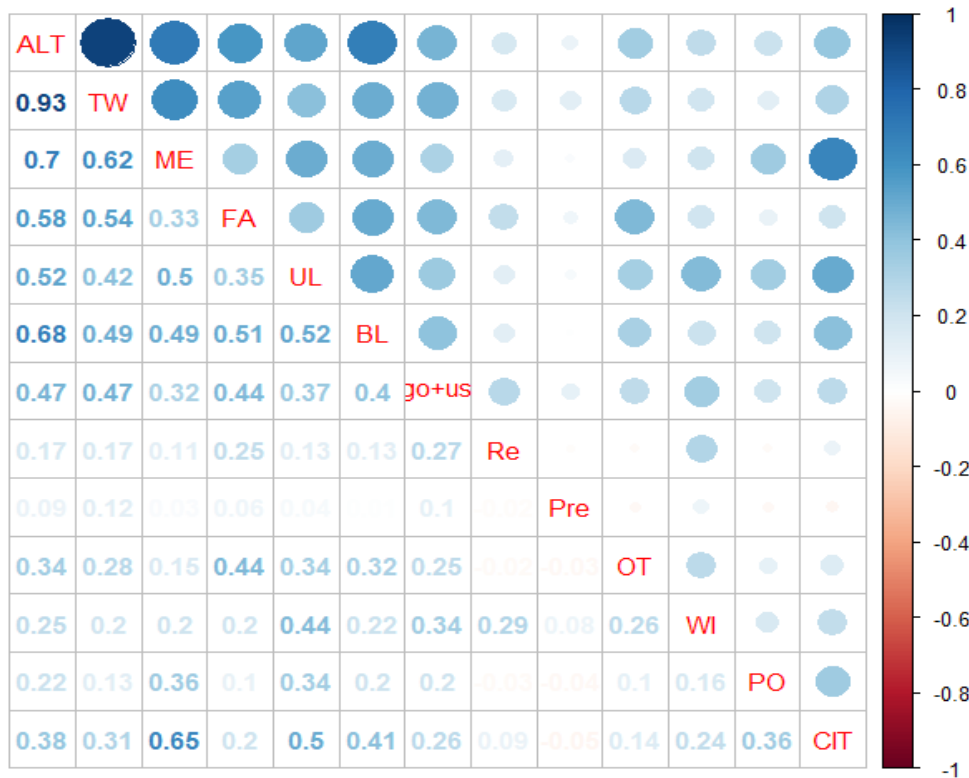


Figure 1: The relation between presence of articles in the field of altmetrics in social media and their citation performance

ALT: total altmetrics score; TW: number of Twits; ME: number of Mendeley readers; FA: number of Facebook posts; BL: number of weblog posts; UL: number of CiteULike views; Go+: number of Google+ posts; RE: number of Reddit posts; PRE: number of readers in “Peer Review” website; WI: number of Wikipedia citations; PO: number of posts in policy source, CIT: number of citations in Google Scholar

Discussion and conclusion

Due to the increased use of online social media, along with traditional citation measures, there is a need for new measures which investigate the effects of articles in social media. Therefore, the current article aimed to investigate the presence of articles in the field of altmetrics indexed in Scopus database in social media.

There have been numerous studies regarding the rate and reason for using social media, comparing the performance of researchers in different fields in social media and the publication rate of different universities in social media. The findings of the current study showed that Mendeley with average score of 45.34 was the most important social media among researchers in the field of altmetrics, with Twitter taking the second place with average of 19. Twitter is of the most used sources in altmetrics analyses. Holmberg and Thelwall investigated Twitter's acceptance in different social media and found out that only 2.2% of Twitter posts from researchers in various fields are about academic articles. They concluded that although many researchers consider Twitter as one of their research tools, they rarely use Twitter for sharing and publication of scientific articles (Holmberg and Thelwall, 2013). These findings are in contrast to the findings of the current study but in another study, Mohammadi and Thelwall analyzed articles in 12 fields read on Mendeley and found out that 58% of articles in social sciences were covered in Mendeley while only 28% of humanities articles were indexed in Mendeley. (Mohammadi, E., & Thelwall, 2013) which is similar to the findings of the current study.

In another study by Erfanmanesh investigating different types of social media, the results showed that Twitter (80.55), CiteULike (77.77), and Mendeley (22.22) had the largest shares among social media used to publish scientific articles in librarianship and information science in Iran. (Erfanmanesh, 2017). However, the results of the current study showed that Mendeley has the largest share of articles in social media which is different from previous results. Furthermore, the results of the current study showed that the largest number of articles shared in social media were published in 2013 while the study by Erfan Manesh reported that the articles published in 2014 had the highest share of publications in social media (30%) which is different from the current results.

The findings of the current study showed that according to the correlation test results, there is a significant positive correlation between altmetrics score and citation performance of articles ($P = 0.000$). According to the study by Esmailpour- Band Boni et.al., RG and Mendeley social media websites can have significantly positive effects on citations to articles and that there is a significant and positive relation between citations, views and downloads of articles in RG and their citation and view frequency in Mendeley website (Esmailpour- Band Boni et.al, 2017).

According to studies by Maflahi and Thelwall; Mohammadi and Thelwall; Li and Thelwall and Hustain et.al., there is a positive correlation between number of citations to articles in databases such as Scopus and number of views in social media sites such as Mendeley and Twitter. The findings of the study by GolTaji and Jokar showed that there is a positive correlation between altmetrics variables and number

of citations in Web of Science database. (GolTaji and Jokar, 2017). The findings in another study by Erfan Manesh also investigated the altmetrics factors and citations to articles and reported a positive and statistically significant correlation between the average views of articles in the field of librarianship and information science in Iran in “CiteULike” and “Mendeley” websites and their number of citations in Web of Science database. All these results are similar to the results of the current study.

The results of the current study showed that social media can have an important effect on citations to scientific articles and that altmetrics measures can be used to compliment traditional citation measures. The results also indicated that the researchers in the field of altmetrics share their articles in social media at a rate similar to the rate of sharing their works in citation databases. Increasing the awareness and educating researchers regarding social media and altmetrics measures can help increase the sharing rate of their scientific articles and research results. Researchers can also use social media for archiving and searching purposes. Due to widespread use and increased popularity of social media, policy makers in the area of science and research can facilitate the use of social media for sharing of scientific articles and research results among students, faculty members and various researchers.

References:

- Altmetric. Who’s talking about your research? Available at: <https://www.Altmetric.com>.
- Altmetric. How is the Altmetric Attention Score calculated? Available at <https://help.altmetric.com/support/solutions/articles/6000060969-how-is-the-altmetric-attention-score-calculated>
- Barbic, David & Tubman, Michelle & Lam, Henry & Barbic, Skye. (2016). an Analysis of Altmetrics in Emergency Medicine. *Academic emergency medicine: official journal of the Society for Academic Emergency Medicine*. 23. 10.1111/acem.12898.
- Bornmann, L. (2016). Scientific revolution in scientometrics: The broadening of impact from citation to societal. In C.R. Sugimoto (Ed.), *Theories of informetrics and scholarly communication* (pp. 347–359). Berlin: de Gruyter Mouton.
- Erfanmanesh Mohammadamin (2017). *The Presence of Iranian Information Science and Library Science Articles in Social Media: An Altmetric Study*. Iranian Research Institute for Science and Technology ISSN 2251-8223 eISSN 2251-8231 Indexed in SCOPUS, ISC, & LISTA Vol. 32 | No. 2 | pp: 349-373 Winter 2017
- Erfanmanesh, Amin. (2018). the Relationship between Altmetric Activity and Quality Indicators of Library and Information Science Journals in Scopus. *National studies on librarianship and information organization (NASTINFO)*. 29. 7-26.

Esmaeilpour-Bandboni M, Batooli Z, Ramezani A, Ranjbar-Pirmousa Z, Ramezani-Pakpourlangeroudi (2016). An Assessment of Altmetrics Indicators on Citation Rate of Articles Affiliated by Guilan University of Medical Sciences. *Health Inf Manage*; 13(5): 367-72.

Goltaji M, Jowkar A. (2017). Presence of Scientific Outputs of Medical Informatics in Social Media: An Altmetric Study. *Health Information Management* .14: 71-7.

Hammarfelt B, (2013). Using altmetrics for assessing research impact in the humanities. *Scientometrics* . DOI 10.1007/s11192-014-1261-3

Haustein S, Peters I, Bar-Ilan J, Priem J, Shema H, Terliesner J. (2014). Coverage and adoption of altmetrics sources in the bibliometric community. *Scientometrics*; 101(2): 1145-63.

Holmberg, K., & Thelwall, M. (2013). Disciplinary differences in Twitter scholarly communication. In J. Gorraiz, E. Schiebel, C. Gumpenberger, M. Hörlsberger & H. Moed (Eds.) *Proceedings of ISSI 2013 Vienna: 14th International society of scientometrics and informetrics conference* (pp. 567–582). Vienna: Austrian Institute of Technology GmbH.

Mohammadi, E., & Thelwall, M. (2013). Assessing the Mendeley readership of social science and humanities research. In J. Gorraiz, E. Schiebel, C. Gumpenberger, M. Hörlsberger & H. Moed (Eds.), *Proceedings of ISSI 2013 Vienna: 14th International society of scientometrics and informetrics conference* (pp. 200–214). Vienna: Austrian Institute of Technology GmbH

Muhammad Yousuf Ali, Joanna Richardson, (2017) "Pakistani LIS Scholars' Altmetrics in ResearchGate", *Program*, Vol. 51 Issue: 2, doi: 10.1108/PROG-07-2016-0052

Priem J, Taranborelli D, Groth P, Neylon C. *Altmetrics: a manifesto*. 2010; <http://altmetrics.org/manifesto>.

Rosenkrantz AB, Ayoola A, Singh K, Duszak R Jr.(2017). Alternative Metrics ("Altmetrics") for Assessing Article Impact in Popular General Radiology Journals. *Acad Radiol*. Jul; 24(7):891-897. doi: 10.1016/j.acra.2016.11.019. Feb 27. PubMed PMID: 28256440.

Rubin R. *Foundations of library and information science*. 3rd Ed. New York: Neal-Schuman Publishers, 2010.

Serati Shirazi, Marzieh Goltaji(2018) .an Altmetric Study on Scientific Articles of “Health Literacy” in Social Media *Mansoureh Journal of the Iranian Institute for Health Sciences Research(Payesh) Payesh* . 17(3): 249-256

Uthman OA, Okwundu CI, Wiysonge CS, Young T,Clarke A. (2013) .Citation classics in systematic reviews and meta-analyses: who wrote the top 100 most cited articles? *PLoS One*; 8:e78517.

Yeong, CH; Abdullah, BJJ. (2012). Altmetrics: the right step forward. *Biomed Imaging Intervention Journal*. 8(3): e15

Wang J, Alotaibi NM, Ibrahim GM, Kulkarni AV, Lozano AM, (2017), The Spectrum of Altmetrics in Neurosurgery: The Top 100 “Trending” Articles in Neurosurgical Journals, World Neurosurgery doi: 10.1016/j.wneu.2017.04.157.

Wikipedia (2019) .<https://en.wikipedia.org/wiki/Altmetrics>. This page was last edited on 27 June 2019, at 23:37 (UTC)