Trending Videos on YouTube

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Abstract. The following research paper explores the elements of trending YouTube videos. Marketers have a significant interest in YouTube trending videos as they can effectively structure products and service advertisements. As of 2022, data indicates that around 122 million daily users who watch roughly one billion hours of content visit YouTube. In the United States, an estimated 62 percent of YouTube users visit social media sites daily. Consequently, research on the features of trending YouTube videos can be highly informative for marketers looking to increase the effectiveness of their YouTube advertisement to facilitate efficient use of the marketing budget. An analysis of YouTube videos created between 2007 and 2016 can provide essential insight for marketers as they decide on advertisements.

Keywords: Trending videos; Marketing communications; Quantitative Research.

1. Introduction

YouTube is an American online video sharing and social media platform headquartered in San Bruno, California. It was launched on February 14, 2005, by Steve Chen, Chad Hurley, and Jawed Karim. It is owned by Google, and is the second most visited website, after Google Search. YouTube is one of the most popular social media platforms all over the world, with the latest data indicating that the website has around 122 million daily active users making it the second largest popular social media platform behind Facebook. Data shows that the number of videos uploaded every minute has been growing by 40 percent between 2014 and 2020. Monthly, YouTube records 2.1 billion active users worldwide, with the number projected to continue growing with time. The high number of visitors can be attributed to the ease with which users can access the website, with data showing that 40.9 percent of YouTube watch time occurs on Mobile devices. Notably, the largest percentage of users, 56 percent, are male, with the age distribution being across the board.

Consequently, YouTube has emerged as an indispensable tool for marketers keen to achieve the efficient utilization of marketing budget on their hands. The platform is largely used for awareness generation, customer engagement, and sales conversion. Google reckons that 70 percent of YouTube viewers who saw marketing advertisements on their platform end up buying a brand after seeing it on YouTube, indicating the efficiency of the platform in product and service conversion. In 2020, Apple spent US$237.15 million running advertisements on the platform, which is a testament to the effectiveness of the platform as a marketing platform (Tafesse, 2020). As long as marketers ensure that they create a captivating YouTube ad and place it in front of the right audience, they can be assured that they will recoup their advertising spend. One way through which marketers can improve upon their ability to develop captivating YouTube videos is by analyzing trending YouTube videos so that they can develop captivating advertisements. In this paper, data on the most popular YouTube Videos released in a decade from 2007 to 2016 is analyzed to usable and distillate information on the elements that account for the popularity of YouTube videos. The reason for choosing 10 years of data is that YouTube became popular software in the same decade, while streaming media also became increasingly popular in the same decade. Using data from Kaggle Application within 10 years is more informative. The data contains 115 popular videos published on YouTube website between 2007 and 2016, where the data items include video release date, video type, video duration and other information. The video types include Video Category Label, Travel & Events, Sports, etc. The video duration is stored in seconds, which we need to convert to minutes in the analysis process. The hotness

of different videos is expressed as viewCount, likeCount, dislikeCount, commentCount, which reflect the number of views, likes and dislikes respectively, while commentCount directly reflects the hotness of audience participation in discussions. Video popularity is determined by viewCount, likeCount, dislikeCount, commentCount.

2. Research Question

The purpose of the current research paper is to investigate the features of popular YouTube videos that were released on the website between 2007 and 2016. The features of interest include the duration of the video, clarity of the video, category of the video, viewers' reaction to the video, and the number of views. Thus, the guiding researcher question will be:

What are the defining characteristics of the trending videos on the YouTube platform between 2007 and 2016?

3. Methods

The researcher collected data on the popular videos released between 2007 and 2016. Variables of interest in the collected data include the year of release, the type of video, video duration, the category of the video, and the viewer's reaction to the video, among others. Once the data was collected, it was prepared for analysis and analyzed using Tableau. The resulting data types with their corresponding samples are detailed in Table 1 below.

Table 1. Data Types and Styles

Listings	Data style	Data sample
channelId	Char	UCU1_l0ZJyTK_7HZZ3Ruw8Dg
channelTitle	Char	MAPS
videoId	Char	pTnk3ziVVRM
publishedAt	Date	2014-01-10T01:24:57.000Z
videoTitle	Char	Psychedelic Horizons
videoDescription	Char	Watch the full workshop
videoCategoryId	Int	29
videoCategoryLabel	Char	Nonprofits & Activism
duration	Char	PT1H19M40S
durationSec	Int	4780
definition	Char	hd
caption	Boolean	FALSE
viewCount	Int	1512
likeCount	Int	8
dislikeCount	Int	0
commentCount	Int	1

4. Results

4.1 Video Distribution in the Calendar Year

The data showed that the distribution of popular videos increased significantly over time. Observably, the dataset contained 115 videos, with the last three years accounting for 88 of the most popular videos. As shown in figure 1, the growth of popular YouTube videos was gradual and became visible from the year 2011 to the year 2016. The only decrease in the number of videos was reported in 2011 when two popular videos were reported compared to five popular videos reported in 2010.

Notably, the number of popular videos tripled from 2014 to 2015, given that 12 popular videos were reported in 2014, a number that more than tripled to 38 in 2015.

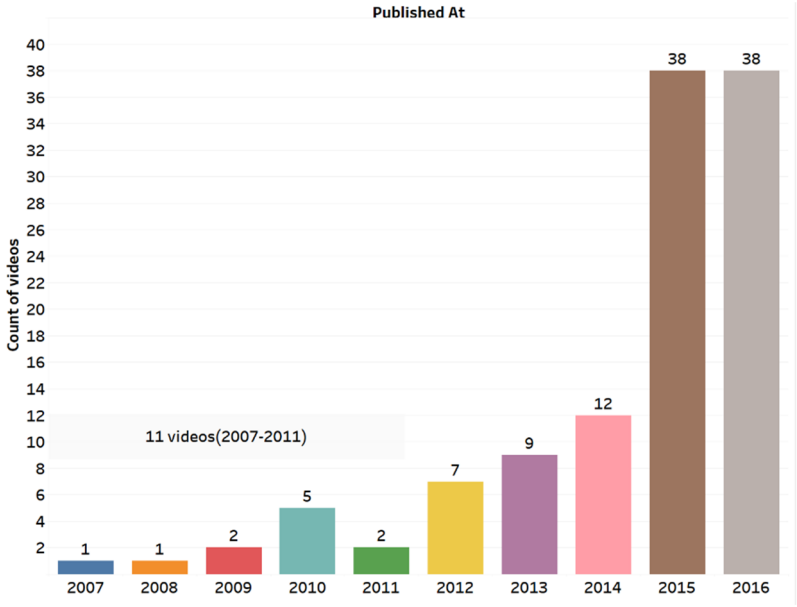


Fig. 1 Distribution of Videos between 2007 and 2016

4.2 Video Length

There was a significant difference in the length of the popular video from the analysis of the dataset. 81.74 percent of the popular videos analyzed had a length between 0 to 9 minutes. Greater than 9 minutes to 18 minutes of video length accounted for 13.04 percent of the analyzed videos. Videos of more than 18 minutes only accounted for only 5.22 percent of popular YouTube videos between 2007 and 2011.

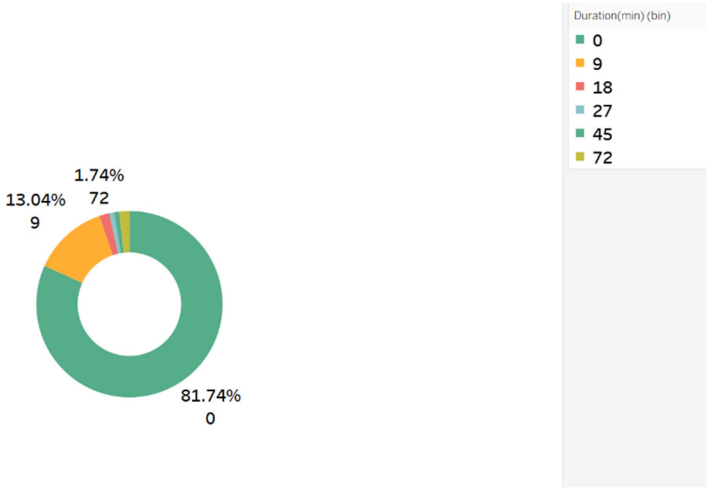


Fig. 2 Video Length Distribution

4.3 Distribution of Video Definition

From 2007 to 2011, all the popular videos had a standard definition (SD). SD describes a video with a pixel height of 480p. In 2012, the percentage of popular videos in SD dropped to 57.14 percent, with 42.86 percent of the videos being in High Definition (HD). HD videos have a pixel height of either 720p or 1080p and have a considerably higher quality than SD videos. The percentage of the number of HD quality videos in the most popular video has been on the increase over the years, with 55.56 of the popular videos in 2013 being HD, 75 percent of videos in 2014 being HD, 71.05 percent of the videos in 2015 being HD, and 89.47 percent of the video in 2016 being reported as HD. On the other hand, the number of popular videos in SD definition has been slowly decreasing over time.

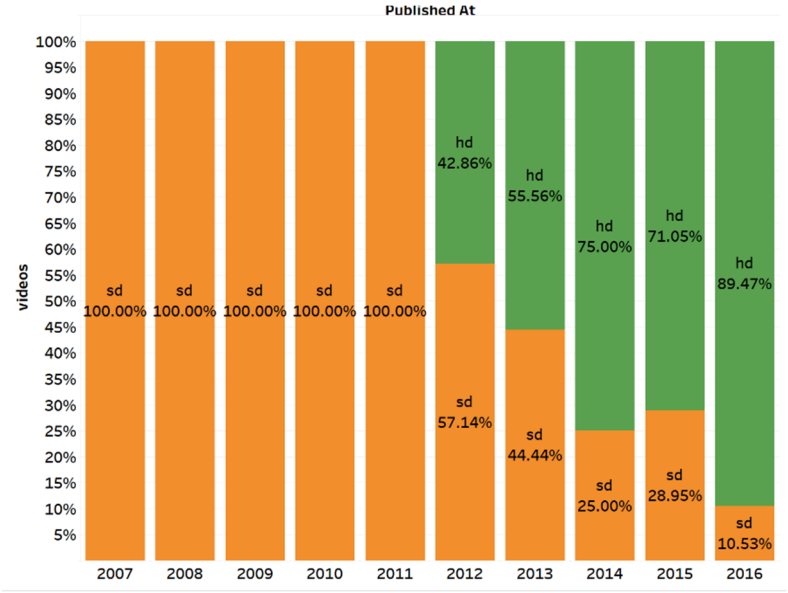


Fig. 3 Video Distribution by Definition

4.4 Categorization of Popular Videos

The categorization of the popular video was different across video types from 2006 to 2017. Analysis of the data revealed that for most of the popular videos, 37.39 percent were People and Blogs. The next category that had the highest number of popular videos was Science and Technology, at 26.09 percent of the popular videos generated over the period of analysis. Overall, the two categories accounted for nearly two-thirds of the most popular videos. Entertainment videos accounted for 8.7 percent of the popular videos, with non-profits and activism contributing 8.7 percent of the popular videos on the YouTube platform. 6.96 percent of the popular YouTube videos released between 2006 and 2017 were education based, and 5.22 percent of the videos were in the category of news and politics. Music videos only accounted for 1.74 percent of the popular videos. Other categories that were represented in the popular videos included film and animation, gaming, How To videos and style, sports video, and travel.

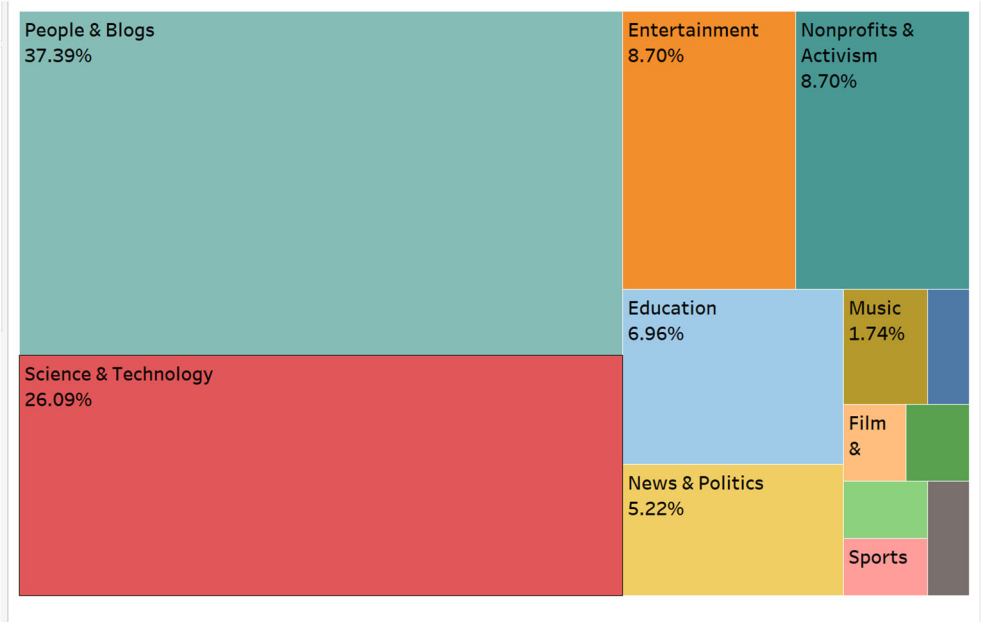


Fig. 4 Distribution of Video by Categories

4.5 ViewsView and Likes (Top 10 videos)

A comparison of how the number of views in a video stacked against the number of likes showed that the higher the views that a video has, the higher the number of likes it recorded. To this end, the comparison of the two charts indicated that the number of likes and views was consistent across the types of videos that attracted YouTube visitors. The higher the number of views, the higher the number of likes reported on a popular video.

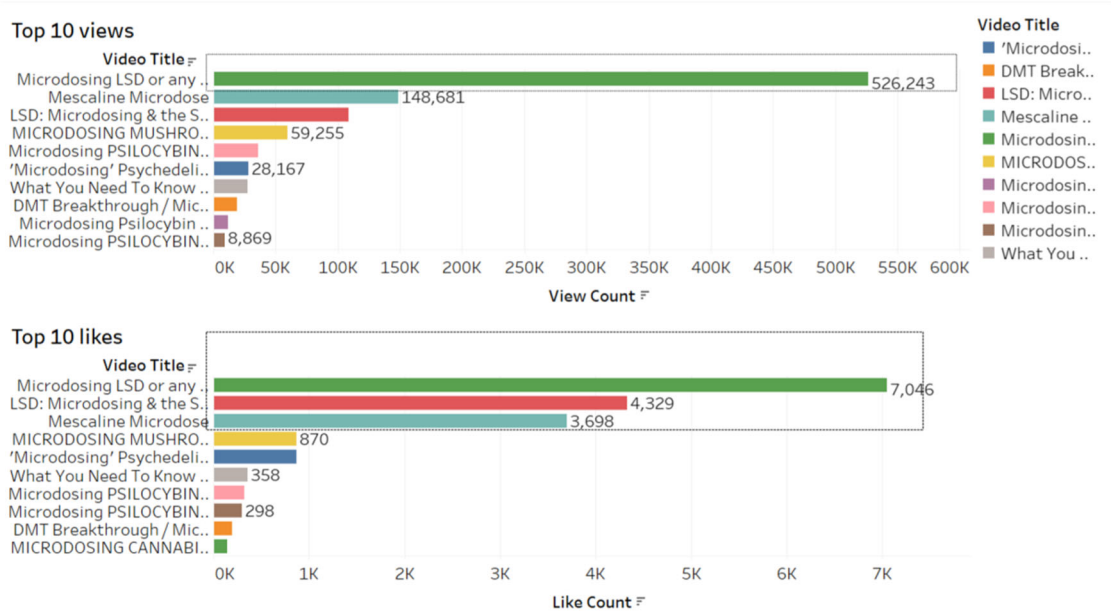


Fig. 5 Top 10 Views and Likes

4.6 Likes and Dislikes in Popular Videos by Category

The analysis of the most popular video for every category in term of likes and dislikes suggest that the number of reaction elicited from viewer differ across categories. Science and technology had the highest number of reactions from customers, with the number of likes being more than 7,000 and the number of dislikes being less than 500. The most popular news and politics videos have more than 5500 likes and more than 1000 dislikes. The entertainment video had 5000 likes and less than 200 likes. The popular videos in the education category and People and Blogs categories had less than 1000 likes and a minimal number of dislikes. The level of engagement was significantly lower for video in film and animation, non-profit and activism, gaming, sports, and music.

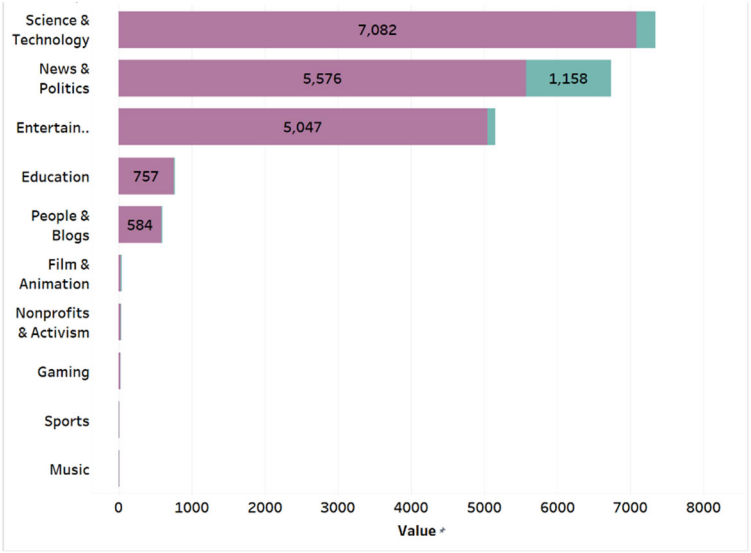
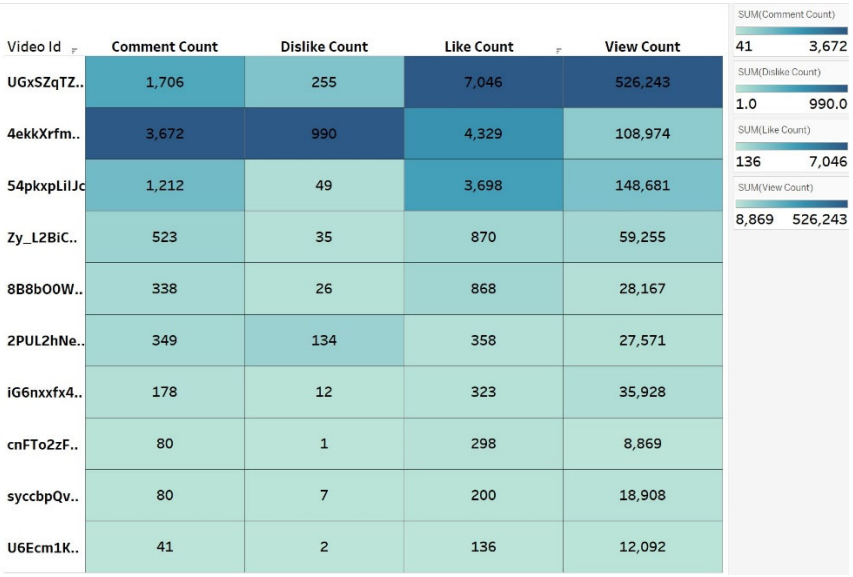


Fig. 6 Distribution of Popular Video Category Likes and Dislikes

4.7 Top 10 Videos and Views

To further understand viewers' engagement with the most popular videos, a chart examining the top 10 videos concerning the number of views and comparing the performance of each data item was made. As the data indicated, the level of viewer engagement with the video heavily depended upon the number of views reported in a popular video.



Video Id	Comment Count	Dislike Count	Like Count	View Count
UGxSZqTZ..	1,706	255	7,046	526,243
4ekkXrfm..	3,672	990	4,329	108,974
54pkxpLilJc	1,212	49	3,698	148,681
Zy_L2BiC..	523	35	870	59,255
8B8bO0W..	338	26	868	28,167
2PUL2hNe..	349	134	358	27,571
iG6nxxfx4..	178	12	323	35,928
cnFTo2zF..	80	1	298	8,869
syccbpQv..	80	7	200	18,908
U6Ecm1K..	41	2	136	12,092

SUM(Comment Count) 41 3,672
SUM(Dislike Count) 1.0 990.0
SUM(Like Count) 136 7,046
SUM(View Count) 8,869 526,243

Fig. 7 Viewer Engagement Relationship based on the Number of Views

4.8 The Relationship between the Number of Views and other Performance

To further understand viewer engagement, data were analyzed to examine the trend of customer engagement with the video based on the number of views in a video. The number of views was considered the independent variable, and the number of likes, dislikes, and comments was considered the dependent variable. The analysis showed that the relationship between the three dependent variables varied significantly from the independent variables. Below 60,000 views, there is no describable relationship between the number of views and the dependent variables of interest. As the popular video gained more than 60,000 viewers, a significant linear relationship with the three variables of interest is observed and reported. Nonetheless, the relationship peaks at around 110,000 views, at which point a negative relationship between the number of viewers and the three dependent variables is observed.

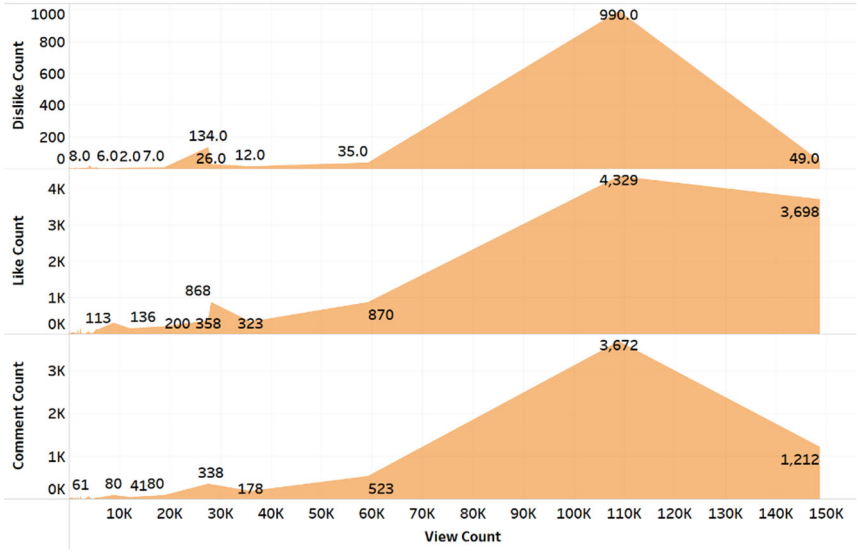


Fig. 8 Relationship between Video Views and YouTube User Engagement

5. Discussion

Notably, the analysis of the most popular videos on YouTube yields significant insights that can be used to inform the creation of videos intended for marketing purposes as well as project the direction of viewers' engagement with the video. The increasing number of popular videos points to the utility of YouTube as a platform for reaching out to the audience in the sense that the number of popular videos has been increasing over time between 2006 and 2016. The increase in popularity points to an increasing number of users visiting YouTube and indicates that YouTube content creators have mastered the strategies that can be effectively leveraged to enhance the levels of viewer engagement with their videos.

Interesting information emerges regarding the length of the videos that content publishers should upload to the website. More than three-quarters of the most popular video had a length between 0-9 minutes. Thus, one should be very wary of uploading videos that the viewers may consider too long as they may end up failing to attract the interest of the customer. The phenomenon could also be attributed to the fragmentation of viewers' attention, which makes it hard for them to focus on long-form videos (Tafesse, 2020).

For a video to be popular on the YouTube platform, the viewer should provide it in HD quality as opposed to SD quality. The technological progress and the level of quality of videos available on the YouTube platform have improved over the years, making it necessary for content creators to develop high-quality videos if they want to attract the attention of the viewers. The preference for HD-quality video point to the need for content creators to invest in the equipment required to produce high-quality videos.

Notably, the people and blogs category had the highest number of trending videos accounting for more than a third. The data points to the high interest of viewers in videos that explore the category. Science and technology was the next most popular YouTube video category. When creating content, it would be advisable for marketing to design the content in such a way that it aligns with the aspects emphasized within the two categories. Contrary to expectations, categories such as music, news and politics, sports, and films did not have a high number of trending videos (Golnari & Zhang, 2014). The marketer has to tailor their YouTube content to ensure that it contains content that is likely to elicit more interest from the viewer.

It was insightful to note that the number of likes in a video was dependent on the number of views reported in a video. That is, the more popular a video is, the higher the number of likes that it is likely to attract from YouTube views. Thus, a content creator should focus on increasing the extent to which a video is captivating if they would like to attract more engagement from the intended audience (Tafesse, 2020). As long as one creates a video that is captivating for the intended audience, they are likely to receive positive ratings from the viewers. The same trend applies to the number of dislikes and comments attracted by a trending video. As long as the viewership of a given video is high, the number of likes, dislikes, and comments will be high.

Interestingly, the distribution of viewers' engagement with the video varies by category. Science and technology reported the highest level of likes and dislikes, followed by news and politics, and entertainment. Of these, popular videos belonging to the News and Politics category reported the highest number of dislikes, with entertainment reporting the lowest number of dislikes (Golnari & Zhang, 2014). Despite having the largest number of popular videos by category, People & Blogs category had the fifth highest number of likes and dislikes. It is evident to marketing content creators that the nature of the content is likely to influence the level of viewer engagement with a given video. A video that has an aspect of science and technology is likely to attract more engagement from the audience.

Overall, the most popular video on the YouTube platform that was uploaded between 2007 and 2016 was of HD quality, was shorter than 9 minutes, and belonged mainly to the People & Blog category and Science & Technology sections. The level of engagement of the viewers with the trending video at the time heavily depended upon the number of views. Of the categories, the science and technology popular video had the highest number of engagements, followed by news and politics.

5.1 Implications

Notably, the finding from the current research has significant implication for theory and practice. Theoretically, the analysis of trending videos adds to the existing literature on the factors that determine the popularity of videos on YouTube. To this end, the research provides evidence advancing the view that video length and the type of content influence the number of views that a given video attracts from YouTube users (Tafesse, 2020). In addition, the current research adds to the existing literature, which shows that the level of viewer engagement with a given video heavily depends upon the number of views reported.

The research also has significant insights that can be used to inform the creation of YouTube videos. Technically, one should produce a short, high-quality video that quickly communicates to the intended audience (Ten-Hove & Van der Meij, 2015). Content creators should be aware that few YouTube viewers are willing to invest a significant amount of their time watching a single video. Regarding content, it is essential to create content that falls within the Science & Technology category or People & Blog category, as most popular YouTube videos belong to the two categories (Barjasteh, Liu, & Radha, 2014). From the high number of dislikes reported, a market should avoid the News and Politics category, given its tendency to generate negative reactions from the viewers.

5.2 Limitations and Future Direction

While the current study yields insightful information, one needs to take into account several limitations that are likely to affect the interpretation of the study findings. Notably, the current study was conducted using a dataset collected between 2007 and 2016. Consequently, the variables that determine the popularity of a given video may not necessarily be applicable in 2022, given the fast pace with which technology changes. In addition, the focus of the analysis was trending videos. Given the changing nature of viewers' tastes, it is essential to consider the likelihood that it may not be applicable. Future research should be conducted using recent data.

6. Conclusion

In an analysis of trending videos uploaded to the YouTube platform between 2007 and 2016, many defining characteristics of the most popular videos emerged. First, viewers prefer short videos that do not exceed 9 minutes. Second, HD-quality videos are more popular than SD-quality videos. Third, the most popular categories of YouTube videos are Science & Technology and People & Blogs. Music and sports categories did not have a high number of popular videos, contrary to expectations. Fourth, the level of viewer engagement with the content of a popular YouTube video was heavily informed by the number of views it reported. The higher the number of views. The higher the level of viewers' engagement with the video. Findings from the analysis can be used to inform content creation.

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