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*Article*

# Commenting on Top Spanish YouTubers: "No Comment"

**Victoria Tur-Viñes [1*], Araceli Castelló-Martínez [2]**

[1] University of Alicante; victoria.tur@ua.es
[2] University of Alicante; araceli.castello@ua.es
* Correspondence: victoria.tur@ua.es; Tel.: +34-636-000-250

**Abstract:** The aim of this paper is to analyse commenting activity and sentiment (polarity and subjectivity) in interactions in response to videos by Spain's most-subscribed YouTubers. An exploratory study was conducted on the content of the comments, their relationship with other social media actions, subjectivity and polarity, as well as from the perspective of the participatory culture. The results show that commenting is a potential option for interaction that is underused by the communities of users. Replies to comments are found to be limited to the user-user level, while YouTubers themselves and the moderators that YouTube allows them to designate rarely comment or reply on social networks. However, creators do monitor comments and provide feedback to a limited selection thereof in subsequent videos. There thus appears to be a strategic, exploitative use of comments, marked by a delayed response aimed at attracting audiences to new content.

**Keywords:** YouTubers; Sentiment Analysis; Interaction; Influencers; Commenting; Facebook

## 1. Introduction

### *1.1. YouTube: Broadcast Yourself*

YouTube has been the biggest video viewing platform since 2005. It has been described by scholars as "post-modern television" (Kavoori, 2015; Feixas, Codina & Carandell, 2014; Lavado, 2013; Murolo, 2010) and is the preferred platform for audiovisual consumption among teens (García, García & López de Ayala, 2016). More than 1.9 billion users sign into YouTube (hereinafter, YT) each month, 300 hours of content are uploaded to the platform every minute, and more than 30 million users visit the website every day, with an average visit time of 8´51¨.

In Spain, YT is the third most widely used social network (69% of users), after Facebook and WhatsApp, and the second highest rated (8.1 out of 10), behind WhatsApp (IAB Spain, 2018). The platform possesses a remarkable capacity for generating a strong sense of community among users (Boyd, 2014, p. 47; Chau, 2010, p. 65) who share interests and exhibit a high level of loyalty to YouTubers. Young people constitute the demographically predominant group on YT, both in terms of absolute audience and of the volume of feedback actions and interactions (Chau, 2010, p. 65).

The mechanisms for interaction are what differentiate YT from television, as they offer additional spaces for enhancing the YouTuber-community relationship and a source of useful information for YouTubers to gauge the reactions of their followers and to learn about what they do. Specifically, commenting offers a productive forum for interaction where followers can express themselves verbally. This research will focus on comments in order to examine what motivates their content, what sentiment they reflect (polarity and subjectivity), and how YouTubers make use of this interaction.

### *1.2. YouTubers*

A YouTuber is a person who has a channel on the YT social network and uses it to publish videos, with the aim of generating as many views as possible (Lange, 2007; Hidalgo-Marí & Segarra-

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Saavedra, 2017, p. 45) and securing potential revenues through the monetisation of their audience (Rull, 2014, p. 1). Some audiovisual creators have become icons in a youth entertainment world that represents an alternative to the traditional audiovisual industry (Ramos-Serrano & Herrero-Diz, 2016).

A YouTuber may be an influencer, but not all influencers are YouTubers. As a result of the videos they post on YT, YouTubers become media figures who build their identities through the content they broadcast (Scolari & Fraticelli, 2016, p. 1672). According to Scolari and Fraticelli, another distinctive feature of YouTubers is the individualisation of the viewer. The resources offered, like the visitor counter, the number of subscribers or the likes and dislikes, and the spaces provided for users to share their comments, demonstrate this: "this possibility of feedback […] is enhanced and expanded through the interconnection of the YouTuber's accounts on hypermedia platforms like Twitter, Facebook and Instagram, where they receive messages that they often respond to in their videos" (Scolari & Fraticelli, 2016: p. 1680). Based on these considerations, we posited the following research questions:

Q1: Is the volume of comments generated by a video on YT the same as that generated on the YouTuber's Facebook profile in response to the same content?

Q2: How do YouTubers manage the social conversation?

According to the Social Media Marketing Glossary of Argentina's Direct and Interactive Marketing Association (AMDIA), an influencer is a person who makes others do or think what he or she wants them to, thereby changing the behaviour of groups or societies (AMDIA, 2015).

The leadership role played by YouTubers activates some significant mechanisms for influencing millions of followers. In addition to the payments offered by YouTube based on visitor numbers and Google AdSense advertising, YouTubers can also obtain profits through agreements with different brands (Sáez & Gallardo, 2017, p. 51). As media opinion leaders, YouTubers establish commercial relationships with advertisers for the promotion of their products, services and/or brands, thereby cultivating an extraordinary power of influence and suggestion over their audience (Del Pino-Romero & Castelló-Martínez, 2017; Ramos-Serrano & Herrero-Diz, 2016). The importance of YouTubers lies in their power to create and maintain massive audiences of young followers and to trigger interaction in order to increase the chances of the natural expansion of the video.

In social psychology this phenomenon is explained by Cialdini's theory of influence (Cialdini, 2001) and its six principles: commitment and consistency; reciprocity; social proof; authority; liking; and scarcity. Reciprocity is highlighted by Cialdini as one of the most powerful elements for eliciting acquiescence from others. Evidence of this property of influence can be found in the comments posted on YouTube.

The videos broadcast by YouTubers are characterised by a marked aesthetic sense tending towards professionalism (Sabich & Steinberg, 2017, p. 184), with certain rules and tactics that organise the discourse and lend consistency to their essentially viral nature (Rotman & Preece, 2010, p. 323). Common patterns include the strategy of set introductory and closing phrases in the video (uniquely identifying each YouTuber) and the use of a personal design intended to promote brand recognition for the channel (Tur-Viñes, Núñez-Gómez & González-Río, 2018, p. 1226).

YouTubers offer young people a new form of monologue-based communication to engage and attract viewers (Frobenius, 2014). Rego and Romero-Rodríguez (2016: 219) analyse the language of the three YouTubers with the most subscribers in Spain (El RubiusOMG, TheWillyRex and Vegetta777) and conclude that they all use a colloquial language mainly targeted at millennials. Research by Gallardo and Jorge (2010) shows that internet users who consume videos online, and specifically on YouTube, adopt a passive attitude, apparently inheriting the behaviour of spectators of traditional one-way media.

Dynel (2014) identifies three different levels of communication on YouTuber channels: the level of speaker and hearer in the video interaction; the level of sender and recipient of a YT video; and the level of speakers and hearers who post and read comments, respectively. Participating in all these levels is not only the YouTuber but also the members of the YouTuber's production team and the hearers themselves, who are able to comment, reply or post their own videos. Collaboration is

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another of the qualities that define the space of YouTuber channels as a collective phenomenon characteristic of the participatory culture in which we are immersed today.

### 1.3. *Commenting on YouTuber videos*

The analysis of user interaction with the content broadcast on social networks is known as natural language processing (NLP) or opinion mining (OM). The possibility of posting comments on articles, posts, videos or other content broadcast on social networks is one of the distinctive features of collaborative websites. The desire to express an emotion or an opinion and to supplement or clarify information constitute the main motivations behind commenting on social network content (Stroud, van Duyn & Peacock, 2016).

There are various studies that explore the influence of user comments on the perception of the content broadcast on social networks. In the area of digital journalism, Von Sikorski and Hänelt (2016) point out that a consensus among user comments affects the perception of journalistic quality, reliability and persuasion of the content broadcast. People believe that the comments of others on online news stories are a representative reflection of what the general public think and this directly affects their own evaluations of the stories (Kim, 2015). This idea was also confirmed by Lee & Jang (2010), who demonstrated that user opinion about certain information broadcast on online channels was influenced by comments previously posted by other users.

There is a huge potential for the public discourse associated with this form of computer-mediated communication with users, according to Weber (2013). However, this potential is present only when several users participate in the comments and when their communication becomes interactive. Weber adapts the news theory of Galtung and Ruge (1973) and assumes that the factors shaping the news in an article affect both the participation and interactivity levels in the comments section. Therefore, the type of content and how it is narrated will affect the participation of commenters and their interaction with one another. Lee (2012) posits the concept of a hostile media perception (HMP) arising from a type of defensive cognitive processing, suggesting that people with high ego involvement perceive the news as hostile and biased if they read negative comments on it. These studies confirm that people may erroneously attribute the opinions expressed by others in the comments to the news article itself. All of this demonstrates that, like the content that generates them, user comments also have the power to influence and propel the conversation.

Based on the above, we posited the following research questions:

Q3: What percentage of comments generate replies from other users and what is the average number of replies per comment generated on each video/channel?

Q4: What topics predominate in the comments on each video?

Madden, Ruthven and McMenemy (2013) stress the heterogeneity that characterises user comments on the content published on digital platforms. On the question of what motivates users to comment or reply, Chang, Whitlock and Bazarova (2018) analyse commenting on Facebook and suggest that relationship closeness is the first and most significant determinant of likelihood to respond. When relational closeness was high, replies were direct and immediate. In the absence of relational closeness between comment poster and respondent, the likelihood of responding depends on (1) perceived acuity and seriousness of the content, (2) consistency in posting patterns, (3) perceived capacity to provide efficacious support, (4) history of reciprocity, (5) perceived resonance with posted content, (6) perceived motivations of the poster of the original comment, and (7) perceptions of other users. Users tend to read comments posted by others in their interaction with videos on YT with two main motives: information seeking and entertainment (Khan, 2017).

Focusing on content broadcast in video format, Ksiazek, Peer and Lessard (2014) have demonstrated a positive relationship in news videos between popularity (defined in terms of the number of views and recommendations) and user-content interaction (comments without replies from others). However, videos with fewer views generated more user-user interaction (comments with replies by other users).

Siersdorfer et al. (2010) studied comments on YT (specifically, the likes that comments received), and concluded that positive comments are associated with high levels of popularity defined in terms

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of the number of views. Jamali and Rangwala (2009) also provide evidence of a relationship between interactivity and number of views: the age of the comment and the number of words it contained were associated with high viewing levels. Lee, Moon and Salamatian (2010) proposed a predictive model of views in which the number of comments in a conversation thread and the lifetime of the comments thread can predict a high number of views.

The above led us to posit the following research questions:

Q5: What relationship exists between the comments received on videos and other interaction variables (views, likes and dislikes)?

Q6: What relationship exists between a channel's number of subscribers and the polarity and subjectivity of comments?

Q7: What relationship exists between interactions (views, comments, likes, dislikes) that videos receive and the polarity and subjectivity of the comments?

In addition to being able to reply to user comments with another comment, the YT platform offers content creators two interaction options: giving a red heart to a favourite comment, and "pinning" a user comment to the top of a thread ("pinned by creator" appears beside the profile of the user who made the comment). However, the YouTube API could not provide data on these at the time of this study.

### *1.4. Sentiment analysis*

Opinion mining involves what is known as sentiment analysis, which refers to the different methods of computational linguistics that help identify and extract subjective information from content in the digital world. Sentiment analysis makes it possible to extract a tangible and direct value, such as determining whether a text published online contains positive or negative connotations.

Sentiment analysis of conversations generally includes two values: subjectivity and polarity. Subjectivity relates to whether the comment is objective or subjective. Polarity refers to whether the comment is positive, negative or neutral (Pang & Lee, 2008). This methodology is therefore focused on automatically determining whether or not an opinion is included in a text, on identifying whether the polarity or sentiment expressed is positive, negative or neutral, and on extracting an author's perception of specific aspects of a topic (Vilares et al., 2017: 126).

A diverse range of studies have engaged in sentiment analysis of social networks like Twitter or YouTube (Cheong & Cheong, 2011; Siersdorfer et al., 2010; Sureka et al., 2010). Krishna (2014) demonstrates that trends in user sentiments are directly related to real world events, on the basis of certain key words.

Some authors (Choi 2003; Tannen 1999) suggest that the anonymity offered by the internet tends to favour antagonism and conflict in interactions. Lange (2007: 11) studied hostile behaviour on YT and confirmed that the presence of a personal image on a profile does not guarantee courteous interaction. Moreover, the motivations of users who post hostile comments are complex and varied, making their control or regulation rather complicated (Lange 2007, p. 27).

Malicious practices in interaction have been confirmed by Benevenuto et al. (2010) in a study identifying the 6 most recurrent actions of YT users (views, list of a user, top videos or related videos, interactions, search, and others). The study found that some users signed into YT and rated videos without watching them first. This is evidence that data on interactions can be falsified.

The emotional charge is a determining factor for content expansion. Positive messages get disseminated more often than negative ones, but emotional intensity in both cases increases the likelihood of content going viral or provoking changes of attitude, as has been shown in the case of advertising by Kirby (2004); Phelps et al., 2004; Eckler & Bolls, 2011, and Hagerstrom, Alhabash & Kononova (2014). However, Thelwall, Buckley and Paltoglou (2012) studied YT comments and found that audiences respond on a mass scale to negative comments while positive comments elicit few responses.

This review of the literature on the subject led us to posit the following research questions:

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Q8: What is the tone/sentiment of the social conversation in comments generated by the most viewed content of the top YouTubers?

Q9: What are the characteristics of the videos with the highest levels of polarity and subjectivity (duration and type of video)?

Q10: What is the time of publishing of the videos with the highest polarity and subjectivity levels?

Q11: What relationship exists between the videos with the highest polarity and subjectivity levels and the interaction generated on other platforms (Facebook and Twitter)?

## 2. Method

The main objective of this paper is to analyse commenting activity and sentiment (polarity and subjectivity) in interactions in response to videos by Spain's most-subscribed YouTubers. Commenting activity was considered both on YouTube and on the YouTuber's official FB page, in relation to the same video, along with the YouTuber's participation in the resulting social conversation.

To this end, an exploratory study was conducted, involving a quali-quantitative analysis of the content of a convenience sample of 8,598 comments on YT generated by 10 videos. The samples selected, covering the period from September 2018 to February 2019, are detailed below:

-Sample of channels: 10 channels were chosen from a ranking of the 250 accounts with the most subscribers according to SocialBlade (September 2018). The selection criteria for the channels were: Spanish YouTuber channels with the most subscribers, together with the presence of monetisation and parallel profiles on other social networks (Facebook and Twitter).

-Sample of videos and comments: The selection was based on two levels:

Level 1 (comment content): from each channel, only the most recent video in the period studied and with the most views was chosen, resulting in a sample of 10 videos that allowed for the collection of 8,598 comments. The criterion of most recent video was chosen due to the nature of the software used to extract details from the comments (NVivo Capture), which allows access to the last 1,000 comments on the video at the time of capture. By choosing the most recent videos, we could maximise the capture of comments at the beginning of the conversation thread, although in some cases the volume of comments was very high and it was not possible to capture the first comments. On three channels the comments did not reach the maximum number of 1,000 that could be captured by NVivo 12. This level was used to answer Research Questions Q1-Q5.

Level 2 (comment polarity and subjectivity): 100 videos were chosen, made up of the ten videos with the most views in the study period on each of the 10 previously identified channels. These 100 videos generated a sample of 1,141,091 comments. This level was used for Research Questions Q6-Q11.

The variables analysed in each of the 10 videos of the sample are: YouTuber, title of video, date and time published, subscribers to channel, views, duration of video, and direct appeals to the audience. The variables considered in the comment analysis were: number of comments, replies to comments, motivation of content, users who post replies to comments, polarity, subjectivity, and the number of posts generated on FB.

The sentiment analysis of the conversation (polarity and subjectivity) was conducted using the analytical tool TextBlob, a paid software program for analysing and measuring content that provides information on the polarity of comments posted by users on the videos. This tool assigns a value to each word in a sentence in order to calculate the subjectivity and polarity of the comments:

- Subjectivity of conversation: objective or subjective (+0.0 => +1.0). The value of +1.0 is the highest level of subjectivity and 0 is the highest level of objectivity.

- Polarity of conversation sentiment: negative or positive (-1.0 => +1.0). The value of 0 denotes neutrality.

## 3. Results

*General interaction metrics for channels and videos selected (Level 1)*

Table 1 shows the selection of Spanish YouTuber channels occupying the top positions in SocialBlade's ranking in September 2018, based on subscribers and views. These 10 channels have a collective total of 133,503,699 subscribers with an average of 13,350,370 subscribers each. There are three channels that exceed both the average and the median: elrubiusOMG, VEGETTA777 and TheWillyRex. 80% of the channels belong to the video game category on YT.

Table 1. Ranking of channels and videos in the sample

| | CHANNEL NAME | TOPIC | Subscribers (M) (21/02/2019) | VIDEO TITLE | VIDEO TYPE | DATE AND TIME | DURATION |
|---|---|---|---|---|---|---|---|
| 1 | elrubiusOMG | VIDEO GAMES | 33 | EL NUEVO GENIO DE ALADDIN | Vlog | 19/02/2019 14:03 | 0:10:39 |
| 2 | VEGETTA777 | VIDEO GAMES | 25 | FORTNITE - MINIJUEGO *PINBALL LOCO* (MODO CREATIVO) | Screen-sharing | 25/02/2019 11:33 | 00:14:07 |
| 3 | TheWillyrex | VIDEO GAMES | 15 | AL LIMITE! ¡ PAINT THE TOWN RED | Screen-sharing | 16/01/2019 16:17 | 00:09:15 |
| 4 | ExpCaseros | HOME MADE EXPERIMENTS | 10 | EL INVENTO MÃ• S ESTÃŠPIDO Y ASQUEROSO DE AMAZON - REVIENTA GRANOS | Sit-down | 24/01/2019 12:58 | 00:13:18 |
| 5 | Makiman131 | VIDEO GAMES | 10 | ENTRENANDO COMO UN MILITAR !! PRACTICA MILITAR MAKIMAN | Vlog | 19/02/2019 12:01 | 00:11:17 |
| 6 | luzugames | VIDEO GAMES | 8.6 | FINAL INCREIBLE! RESIDENT EVIL 2 REMAKE - LUZU | Screen-sharing | 11/02/2019 11:15 | 00:58:12 |
| 7 | TheGrefg | VIDEO GAMES | 9.6 | MI GRAN VICTORIA EN BLACK OPS 4 *NUEVO CONTENIDO GRATIS* - THEGREFG | Screen-sharing | 24/02/2019 17:43 | 01:48:38 |
| 8 | sTaXxCraft | VIDEO GAMES | 7.2 | FORTNITE TE DA ESTE CAMUFLAJE GRATIS!! | Screen-sharing | 21/11/2018 20:22 | 00:10:45 |
| 9 | gymvirtual | VIRTUAL GYM | 6 | CALENDARIO DE EJERCICIOS PARA ADELGAZAR DICIEMBRE ¡ GYMVIRTUAL | Sit-down | 30/11/2018 10:00 | 00:05:43 |
| 10 | elchurches | VIDEO GAMES | 5.6 | EL NUEVO LADRON PROFESIONAL ! SIMULADOR DE LADRON - ELCHURCHES | Screen-sharing | 06/11/2018 11:00 | 00:13:07 |

Source: compiled by authors based on data from SocialBlade and YT.

Table 2 presents the data on interaction with the 10 videos in the sample on Level 1 (one for each YouTuber selected), as well as the polarity and subjectivity values, which will be discussed below:

Table 2. Interaction, polarity-subjectivity and ratios for videos in the sample

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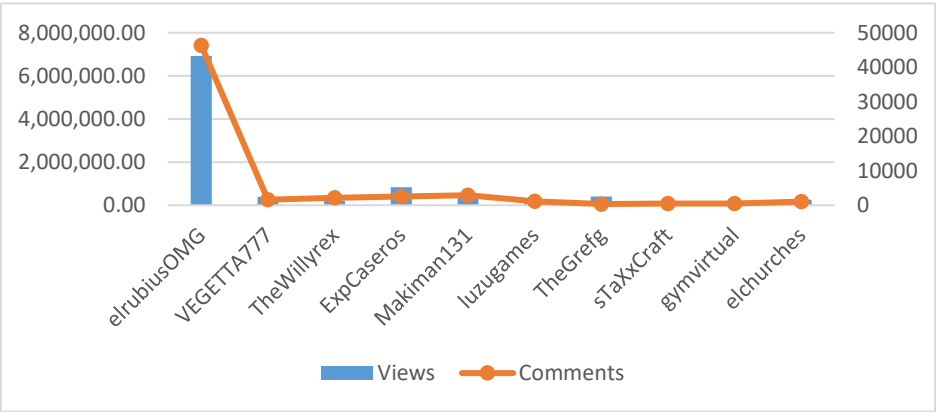
| Video | YouTuber | Views (28/02/2019) | Comments (28/02/2019) | Likes (28/02/2019) | Dis-likes (28/02/2019) | Polar-ity | Subjec-tivity | Commen t-view ratio | Like-view ratio | Dislike-view ratio | Commen t-like ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.9 | elrubiusOMG | 6,922,305 | 46,305 | 922,619 | 17,323 | 3.6 | 22.62 | 0.7% | 13.3% | 0.3% | 5.0% |
| 2.1 | VEGETTA777 | 387,239 | 1,595 | 42,213 | 786 | N/D | N/D | 0.4% | 10.9% | 0.2% | 3.8% |
| 3.4 | theWillyrex | 206,277 | 2,117 | 19,694 | 1,247 | 2.79 | 21.15 | 1.0% | 9.5% | 0.6% | 10.7% |
| 4.5 | ExpCaseros | 834,523 | 2,557 | 23,790 | 1,273 | 1.43 | 13.47 | 0.3% | 2.9% | 0.2% | 10.7% |
| 5.3 | Makiman131 | 556,348 | 2,535 | 28,107 | 2,193 | -4.83 | 24.53 | 0.5% | 5.1% | 0.4% | 9.0% |
| 6.1 | luzugames | 167,649 | 1,170 | 16,853 | 132 | 12.15 | 28.96 | 0.7% | 10.1% | 0.1% | 6.9% |
| 7.10 | TheGrefg | 412,418 | 350 | 20,675 | 1,120 | 1.43 | 18.49 | 0.1% | 5.0% | 0.3% | 1.7% |
| 8.6 | sTaXxCraft | 158,551 | 519 | 10,612 | 132 | 16.08 | 22.04 | 0.3% | 6.7% | 0.1% | 4.9% |
| 9.1 | gymvirtual | 120,144 | 480 | 5,641 | 82 | 2.52 | 14.06 | 0.4% | 4.7% | 0.1% | 8.5% |
| 10.4 | elChurches | 251,897 | 1,023 | 21,259 | 295 | -0.92 | 6.47 | 0.4% | 8.4% | 0.1% | 4.8% |
| TOTAL | | 10,017,351 | 58,651 | 1,111,463 | 24,583 | | | 0.6% | 11.1% | 0.2% | 5.3% |

Source: compiled by authors based on data from TextBlob

Although the elrubiusOMG video holds first place in all four interaction variables, the relationship between views and social actions is not repeated for the rest of the channels, as can be seen in the ranking in Figure 1. The highest ratio between comments and views in this sample belongs to the TheWillyrex video, with 1%, while the video by TheGrefg has a ratio below 0.1% for this value. The video with fewest views in this sample is by gymvirtual, with 120,144 views, and three videos have fewer than 1,000 comments: the videos by TheGrefg, sTaXxCraft, and gymvirtual. The videos that receive the highest number of comments in relation to the "likes" obtained are the ones by TheWillyrex and ExpCaseros, both with 10.7%.

Figure 1. Views and comments for videos in the sample




Source: compiled by authors based on data from TextBlob

*Analysis of comments on the 10 videos in the sample (Level 1)*

For all of the videos, the number of comments captured by NVivo is more than 40% of the total number of comments, with the exception of the video by elrubiusOMG, for which the number of comments analysed represents only 2.4% of the very high number of comments it received; this reduces the overall average of comments captured per video to 14.7%. In five cases, this value was above 87%.

In response to Q1, the biggest volume of comments is generated on YT. Activity on FB is much lower, and in some cases there are no comments at all. There is no significant relationship between comments on YT and FB about the same video.

In relation to Q2, the YouTuber's ID has been tracked in the comment lists extracted with NVivo for each video in the sample. The results show that the YouTubers never reply, and thus in the videos studied the interaction is strictly between followers. In none of the 10 videos of the sample is there a comment or reply posted by the YouTuber.

The ratio of replies to comments has been calculated in the following way:

$$response\ rate\ ratio/comment\ per\ video = \frac{\sum replies\ to\ comments\ video}{Total\ comments\ video} x100$$

The percentage of replies to comments on YT on each channel for the video selected (Q3) shows that the highest response rate of users to comments made by others is 31% (gymvirtual). The topic of the channel is not a determining factor in the response rate as channels with different subjects (virtual gym and video games) obtain the highest ratios. The average comment-reply ratio between users is 9.9%. Only in the cases of TheGrefg, sTaXxCraft and gymvirutal is the percentage of replies to comments above 20%.

Table 3 also breaks down the comments captured by NVivo between comments posted by users on the video and replies to those comments, together with the data related to the different users who post comments and replies.

Table 3. Comments and replies captured by NVivo

| Video | YouTuber | NVivo Comments (28/02/2019) | Comments | | | | | Replies | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | n | % | Number of different users | Different users - Comments | Comments per user | n | % | Number of different users | Different users - Replies | Replies per user |
| 1 | elrubiusOMG | 1,107 | 982 | 88.7% | 943 | 96.1% | 1.0 | 125 | 11.3% | 80 | 63.8% | 1.6 |
| 2 | VEGETTA777 | 1,071 | 1,000 | 93.4% | 957 | 95.7% | 1.0 | 71 | 6.7% | 55 | 77.2% | 1.3 |
| 3 | theWillyrex | 1,025 | 1,001 | 97.7% | 961 | 96.0% | 1.0 | 24 | 2.3% | 21 | 87.9% | 1.1 |
| 4 | ExpCaseros | 1,048 | 1,001 | 95.6% | 948 | 94.7% | 1.1 | 47 | 4.4% | 33 | 70.9% | 1.4 |
| 5 | Makiman131 | 1,048 | 1,003 | 95.7% | 955 | 95.2% | 1.1 | 45 | 4.3% | 31 | 69.0% | 1.5 |
| 6 | luzugames | 1,034 | 994 | 96.1% | 964 | 97.0% | 1.0 | 40 | 3.9% | 22 | 55.0% | 1.8 |
| 7 | TheGrefg | 307 | 217 | 70.5% | 198 | 91.4% | 1.1 | 90 | 29.5% | 65 | 71.8% | 1.4 |
| 8 | sTaXxCraft | 464 | 360 | 77.6% | 328 | 91.1% | 1.1 | 104 | 22.4% | 77 | 74.2% | 1.3 |
| 9 | gymvirtual | 480 | 333 | 69.4% | 435 | 130.6% | 0.8 | 147 | 30.6% | 19 | 12.9% | 7.7 |
| 10 | elChurches | 1,014 | 858 | 84.6% | 951 | 110.8% | 0.9 | 156 | 15.4% | 11 | 7.1% | 14.2 |

Source: compiled by authors based on data from NVivo

The users who decide to comment do not usually post more than one comment, and thus there is very little difference between the number of comments and the number of different users who post them. In the replies to comments it is more common for users to interact more than once.

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Q4 relates to the predominant topics in the comments. The most repeated words are: name of channel, like, ha ha, genius, crack, video, code, cool, YouTuber, hi, free fire, game. On the gaming channels the following words also appear very frequently: upload more free fire, episode, series, I love it. It is evident that the comments are reactions to elements present in the video that provoke a need for followers to respond, e.g. a video recorded with a defect, multi-player video games, difficulties sharing a game, congratulations, and curses when things go badly while playing a video game.

*Sentiment analysis: polarity and subjectivity (Level 2)*

The number of subscribers does not determine the polarity and/or subjectivity of the comments (Q6), as shown in Table 4.

Table 4. Average polarity and subjectivity of comments for each channel

| YT channels and no. of subscribers in millions | Average polarity of comments | Average subjectivity of comments |
|---|---|---|
| elrubiusOMG (3.3) | 6.6280 | 22.3090 |
| VEGETTA777 (25) | 2.6313 | 8.8888 |
| TheWillyrex (15) | 7.8190 | 23.1890 |
| ExpCaseros (10) | 4.2230 | 14.3180 |
| Makiman131 (10) | 4.5490 | 16.0040 |
| Luzugames (8.6) | 8.8640 | 26.3890 |
| TheGrefg (9.6) | 5.0500 | 15.2300 |
| sTaXxCraft (7,2) | 2.9990 | 5.1100 |
| Gymvirtual (6) | 8.2544 | 15.0811 |
| ElChurches (5.6) | 1.1070 | 7.1370 |
| **OVERALL AVERAGE:** | 5.28 | 15.50 |

Source: compiled by authors based on data from TextBlob

To explore possible correlations between the variables of interaction (views, comments, likes and dislikes) on the one hand, and polarity and subjectivity on the other (Q7), the Pearson correlation coefficient was calculated. We found that there was no statistically significant relationship in this respect, despite obtaining higher correlation coefficients in the subjectivity of the comments.

Neither polarity nor subjectivity follow a regular pattern in their relationship with the comments received about the videos. As it was the most outstanding case, the relationship between comments, polarity and subjectivity for the channel elrubiusOMG is detailed in Figure 2:

Figure 2. Relationship between comments, polarity and subjectivity in elrubiusOMG videos

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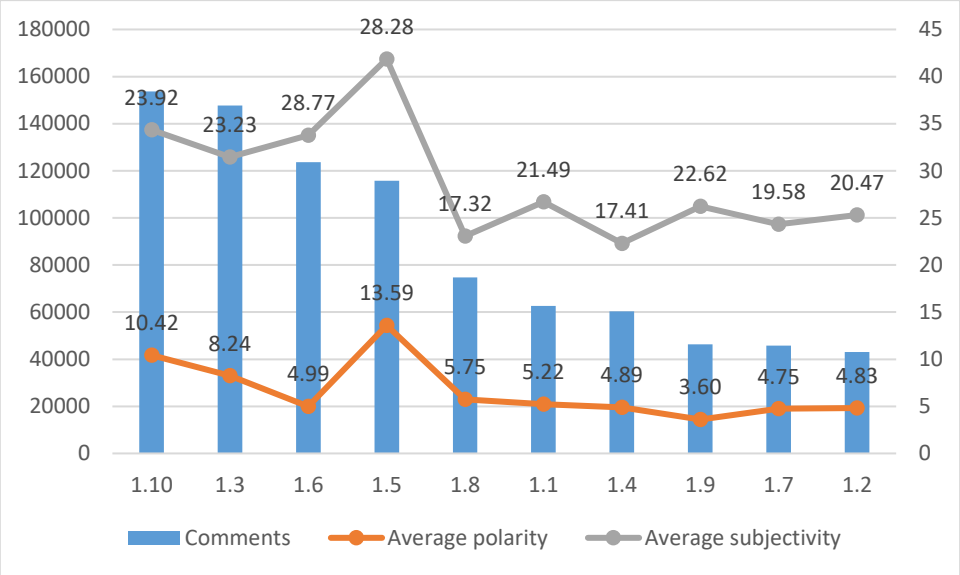


Source: compiled by authors based on TextBlob data

The top positions in terms of polarity and subjectivity were taken by six videos, posted by the YouTubers elrubiusOMG (1 video), TheWillyrex (1 video), Makiman131 (1 video), luzugames (the only channel with two videos in the polarity and subjectivity rankings) and sTaXxCraft (1 video).

Although no significant correlation was detected between comments and polarity/subjectivity, in a few cases the videos whose comments had higher polarity and subjectivity levels are also the ones with the most comments and "likes".

sTaXxCraft and luzugames have the highest polarity levels, with 16.08 and 12.15, respectively. The highest subjectivity level was found in the video by luzugames (28.96), followed by Makiman131 (24.53). The video by sTaXxCraft has the highest polarity level and the fourth highest subjectivity level. The video by luzugames has the second highest polarity level and the highest subjectivity level. However, there are no significant values for these videos in the interaction variables or in the relationship between them.

The videos on the Makiman131 and elChurches channels scored negative polarity values, suggesting the presence of negative and hostile comments generating debate and conflict in the conversation. It is worth noting that the video with the highest negative polarity level (-4.83, Makiman131) also rated the second highest subjectivity level (24.53), one of the lowest like-view ratios and the second highest percentage for the dislike-view ratio.

In relation to the tone of the social conversation (Q8), the results reflect low levels of polarity (5.28 points) and subjectivity (15.5 points). The participants display a low controversy profile with respect to the polarity and subjectivity of the comments as they barely pass the zero polarity levels with a high score of 19.9 points on a scale from -100 to 100, and a maximum subjectivity level of nearly 41 points in only one case and still below the scale average (0-100).

An analysis of the average score for each of the channels does not reveal any atypical or extreme values (i.e. maximum polarity and subjectivity) to determine any degree of subjectivity or polarity. There are four YT channels above the average for the whole sample, but the values obtained in these cases are not sufficient to cause extreme polarisation or subjectivity. The values are normalised by positioning the comments instead on the fringes of neutral tone and relative objectivity.

The videos with the highest polarity and subjectivity levels are found in the screen-sharing/collab., sit-down and vlog categories (Q9). The polarity and subjectivity levels of the comments do not reveal any relationship with the duration of the videos (Table 5).

Table 5. Types of videos with highest polarity and subjectivity levels

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| By video type | Ratio freq_actions_day/yout_viewCount | Duration | Subjectivity level | Polarity level | YT Channel |
|---|---|---|---|---|---|
| Screen-sharing/collab. | 17.464% | 00:25:02 | **>8 points* 16 videos/100=16%** | >22points* 13/100=13% | VEGETTA777, luzugames |
| Sit-down | 5.101% | 00:07:48 | | | Gymvirtual |
| Vlog | 1.248% | 00:11:17 | | | Makiman 131 |

**Source:** compiled by authors based on data from TextBlob

*The value corresponds to the third quartile, i.e. only 25% of the videos with the highest subjectivity and polarity levels are above 8 points in subjectivity and none are above 20 points, and in polarity 25% are above 22 points and only one has a score of 41 points.

No regular trend was found between the polarity and subjectivity levels of the comments and the time the videos were published (Q10). Finally, no pattern could be identified between the polarity and subjectivity levels of the comments posted on YT and the comments posted on Facebook (Q11).

## 4. Discussion and conclusions

Our analysis reveals a low level of interaction generated by the content of YouTubers in the sample studied. Comments represent the lowest figure of all. In our research we have not been able to confirm the assertions of Scolari and Fraticelli (2016), who claim that YouTubers frequently reply to comments on their videos and that the likelihood of responding is greater because the videos are expanded on hypermedia platforms like Twitter, Facebook or Instagram. The results show a low level of interaction on social networks in response to the videos, both on YT and on FB (Q1), with absolutely no replies by the YouTubers themselves (Q2 and Q3). In the user-user relationship, conversation is also minimal: on average, only 9.9% of the comments are replies to other comments (Q3). YT's social media tools distinguish it from television, yet they are underused by both YouTubers and their audiences. It would be useful in future research to examine how the low level of participation of YouTubers in comments influences the activity of their followers and whether there is a cause-effect relationship. In this preliminary exploration it has not been possible to consider this question.

As Madden, Ruthven and McMenemy (2013) also concluded, the topic matter of user comments is highly heterogeneous (Q4). In the case studied here, there is a notable number of comments that respond to a direct question or invitation made by the YouTuber in the video, a strategy to encourage user participation. The analysis of Weber (2013) is thus corroborated here, as the type of content and how it is narrated, especially direct appeals, affect participation and interactivity in the comments.

Expressing an emotion or an opinion and supplementing or clarifying information are the main motives behind commenting on content on social networks (Stroud, van Duyn & Peacock, 2016). According to our findings, comments were generally made to verbally express emotions, to respond to a direct appeal by the YouTuber, to praise the YouTuber or to comment on the most striking or interesting aspects of the video. These results expand on the motives limited to information seeking and entertainment indicated in the studies of Khan (2017). However, no direct relationship was found between the volume of comments received for YT videos and other interaction variables (Q5) like views, likes or subscribers, which was confirmed in the studies of Siersdorfer et al. (2010), Jamali & Rangwala (2009) and Lee, Moon & Salamatian (2010). The presence of video games as a topic in 80% of the sample may represent a limitation of the research, as the criterion chosen (channels with most subscribers and views) inadvertently resulted in a sample with a prominent presence of a single topic. It would be useful to procure more heterogeneous samples for future studies.

The polarity and subjectivity levels analysed are not dependent on the number of subscribers (Q6) or on any of the other content interaction variables (Q7). The absence of extreme levels of polarity or subjectivity identified here in response to Q8 coincides with the findings of Lee & Jang (2010) and Lee (2012), who demonstrated that user opinion was influenced by the comments previously posted

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by other users. Thus, the trend in the tone or style of the comments follows the pattern set by comments posted previously and read by other users before posting their own comment, resulting in a highly homeostatic and contagious phenomenon, in line with the findings of de Von-Sikorski & Hänelt (2016).

No significant relationships have been revealed between the polarity and subjectivity rates for the comments on the one hand and the duration of the video, type of video, time of publishing or interaction generated on additional platforms like Facebook (Q9, Q10 and Q11) on the other.

According to Cialdini (2001), comments on YouTuber channels exhibit: a medium level of commitment and consistency; minimal reciprocity; limited social proof; a marked reverence for the authority of the YouTuber; contained liking and pronounced scarcity, which increases the value of the replies chosen by the YouTuber.

In conclusion, interactivity based on commenting is a potential option used by only a small (almost incidental) proportion of the massive communities of users created around the top YouTuber channels. Clearly, the interactive potential of YouTuber channels is being underused. Moreover, YouTubers themselves, despite creating parallel profiles on other social networks, rarely participate in them either personally or through members of their team of collaborators. However, YouTubers do demonstrate an interest in the social conversation provoked by their videos through three actions: (1) making reference to selected comments in subsequent videos (mentioning user names or the content of the comments identified); (2) giving a "heart" to their favourite comments, facilitating the identification of their followers' most read comments; and (3) pinning comments to the top of a comments thread so that they are more visible and highlighted for other users. In relation to these last two actions, other users can only like comments to help maintain their visibility in the best positions in the thread. In this way, YouTubers or their collaborators respond to, manage and offer feedback on the comments made by their community.

Although it seems logical to assume that YouTubers would be focused on creating content and would feel incapable of replying to every comment made in their community, reciprocal interaction would lend greater authenticity and naturalness to the conversation generated by the content. YouTube allows creators to designate moderators who can participate in the conversation thread on their behalf, but this tool is rarely used. Following the social conversation constitutes a very useful source of information for YouTubers that can help them to secure the loyalty of their audience, correct mistakes, explore new topics of interest and adapt their content to the tastes of their community. YouTubers generate expectations related to the comments they will chose and respond to. This is a widespread practice that is confirmed by this study. We can therefore conclude that users interact mostly with each other in the comments section, while also using the opportunity to address and appeal directly to the YouTuber, but YouTubers interact with their audiences by means of new content. The two-way exchange is thus delayed in time as the social media response is offered in the form of a new video which will in turn generate a new social conversation, feeding the circuit of the virtual community on the basis of video sharing. Commenting activity is thus exploited and focused to keep the channel alive with new content. The comments serve a function of linking the different videos together in temporal succession. They also provide an element of novelty and surprise that keeps the channel active in the periods between the posting of new videos.

Comments are written text, and all written text has an emotional tone. Commenting is thus the richest of all possible forms of interaction on social networks because it includes the emotional expression inherent in liking/disliking, and involves an investment of time and effort (engagement) motivated by the content viewed, and its ultimate objective is to share, to document a reaction, to express an opinion, to contribute something or to request more information. Commenters seek to be answered—by other users, by the YouTubers themselves, or by someone on their team (moderators)—but they also seek to leave a record, a declaration that "I was here", watching this specific video. This particular objective has a meaning of its own, similar to the visitors' books of the non-digital world, where people can express the sensations elicited by what they have experienced, or to the initials in trees or the padlocks on bridges left by couples as a testimony to their relationship.

Although it results in abortive conversations, commenting constitutes rich and intriguing evidence of the fan phenomenon intrinsic to YouTuber communities.

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