ISSN (Print): 0972-2467
ISSN (Online): 0976-2477
SRELS Journal of Information Management, Vol 56(1), February 2019, p. 18-25 DOI: 10.17821/srels/ 2019/v56i1/137997

Assessment of YouTube Videos on H Index

Mohit Garg*

Indira Gandhi National Tribal University, Lal Pur, Amarkantak - 484886, Madhya Pradesh, India;
mohitji@igntu.ac.in

Abstract

H index is a popular measure. YouTube provides free of cost video content on different topics. Anyone can upload the videos on YouTube after setting up an account without any verification by experts. Large numbers of videos have been uploaded on YouTube which may or may not be relevant. This study is aimed at evaluating the usefulness of YouTube videos on h-index. YouTube (www.youtube.com) was searched with the search term "h index" on 18th August 2018. The search results were filtered by video type. The first 20 videos were selected for assessment, but after screening the four non-English videos were excluded. These videos have been watched and evaluated based on six aspects. The study found that no video covered all six aspects. 25% of the screened videos were found *very useful*, 38% of the videos were found *slightly useful*, 31% of the videos were found *moderately useful* and only 1 video was found *not useful*. It was also found that majority of the videos covered definition and example and very few videos discussed advantages of h-index.

Keywords: H-index, Information Quality, Videos, YouTube

1. Introduction

Hirsch index (h-index), proposed by Jorge E. Hirsch, and is a widely used quantitative index to measure the impact of publications. H index is defined as the number of papers with citation number ≥h (Hirsch, 2005). In simpler words, h index of a scholar is h if he had published h papers that have got at least h citations each. It is also known as Hirsch index or Hirsch number. Soon after publication, it became a popular metric for assessment of research publications. The popularity can be seen by the number of searches with 'h-index as the search term in Google (Figure 1).

H-index depends on both the number of a scientist's publications, and their impact on his or her peers (Ball, 2005). It has become an important method to evaluate the research conducted by scholars, departments or institutions. Many organizations prefer h index to measure the performance of an institution. American Physical Society, National Academy of Sciences, DST, NAAC, etc use h index as important criterion for evaluation of research impact.

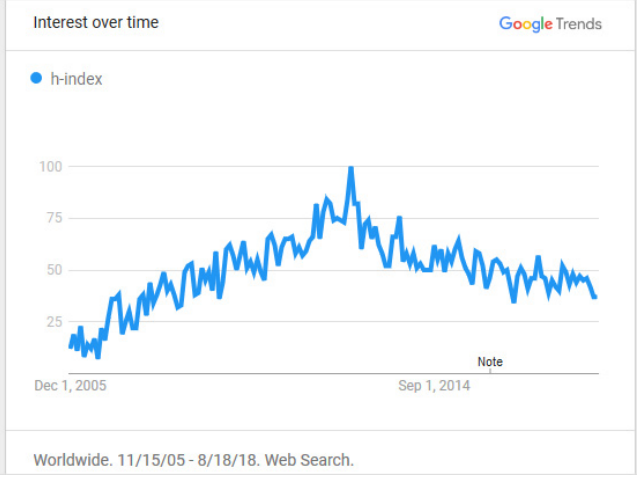

Figure 1. Google trends of h index.

In India DST has a scheme for Universities called PURSE which stands for Promotion of University Research and Scientific Excellence? The scheme provides grants to universities based on H index (Promotion of University Research and Scientific Excellence (PURSE), 2018).

H index of the university is one of the key indicators in assessment of NAAC (2018).

*Author for correspondence

YouTube was launched in 2005 by Chad Hurley, Steve Chen, and Jawed Karim. Search Engine giant Google bought YouTube in 2006. As per the Alexa traffic rank, (a web traffic analytic company which estimate the popularity of website) the global rank of YouTube is 2nd among 500 websites (2018). One-third of people on internet watch videos on YouTube. Jaffar (2012) assessed usage of YouTube and found that 98%of student use YouTube for their learning.

Many researchers have been conducted to evaluate the content of YouTube videos to find out whether YouTube can be treated as a source of information in the medical and health sciences domain. However, there are not many studies about the utility and value of YouTube as a source of information in areas other than healthcare and medicine. This study seeks to examine YouTube as a source of information on H-index.

2. Review of Literature

Abdelmseih (2016) evaluated, on a 5-point scale based on DISCERN criteria (popular tool to check the quality of health information), the comprehensiveness and reliability of first twenty videos on Age-related Macular Degeneration. The study investigated the reliability. The study found that YouTube videos are poor sources for accurate information. Desai et al.(2013) assessed 607 videos about cardiovascular disease based on presence/absence of seven non-mutually exclusive domains. The study revealed that videos with lower educational content engage more users than videos of greater quality. Freeman and Chapman (2007) analyzed the content of first 50 videos on Tobacco. The study found that smoking imagery is prolific and accessible on YouTube. Abukaraky, Hamdan, Ameera, Nasief and Hassona (2018) examined the quality of 117 videos on dental implants. The study found that videos contain limited information both in terms of quality and quantity. Livas, Delli and Pandis (2018) studied popularity, content of most viewed 100 videos on 'invisalign experience. Garg, Venkatraman, Pandey and Kumar (2015) analyzed YouTube content on dialysis to identify whether YouTube can be used as a source of information. The study found that YouTube has vast information but videos with accurate information are not effective for user engagement. Mazanderani, Neill and Powell (2013) conducted content analysis of 100 most viewed videos of patients who have shared their treatment experiences on chronic cerebrospinal venous insufficiency. The study found that majority of patients shared their frustration during or after the treatment.

Gupta et. al. (2016) scanned the content of YouTube videos on peripheral neuropathy. The study showed that not all treatment options are discussed in the videos and caution should be exercised before following the video content. Biggs, Bird, Harries and Salib (2013) studied usefulness of information on rhinosinusitis. The study found that 55% of videos contain very few facts and the information in videos was not accurate and up to date.

Pehlivan, Vatansever, Oruç and Yildiz (2018) evaluated the YouTube videos on kidney transplantation. The study determined that YouTube has vast information on kidney transplantation but some videos contain unprofessional and misleading information. Hassona, Taimeh, Marahleh and Scully (2016) examined the content of YouTube videos on oral mouth cancer. The study showed that the most useful video is ranked late in the viewing list.

3. Methodology

YouTube (www.youtube.com) was searched with the search term "h index" on 18th August 2018. Before searching all cookies were deleted and no account was logged in. This was done to avoid biased results based on the past search history. YouTube and other search engines retrieve results based on analysis of historical data of an account or IP address. YouTube was searched with default setting with relevance sorting. The search results were filtered using the filter type 'video' as the result consists of videos and playlist, i.e. which is a collection of many videos. The first twenty videos were selected for the analysis as shown in Table 1 as YouTube shows twenty results on first page. There are studies indicating that >90% Internet users don't go beyond the first page. Most studies on YouTube's content evaluation have selected 20-200 videos for the analysis. On examination it was found that four videos were not in the English language. This happened because of video metadata title had term 'H Index', but the language of the video was not English. The four videos were excluded from assessment and the remaining 16 videos were considered for assessment. Usefulness of the video content covered in the video was assessed on the basis of the presence or absence of six non-mutually exclusive aspects of 'H Index'. These six aspects are: 1. Definition,

2. Purpose, 3. Calculation, 4. Example, 5. Advantages, 6. Criticism. Each video was watched for the above aspects and assessed. Depending on whether a required feature was present or not in a particular video, it was assigned a score of '1' or '0' for that aspect (Table 2). Thus a video in which all the features were present got a score of 6. On the basis of total score, the content of the video is classified as Not Useful, Slightly Useful, Moderately Useful, and Very Useful as follows:

1. Not Useful: If the video has a score of 0,
2. Slightly Useful: If the video has a score in the range from 1 to 2,
3. Moderately Useful: If the video has a score in the range from 3 to 4, and
4. Very Useful: If the video has a score in the range of 5 to 6.

Other information (Duration, Likes, Dislikes, Views, Comments, Channel Name, Channel Category, Uploaded Date) about the video were recorded on 18th August 2018. Viewing rate and Viewer's Interaction Index were calculated using the below formulas. Pearson's correlation was used to find the correlation between the viewing rate and video usefulness score, viewer's interaction index and video duration.

$$\text{Viewing Rate} = \left(\frac{Number\ of\ Views}{Number\ of\ days\ since\ it\ uploaded} \times 100\% \right)$$

$$\text{Viewer's Interaction Index} = \left(\frac{Number\ of\ Likes - Number\ of\ Dislikes}{Total\ number\ of\ View} \times 100\% \right)$$

Table 1. First 20 results retrieved

Video No.	Title	Channel	Video Id
VD-1	H-Index Explained	Curtin Library	Qk3pN0qHa0k
VD-2	What is the h-index?	John Bond	bOT6pKWkuiM
VD-3	Find your h index	Ian Rowlands	wmnqCge-h_M
VD-4	Impact Factor, H-index and i10 index ... Simplified !!!	Scholar Idea	FXRR5dw5YZs
VD-5	H-Index || Research Rocks ||	Research Rocks	5R-k-0Hptmc
VD-6	Evaluationg h-Index : metric to evaluate authors rank	Ashish Seth	rf7kdghMU20
VD-7	H index	Pioneer of Success	NfUvge1QZ0M
VD-8	H-index مؤشر قياس جودة البحوث العلم	الدكتور طلال ناظم الزهيري	JPFy_Xiv_Ow
VD-9	H-index	Audiopedia	ljIeiaj6-ZA
VD-10	What is Citation Indexing	andrusslibrarian	cEMRLSYiQZ8
VD-11	How to find an H-index	Christopher Stokes	TvvJhoqi68k
VD-12	What Is The H Index?	Bun Bun 1	gO3J-0nn_ZU
VD-13	Impact factor & h index	Official Fakultas Kedokteran UGM	zgHzEAZZPIk
VD-14	H index	Knowledge channel	EqiLduwhLvo
VD-15	Measuring Impact: Impact Factor, h-index, and altmetrics	TWU Libraries	kZzbmFT6uLA
VD-16	H index	Pao Yue-kong Library	NttCbOz017Y
VD-17	How to find the H-index in Web of Science	umnLibraries	XXQOrWIxb2g

VD-18	Developing the H-Index: how and why?	HighWire Press, Inc.	YCY8Wy3rr3A
VD-19	h index ماهو و كيف أرفع قيمته و جودة بحوثي العلمية	Nadia Oukrich	cu4snS6T5kw
VD-20	Limitations of the h-index for early career researchers	NDLRMyRI	8BSXWKBuHXU

Table 2. Usefulness score of videos

Video No.	Title	Channel	Definition	Purpose	Calculation	Example	Advantage	Criticism	Total Score	Assessment
										Not Useful Slightly Useful Moderately Useful Very Useful
VD-1	H-Index Explained	Curtin Library	1	1	0	1	1	1	5	Very Useful
VD-2	What is the h-index?	John Bond	1	1	0	1	1	1	5	Very Useful
VD-3	Find your h index	Ian Rowlands	1	1	1	1	0	0	4	Moderately Useful
VD-4	Impact Factor, H-index and i10 index ... Simplified !!!	Scholar Idea	0	1	1	1	0	0	3	Moderately Useful
VD-6	Evaluationg h-Index : metric to evaluate authors rank	Ashish Seth	1	1	0	1	1	1	5	Very Useful
VD-7	H index	Pioneer of Success	1	1	1	1	0	0	4	Moderately Useful
VD-9	H-index	Audiopedia	1	1	0	1	1	1	5	Very Useful
VD-10	What is Citation Indexing	And russlibrarian	0	0	0	0	0	0	0	Not Useful
VD-11	How to find an H-index	Christopher Stokes	0	0	0	1	0	0	1	Slightly Useful
VD-12	What Is The H Index?	Bun Bun 1	1	0	0	0	0	0	1	Slightly Useful
VD-14	H index	Knowledge channel	0	1	1	1	0	0	3	Moderately Useful
VD-15	Measuring Impact: Impact Factor, h-index, and altmetrics	TWU Libraries	1	1	1	1	0	0	4	Moderately Useful
VD-16	H index	Pao Yue-kong Library	1	0	1	0	0	0	2	Slightly Useful
VD-17	How to find the H-index in Web of Science	UmnLibraries	1	0	0	1	0	0	2	Slightly Useful
VD-18	Developing the H-Index: how and why?	HighWire Press, Inc.	1	0	0	1	0	0	2	Slightly Useful
VD-20	Limitations of the h-index for early career researchers	NDLRMyRI	1	0	0	0	0	1	2	Slightly Useful

Sum		12	9	6	12	4	5	**48**	
Average								**3**	
Max								**5**	
Min								**0**	

Table 3. User engagement data

Video No.	Title	Channel	Category	No. Of days since upload	Views	Likes	Dislikes	Duration	Viewer's Interaction	Viewing rate
VD-1	H-Index Explained	Curtin Library	Education	2020	10069	25	3	06:14	0.22	498.47
VD-2	What is the h-index?	John Bond	Education	69	149	8	0	03:40	5.37	215.94
VD-3	Find your h index	Ian Row-lands	Education	1861	11440	45	5	02:13	0.35	614.72
VD-4	Impact Factor, H-index and i10 index ... Simplified !!!	Scholar Idea	People & Blogs	134	211	3	0	11:02	1.42	157.46
VD-6	Evaluationg h-Index : metric to evaluate authors rank	Ashish Seth	People & Blogs	919	830	5	0	09:18	0.60	90.32
VD-7	H index	Pioneer of Success	Education	654	1692	13	0	12:53	0.77	258.72
VD-9	H-index	Audio-pedia	Education	1468	1490	2	3	20:14	-0.07	101.50
VD-10	What is Citation Indexing	And russlibrarian	Education	1047	1465	6	0	02:07	0.41	139.92
VD-11	How to find an H-index	Christo-pher Stokes	Education	2179	5000	3	1	03:47	0.04	229.46
VD-12	What Is The H Index?	Bun Bun 1	People & Blogs	315	164	0	0	00:44	0.00	52.06
VD-14	H index	Know-ledge channel	Science & Technology	64	21	5	0	04:45	23.81	32.81
VD-15	Measuring Impact: Impact Factor, h-index, and altmetrics	TWU Libraries	Education	815	922	5	0	13:07	0.54	113.13

VD-16	H index	Pao Yue-kong Library	Education	1252	396	0	0	00:47	0.00	31.63
VD-17	How to find the H-index in Web of Science	Umn-Libraries	Education	1810	257	0	0	02:07	0.00	14.20
VD-18	Developing the H-Index: how and why?	High-Wire Press, Inc.	Science & Technology	367	91	0	0	03:29	0.00	24.80
VD-20	Limitations of the h-index for early career researchers	NDLRMyRI	Education	2708	3636	5	1	01:20	0.11	134.27
Total				17682	37833	125	13		33.57	2709.41
Average				1105.12	2364.56	7.81	0.81		2.10	169.34

4. Results

Of the first 20 videos on YouTube, 16 videos on 'H Index' in English language were assessed. The total number of views of 16 videos was 37833 with average of 2365 views (Table 3). The 38% of the screened videos (n=6) were found slightly useful, 31% of the videos (n=5) were moderately useful, 25% of the videos (n=4) were very useful and 6% of videos (n=1) were found not useful (Figure 2) with average usefulness score of 3.

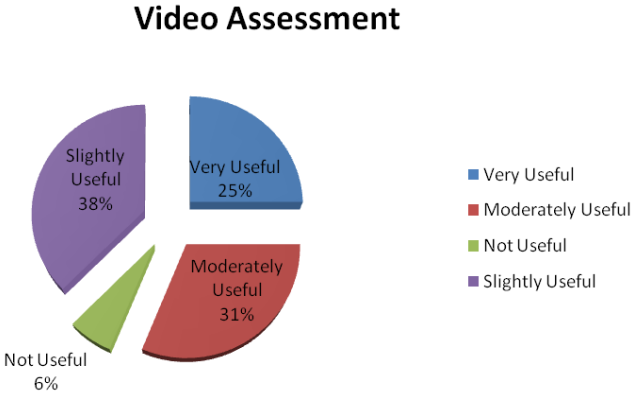

Figure 2. Assessment of videos were classified as not useful, slightly useful, moderately useful, and very useful.

Majority of videos (75%, n=12) contained information on definition and examples, 56% of videos (n=9) discussed the purpose of h index, 38% of videos (n=6) explained how to calculate h index, 31% of videos (n=5) critically described the criticism, limitations of the index; very few videos (25%, n=4) discussed advantages of h index (Figure 3).

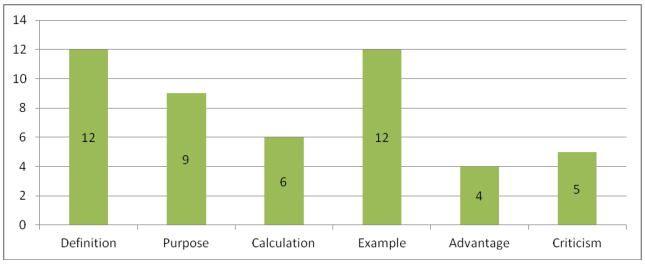

Figure 3. YouTube aspects related to H Index.

In the present study out of 16 videos, majority of videos (69%, n=11) belong to Education Category which are mainly video lectures by educational institutions, interviews, webinars, etc, 19% (n=3) of videos belong to People & Blogs Category and 12%(n=2) of videos belong to Science & Technology Category.

The video "Find your h index" uploaded under Education Category by Ian Rowlands was the most viewed and liked video with 11,440 views and 45 likes (Video Id : wmnqCge-h_M). The videos which were uploaded long back were viewed more times than the videos which were uploaded recently. The most useful video was "H-Index Explained" uploaded by Curtin Library under Education Category with highest viewing

rate in highly useful videos (Video Id: Qk3pN0qHa0k). Interestingly, the rank of the most useful video among retrieved results was 1.

Pearson Correlation was calculated between number of days since upload and number of views, usefulness score and Viewing rate, Viewer's Interaction and Duration. It was found that positive linear correlation exists between number of days since upload and number of Views (r=0.63), usefulness score and Viewing rate(r=0.38). There was no significant correlation found between viewer's interaction and duration (r= -0.06). The total duration of the all 16 videos was 97 minutes and 47 seconds with average of 06 minute and 06 seconds. The shortest length video "What is the H Index?" was 44 seconds long (Video Id: gO3J-0nn_ZU). It was found that the video was slightly useful. The longest duration video, "H-index" was of 20 minutes and 14 seconds long. The video contained information on 5 aspects except calculation. The video was found very useful. The oldest video was uploaded on 21st March 2011, 2708 days before the assessment day. The video was found slightly useful with the score of 2. The video was viewed by a very less number despite the positive correlation between number of days since upload and number of views.

5. Conclusion

This study is an attempt to investigate the usefulness of YouTube videos on h-index. YouTube contains a large amount of information on H index. Of the 16 videos, No video discussed all the six aspects. Majority of the videos discussed definition with example, but very few videos discussed calculation, advantages and disadvantages of H-index.

6. References

Abdelmseih, M. (2016). Evaluation and reliability of YouTube videos for Age-Related Macular Degeneration (AMD) - A warning sign! *Journal of Clinical and Experimental Ophthalmology, 07*(05). https://doi.org/10.4172/2155-9570.1000595.

Abukaraky, A., Hamdan, A., Ameera, M., Nasief, M. and Hassona, Y. (2018). Quality of YouTube TM videos on dental implants. *Medicina Oral Patología Oral y Cirugia Bucal, 23*(4). https://doi.org/10.4317/medoral.22447.

Ball, P. (2005). Index aims for fair ranking of scientists. Nature. https://doi.org/10.1038/436900a.

Biggs, T.C., Bird, J.H., Harries, P.G. and Salib, R.J. (2013). YouTube as a source of information on rhinosinusitis: The good, the bad and the ugly (1984). *Journal Laryngol Otol, 127*(8):749-54. https://doi.org/10.1017/S0022215113001473.

Desai, T., Shariff, A., Dhingra, V., Minhas, D., Eure, M. and Kats, M. (2013). Is content really king? An objective analysis of the public's response to medical videos on YouTube. *PLoS ONE, 8*(12):8–13. https://doi.org/10.1371/journal.pone.0082469.

Freeman, B. and Chapman, S. (2007). Is "YouTube" telling or selling you something? Tobacco content on the YouTube video-sharing website. *Tobacco Control, 16*(3):207–10. https://doi.org/10.1136/tc.2007.020024.

Garg, N., Venkatraman, A., Pandey, A. and Kumar, N. (2015). YouTube as a source of information on dialysis : A content analysis. *Nephrology (Carlton), 20*(5):315–20. https://doi.org/10.1111/nep.12397.

Gupta, H.V., Lee, R.W., Raina, S.K., Behrle, B.L., Hinduja, A. and Mittal, M.K. (2016). Analysis of YouTube as a source of information for peripheral neuropathy. *Muscle Nerve,* 53:27-31. https://doi.org/10.1002/mus.24916.

Hassona, Y., Taimeh, D., Marahleh, A. and Scully, C. (2016). YouTube as a source of information on mouth (oral) cancer. *Oral Diseases, 22*(3):202–08. https://doi.org/10.1111/odi.12434.

Hirsch, J.E. (2005). An index to quantify an individual's scientific research output. *PNAS, 102*(46):16569–72. https://doi.org/10.1073/pnas.0507655102.

Jaffar, A.A. (2012). YouTube: An emerging tool in anatomy education. *Anatomical Sciences Education, 5*(3). https://doi.org/10.1002/ase.1268.

Livas, C., Delli, K. and Pandis, N. (2018). "My Invisalign experience": Content, metrics and comment sentiment analysis of the most popular patient testimonials on YouTube. *Progress in Orthodontics, 19*(1):1–8. http://doi.org/10.1186/s40510-017-0201-1.

Mazanderani, F., Neill, B.O. and Powell, J. (2013). "People power" or "pester power"? YouTube as a forum for the generation of evidence and patient advocacy. *Patient Education and Counseling, 93*(3):420–25. https://doi.org/10.1016/j.pec.2013.06.006.

NAAC, Revised Accreditation Framework. Accessed on 27th August 2018. Available at http://www.naac.gov.in/docs/latest%20announcement_june18/Guidelines_non_applicable_metric.pdf.

Pehlivan, S., Vatansever, N., Oruc, A. and Yildiz, A. (2018). Sufficiency of YouTube videos as a source of information

in kidney transplantation. *Turkish Nephrology Dialysis and Transplantation Journal, 27*(1):39-43. https://doi.org/10.5262/tndt.2017.1003.23.

Promotion of University Research and Scientific Excellence (PURSE). Department of Science and Technology. Accessed on 27th August 2018. Available at http://dst.gov.in/promotion-university-research-and-scientific-excellencepurse.

The top 500 sites on the web. (2018). Accessed on 02nd September 2018. https://www.alexa.com/topsites. (The sites in the top sites lists are ordered by their 1 month Alexa traffic rank. The 1 month rank is calculated using a combination of average daily visitors and page views over the past month. The site with the highest combination of visitors and page views is ranked #1).