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Original scientific paper

DESTINATION PROMOTIONAL VIDEOS ON YOUTUBE: ASSESSING AUDIENCE ENGAGEMENT

Monica CORONEL[a]

[a] Corvinus University of Budapest, Budapest, Hungary, monica.coronel@stud.uni-corvinus.hu

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Abstract

YouTube as a social media platform is used by both tourism practitioners and tourists for promoting or obtaining information about tourist destinations, thus it is paramount to use a method to assess such videos communication effectiveness. For such purpose, the study proposes a methodological approach to assess the positive and negative audience engagement of destination promotional videos (DPVs) posted on YouTube. To measure positive and negative audience engagement, four destination promotional videos about Budapest (Hungary) were selected. Previous models to measure engagement in social media were adapted and merged to suit YouTube. YouTube publicly available metrics (views, votes - likes/dislikes-, comments, and channel subscribers) were operationalised based on three dimensions: popularity, commitment and virality. Findings reveal that consumer-generated videos (CGVs) about Budapest produce a higher positive engagement than marketer-generated videos (MGVs). This study offers a methodological tool that can be easily employed by tourism practitioners and Destination Marketing Organisations (DMOs) to evaluate the marketing success of videos shared on YouTube. Moreover, this method may help practitioners from different fields to develop a clear strategy, optimize resources, reduce risk, evaluate competitors, and measure the impact of the content shared on YouTube.

Keywords: engagement, social media, promotional videos, YouTube, metrics, comments.

INTRODUCTION

Is my destination promotional video posted on YouTube effective? This often-raised question shows not only the importance of social media, and YouTube in particular, for destination marketing (Huertas et al., 2017; Tiago et al., 2019) but also the need to evaluate the performance of the content shared in the platforms. Social media platforms are often used for destination promotion, communication, and research (Leung et al., 2013); and have proven to influence consumers' decisions at every stage of the journey: pre-, on-site and post-trip (Volo & Irimiás, 2022). Tourist destination marketers are enthusiasts to promote their offerings on social media, and YouTube hosts marketer-generated videos (MGVs) and consumer-generated videos (CGVs) alike. The latter refers to the videos created independently by individuals or communities, while the former relates to videos created by Destination

Marketing Organisations (DMOs) (Lim et al., 2012; Muñiz & Schau, 2007). Given that CGVs sometimes resemble ads, they are considered unpaid marketing for tourist destinations (Muñiz & Schau, 2007). Although CGVs are unofficial sources of information, along with MGVs, they shape destination images and influence consumers' decision-making (Lim et al., 2012). YouTube's interface allows users -viewers- to express their preferences and appreciation for shared videos: they can like, dislike and/or comment on them. This interaction on social media between the user and the posted content is often referred to as 'audience engagement'.

As such, engagement is the result of previous cognitive and affective states (Hollebeek & Chen, 2014). Engagement is considered a 'tangible' process because it involves the audience's interactions (Buhalis, 2020; Vazquez, 2019) and thus can be assessed by tracking the audience's reactions. Engagement is the most popular indicator to evaluate the performance of social networks (Peters et al., 2013).

Social media content impacts many aspects of the tourism industry (Zeng & Gerritsen, 2014). Leung et al. (2013) claimed that an effective way to assess social media variables would be fruitful for tourism marketers and practitioners. However, one of the greatest challenges in developing and applying suitable metrics is the constant evolution and heterogeneity of social media platforms and metrics (Peters et al., 2013). Additionally, engagement can be positive or negative (Hollebeek & Chen, 2014; Villamediana-Pedrosa et al., 2019); therefore, it is paramount to develop an effective way to assess viewers' engagement (Zeng & Gerritsen, 2014).

Past studies have attempted to measure audience engagement with a specific focus on platforms or metrics. Studies on social networking platforms such as Twitter (Bonsón et al., 2016; Huertas et al., 2015), Facebook (Song et al., 2021; Villamediana-Pedrosa et al., 2019), and Instagram (Avila Campoverde & Ugalde, 2020) based their calculations mainly on votes (favourite, likes/dislikes), comments, and shares/retweets.

Surprisingly, YouTube has been scarcely studied in tourism despite its prominence in the Web 2.0. YouTube engagement has been measured in relation to corporate channels (Bonsón et al., 2014) and music videos (Liikkanen & Salovaara, 2015). In tourism, You Tube has been seen as a data source for video content analysis (Arora & Lata, 2020; Huertas et al., 2017; Reino & Hay, 2011; Tiago et al., 2019) or for collecting tourists' comments (Lim et al., 2012; Tussyadiah & Fesenmaier, 2009).

To fill this gap, the purpose of this exploratory study is to assess audience engagement of destination promotional videos (DPVs) posted on YouTube through a novel methodological

approach. The topic is relevant due to the increasing popularity of videos among tourists and potential tourists as reliable sources of information about tourist destinations and the increasing use of YouTube by tourism and marketing practitioners to promote their destinations. The main research question is: How to assess audience engagement of DPVs in YouTube? Drawing on past research (Bonsón et al., 2016; Bonsón & Ratkai, 2013; Villamediana-Pedrosa et al., 2019), this study investigates the positive and negative engagement of marketer-generated and consumer-generated DPVs through three dimensions: popularity, commitment, and virality.

Findings indicate that CGVs about Budapest produce a higher positive engagement than MGVs. Due to its easy applicability, the proposed method can be a helpful tool for scholars and practitioners in tourism when evaluating the performance and impact of YouTube videos. By this method, assessment of audience engagement can be done manually, with a small or medium sample size, and results can be obtained immediately. Furthermore, effective management of technologies and information leads to wiser decisions from both strategic and financial perspectives, bringing about competitive advantages for tourism organizations (Buhalis, 2020). In a broader context, assessing audience engagement of DPVs posted on YouTube helps to create a clear strategy, optimize resources, reduce risk, evaluate competitors, and measure the impact of the content shared on social media.

THEORETICAL BACKGROUND

Social media usage in the region

In recent years, social media has gained significance in several aspects of our lives. Social media are used for numerous purposes, which vary according to different factors such as nationality or age group (Dixon, 2022). Overall, Europeans use social media to send private messages, stay in touch with friends and family, comment on posts, follow people, post pictures and videos, and read the news (Dixon, 2022). By January 2023, there were 4.76 billion social media users worldwide (59.4% of the world population) (Petrosyan, 2023), with Europe representing 14.1% of global social media users (Chaffey, 2023). However, this share is expected to increase since Europe reports the highest rate of social network penetration in the world, with Northern Europe in the first place (83.6%), Western Europe in second (83.3%), followed by Southern Europe ranked third globally (76.7%) (Dixon, 2023).

When it comes to tourism, social media are widely used by DMOs and tourism promoters for marketing purposes (Leung et al., 2013). The adoption of different social networking sites by DMOs is an increasing tendency: all DMOs in the European Union have an official Facebook page (Stankov et al., 2018). A study in Switzerland unveiled that Facebook is the most popular social media platform among Swiss DMOs, followed by Twitter and YouTube (Milwood et al., 2013).

Assessing engagement in social media

Engagement is the action of generating thoughts, feelings, and behaviours (Hollebeek & Chen, 2014). Thus, engagement in social media comprises every form of feedback from the audience towards a post, expressed through different reactions (Karagür et al., 2021; Peters et al., 2013). However, there is no consensus on the way to calculate it. For example, engagement rate (ER) is calculated using different variables from one study to another:

(1) Engagement rate = [(sum of reactions/number of posts)/number of followers]*100 (Avila Campoverde & Ugalde, 2020)

(2) Engagement rate = sum of likes and comments/number of followers (Karagür et al., 2021)

In the first formula, the numerator represents the totality of interactions in the site or account (number of likes, shares, comments, retweets, and mentions) in a frame time, divided by the number of posts in the same frame time. The numerator of the second formula considers only likes and comments. The denominator is the same in both formulas and represents the number of fans or followers of the site or account. The followers count shows the size of the community, therefore, if the community grows and the number of interactions remains the same, the indicator will decrease.

Audience reactions have been widely used to assess the impact of social media communication. Tab. 1 evidences the variables and metrics used in different studies and focus on the advantages and disadvantages of applying these approaches. In most cases, the assessment approach is specific to a social network platform and relies on metrics that are not publicly available to researchers. This makes challenging the applicability and operationalisation of such models.

Table 1 Models to assess the impact of social media communication

Author(s), year	Variables	Metrics	Advantages	Disadvantages
Interactive Advertising Bureau (IAB), 2012 (cited in Castelló Martínez, 2013)	Awareness	number of followers/subscribers	-Identifies different levels of interaction of audience and the related metrics	-Some metrics are difficult to obtain as they are not publicly available i.e. number of clicks - Results can be difficult to interpret as it does not provide a reference for what can be considered a good performance
	Appreciation	number of comments number of likes		
	Action	number of clicks times a user has logged in		
	Advocacy	number of shares/ retweets number of mentions		
IAB, 2013 (cited in (Castelló Martínez, 2013)	Presence	number of followers/fans number of posts	- Renames the levels of interaction and set them in order, from the simplest i.e. presence, to the most complex i.e. suggestion	-Variables and metrics are not well defined as there are variables that have two different metrics
	Response	number of likes number of favourites		
	Generation	number of comments		
	Suggestion	number of shares/retweets		
Bonsón & Ratkai, 2013; Bonsón et al., 2016	Popularity	number of likes/ tweets favourite	-Defines three variables and the corresponding metrics	- Does not consider the negative reactions i.e. dislikes
	Commitment	number of comments/tweets commented		
	Virality	number of shares / tweets retweeted		
Villamediana -Pedrosa et al., 2019	Positive Popularity	number of like, love, haha, and wow reactions	-Takes into consideration all possible reactions -Differentiates positive from negative reactions	-Facebook-based -Formulas are difficult to interpret and apply to other social networks with different metrics
	Positive Commitment	number of positive comments		
	Adjustment to Positive Virality Index	number of shares		
	Negative Popularity	number of sad and angry reactions		
	Negative Commitment	number of negative comments		
	Adjustment to Negative Virality Index	number of shares		
Peters et al., 2013; Song et al., 2020	Lowest engagement level	likes	- Differentiates levels of engagement based on the easiness and required effort for the interaction	- Mainly descriptive - Does not allow a deeper analysis of the performance of the post
	Intermediate engagement level	comments		
	Highest engagement level	shares		

Source: Own compilation based on Bonsón and Ratkai (2013), Bonsón et al. (2016), Castelló Martínez (2013), Peters et al. (2013), Song et al. (2020), and Villamediana-Pedrosa et al. (2019).

The Interactive Advertising Bureau, IAB, Spain, proposed a "4As" model -later reinterpreted as "PRGS" - with some basic quantitative variables intended to measure the activity in social media (Castelló Martínez, 2013) (Tab. 1). Similarly, Bonsón and Ratkai (2013) developed a set of metrics to assess engagement on Facebook -then adapted to Twitter (Bonsón et al., 2016)- using three variables: popularity, commitment, and virality (Tab. 1). Audience reactions, however, are not always positive. Villamediana-Pedrosa et al. (2019) used the former variables -popularity, commitment, and virality- but distinguished a positive and a negative engagement on Facebook (Tab. 1). A positive engagement unfolds positive feedback: positive popularity (like, love, haha, and wow reactions) and positive commitment (positive comments). Conversely, negative engagement builds upon negative feedback: negative popularity (sad and angry reactions) and negative commitment (negative comments). In the case of shares, the authors proposed calculating an Adjustment to Positive Virality Index and an Adjustment to Negative Virality Index, respectively. Other studies have differentiated levels of engagement based on users' reactions: lowest level (like), intermediate level (comment), and highest level (share), taking into consideration the easiness and required effort (Peters et al., 2013; Song et al., 2021) (Tab. 1).

YouTube: A tourist ally

Social media are experiencing a steady growing in terms of users worldwide, accounting 4.62 billion social media users, which represents 58.4% of the world's total population (Kemp, 2022). Created in 2005, YouTube is the second world's most-used social platform, only after Facebook, and the biggest online video-sharing platform accounting more than 2 billion active users around the globe (Kemp, 2022; YouTube, 2021). In addition, YouTube registers the greatest total time spent and the highest average time per user among all social networking sites (Kemp, 2022). In Europe, the Eastern countries report the most significant number of YouTube users with 198.2 million, followed by Western Europe (165.2 million), Southern Europe (108.1 million), and Northern Europe (89.2 million) (Ecwid, 2022).

Users can upload an unlimited number of videos on YouTube. Videos can be watched, linked, and commented on by anyone, allowing direct interaction between the viewer and the content creator (Madden et al., 2013; Reino & Hay, 2011). As a result, YouTube has become the largest and the most accessible online video library in the world, regardless some doubts on its status as a video repository since some videos can also be easily removed (Kim, 2012).

In tourism, from the supply side, the adoption of social media marketing among tourism practitioners is steadily growing around the globe, being YouTube one of the most-used social networking sites by DMOs in the European Union (Stankov et al., 2018). As a result, destination promotional videos (DPVs) are widely found on YouTube nowadays (Leung et al., 2017) along with other video clips or spots promoting different tourism products i.e., accommodation establishments (Reino & Hay, 2011).

From the demand side, DPVs play a key role at every stage of the traveller's journey, before and during the visit as a source of travel inspiration, and after the trip evoking nostalgia and memories. In this context, YouTube has become a 'travel-hack hub', specially at the planning stage, by offering tips and advice for travellers through travel videos (Google, 2016). It has been proven that DPVs shared on YouTube stimulate imagination and increase the interest of potential travelers toward a tourist destination (Tussyadiah & Fesenmaier, 2009). Furthermore, YouTube allows users to share travel information, holiday experiences, and personal views by sharing videos or comments, thereby promoting the creation of travel communities (Tussyadiah & Fesenmaier, 2009).

Engagement in YouTube

YouTube's particularities differentiate this platform from other social media networks. YouTube interface enables active user participation through ratings (likes: thumbs-up; dislikes: thumbs-down) and other actions (share, save, subscribe, comment). YouTube can be differentiated from other social media platforms since its users can 'like' but also 'dislike' content. On Twitter or Instagram this action is not allowed. According to Liikkanen and Salovaara (2015), comments on YouTube tend to be generally positive, though negative comments trigger most responses; compared with Facebook, comments in YouTube seem less polite, less justified, and further off-topic.

Contrary to Facebook and Twitter, where content can be posted several times a day, YouTube users upload new content less frequently. This is because producing a video for YouTube demands more time, resources, and technical skills; in consequence, the interaction between viewers and content creators is also sporadic (Smith et al., 2012). The number of views from one video to another can vary greatly, from a few views to millions (Cheng et al., 2008). This difference in views can be influenced by the channel popularity and the time the video has been available on the platform. In fact, videos posted on channels with millions of

subscribers are prone to have more views. Similarly, videos that have been posted for a longer period of time are likely to have more views. Consequently, engagement on YouTube can be either positive or negative and should be calculated differently and accurately when it comes to feedback assessment.

On YouTube every action undertaken by the user is tracked, including every time a video is watched (view). As a result, valuable metadata can be collected through the platform. However, only a few pieces of data are made public since much of the data remains private for the channel or content owner. This is a considerable limitation for analysing engagement on YouTube. YouTube Studio, for instance, provides analytics and insights on the channel's performance, but it is a tool available only to the channel's owner. Moreover, YouTube Studio does not provide details on its methods. Additionally, YouTube Analytics API is a platform administered by Google, independent of the YouTube channel, which enables the channel owner to generate reports containing data concerning user activity, ad performance, or estimated revenue (Google Developers, 2021).

Researchers have attempted to unveil some performance indicators based on public traces and on YouTube metrics (Tab. 2). Video popularity is the most studied variable, along with channel popularity. Studies use different metrics; for instance, video popularity is based on the number of views (Cheng et al., 2008) or the number of comments (Chatzopoulou et al., 2010). Channel popularity comprises views per channel and number of subscribers (Bonsón et al., 2014). Other studies have proposed different methods to assess audience engagement in YouTube. For instance, Bonsón et al. (2014) used five variables to measure stakeholder engagement: views, likes, dislikes, comments and shares, which were then analysed through non-parametric test Kruskal-Wallis (Tab. 2). Findings revealed that higher channel activity (number of uploaded videos) leads to a higher visibility (number of subscribers); and that video content influences engagement. Liikkanen and Salovaara (2015) measured user engagement with YouTube music videos based on views, comments, and votes (likes/dislikes). Additionally, they employed three metrics given the difference among videos in absolute numbers: voting frequency (number of votes per thousand views), commenting frequency (comments per thousand views), and dislike proportion (share of negative votes). Eventually, the six metrics were analysed using a Multiple Analysis of Variance (MANOVA). The number of channel subscribers was not considered in this analysis.

Table 2 Selected studies on YouTube videos performance based on variables and metrics

Author(s), year	Variables	Metrics
Cheng et al., 2008	Popularity	number of views
Chatzopoulou et al., 2010	Popularity	number of views number of comments
Bonsón et al., 2014	Channel activity Channel popularity (visibility) Stakeholder engagement	number of uploaded videos number of subscribers number of views number of views number of votes (likes, dislikes) number of comments number of shares
Liikkanen & Salovaara, 2015	User engagement	number of views number of votes (likes, dislikes) number of comments voting frequency (number of votes per thousand views) commenting frequency (comments per thousand views) dislike proportion (share of negative votes)
Huertas et al., 2017	Interactivity and visibility	number of uploaded videos number of video views number of views per video number of votes (likes, dislikes) number of comments number of subscribers number of channel views

Source: Own compilation based on Bonsón et al. (2014), Chatzopoulou et al. (2010), Cheng et al. (2008), Huertas et al. (2017), and Liikkanen and Salovaara (2015).

Comments on YouTube videos represent a valuable data source and can reveal substantial information on viewers' opinions and perceptions about a destination (Tussyadiah & Fesenmaier, 2009). However, comments posted on social media are often numerous, and difficult to be fully read by both, users and researchers (Potthast & Becker, 2010). Given the plethora of information generated by comments, informatics-based solutions are often used for data analysis.

DATA AND METHODS

This study aims to assess the positive and negative engagement of MGVs and CGVs in videos shared on YouTube. Through purposive sampling, DPVs about Budapest were searched on YouTube using the following keyword combinations: 'Budapest + travel', 'Budapest + tourism' and 'Hungarian capital + tourism'. A sample of 26 DPVs was obtained and narrowed by applying some selection criteria (Tab. 3). Videos included in the sample had to:

(1) display promotional tourism content about Budapest -no other Hungarian cities or specific events.

(2) have been released before the study, pre-pandemic, between 2018 and 2019.

(3) have received at least one comment on YouTube

(4) be short (similar length)

Eventually, four DPVs were selected for analysis (Tab. 3). Although the sample is small, it is still optimal because it comprises videos with a wide range of ratios and metrics.

Table 3 Features of the destination promotional videos under scrutiny

Video title	Channel	Subscribers	Premiere	Duration	URL
1. Let us show you Budapest - Spice of Europe	Visit Hungary [Official DMO's video]	11,700	9 August 2018	0.30 min.	https://www.youtube.com/watch?v=rVrmzX1eiNc
2. Budapest – Spice of Europe – New image film	Visit Hungary [Official DMO's video]	11,700	18 October 2018	2.02 min.	https://www.youtube.com/watch?v=hlwjcWXG8cs
3. Budapest – the Best in travel	Private company's video [unactive channel]	100	29 July 2019	1.55 min.	https://www.youtube.com/watch?v=Cyg7CS1xIgU
4. Budapest: The Taste of Europe. Timelab & Havasi collaboration	Private company's video	344,000	29 July 2019	3.30 min.	https://www.youtube.com/watch?v=e10pVhxNOco&t=37s

Source: Own elaboration

To assess audience engagement with the selected DPVs, the following publicly available metrics were collected on 25th of March 2021: number of total views, total votes (likes/dislikes), total comments, channel subscribers, and release date of each video of the sample.

By adapting previous models (Bonsón et al., 2016; Bonsón & Ratkai, 2013; Villamediana-Pedrosa et al., 2019), positive and negative engagement with DPVs was assessed using three dimensions: popularity, commitment, and virality. Positive and negative popularity were based on likes and dislikes. To assess positive and negative commitment, sentiment analysis of comments was conducted. Comments were eventually categorised into positive, neutral, and negative. Since, neutral comments were irrelevant to the study, these were excluded. Virality was based on views (Tab. 4).

Positive Engagement = Positive Popularity + Positive Commitment + Positive Virality
Negative Engagement = Negative Popularity + Negative Commitment + Negative Virality

Table 4 Assessment of positive and negative engagement on YouTube posted videos

Dimension	Sign	Measure	Formula
Positive Popularity	PP1	Average number of likes per video	Number of likes/number of votes
	PP2	Positive popularity	[(PP1*number of subscribers)/actual views)]*100
Positive Commitment	PC1	Average number of positive comments per video	Number of positive comments/number of comments
	PC2	Positive commitment	[(PC1*number of subscribers)/actual views)]*100
Positive Virality	PV1	Adjusted positive virality per video	Actual views*[(PP2+PC2)/2]
	PV2	Positive virality	PV1/ number of subscribers
Negative Popularity	NP1	Average number of dislikes per video	Number of dislikes/number of votes
	NP2	Negative popularity	[(NP1*number of subscribers)/actual views)]*100
Negative Commitment	NC1	Average number of negative comments per video	Number of negative comments/number of comments
	NC2	Negative commitment	[(NC1*number of subscribers)/actual views)]*100
Negative Virality	NV1	Adjusted negative virality per video	Actual views*[(NP2+NC2)/2]
	NV2	Negative virality	NV1/ number of subscribers

Source: Own elaboration based on the methodology for the measurement of engagement on Facebook and Twitter proposed by Bonsón et al. (2016), Bonsón and Ratkai (2013), and Villamediana-Pedrosa et al. (2019).

One of the metrics proposed by the present study is the calculation of the 'actual views' of each video: Actual views= (#views -1 -#channel subscribers) / time it has been posted (in years).

According to the formula, from the number of views it is necessary to subtract one view belonging to the video creator, as a default, as well as the number of subscribers of the channel which are views for granted. The resulting number is divided by the time (in years) that the video has been available on the platform.

The community size (number of fans/followers) has been widely considered as a variable to measure engagement of social media platforms (Bonsón et al., 2016; Bonsón & Ratkai, 2013; Karagür et al., 2021; Villamediana-Pedrosa et al., 2019). Therefore, formulas to obtain the values of popularity, commitment and virality consider the equivalent to community size= number of subscribers, as well as the actual views per video (Tab. 4).

Due to the few comments on the first three DPVs (less than 40 comments per video), both comments and their replies were all computed. In contrast, video 4 had more comments (> 1,000); thus, only the top comments (including more than 20 likes) that generated more buzz or interactions were processed (65 comments in total). Replies to these comments were

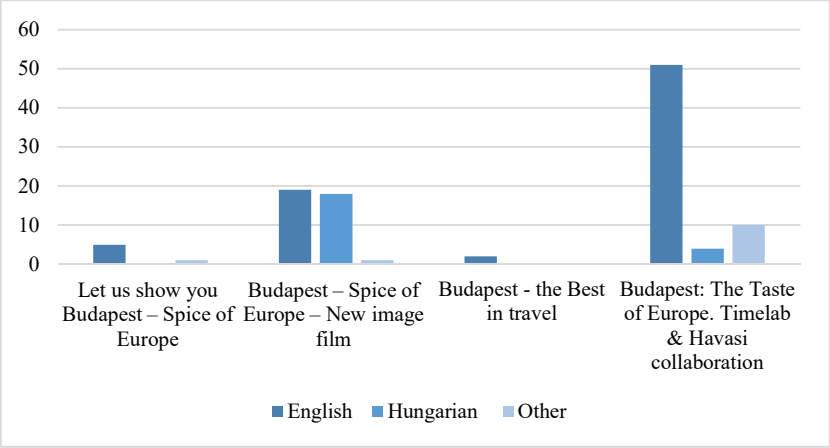
disregarded in this case. YouTube comments in other languages were translated into English with the help of Google Translate. Given the relatively small number of processed comments, the sentiment analysis was done manually to ensure an in-depth analysis of the users' opinions (Deori et al., 2021). Sentiment analysis aims to identify feelings in user's opinions, thus following a qualitative lexicon-based approach, text of comments was analysed, coded, and quantified (Gomes & Casais, 2018). Based on Gomes and Casais's (2018) categories of positive and negative feelings in YouTube user's comments, those comments that expressed: love, joy, empathy, hope, happiness, and gratitude towards the video or the destination were considered positive comments i.e., *"My God, charming city, absolutely stunning photography...!!!"*. Humour was excluded from positive feelings since it can be ambiguous. In contrast, comments expressing affliction, anguish, anxiety, frustration, humiliation, indifference, fear, hate, revulsion, sadness, and shame about the video or the destination were considered negative comments i.e., *"Very weak film, a lot of cuts, incomprehensible bindings, do not serve the desired purpose..."*. Comments neither relevant to the video or destination nor those that did not suit these categories were considered neutral, i.e., *"Stop at my channel thx..."*.

Since there are no positive or negative views, positive and negative virality was assessed through an adjusted virality (PV1, NV1). Positive and negative adjusted virality is based on each video's actual views and average popularity and commitment (Tab. 4).

RESULTS

Audience engagement of the four DPVs shared in YouTube was assessed by the analysis the publicly available metrics (views, comments, votes, subscribers, release date). The following variables were collected: video 1 (n= 87 votes; 6 comments; 9,833,501 views); video 2 (n= 611 votes; 38 comments; 66,524 views); video 3 (n=22 votes; 2 comments; 1,513 views); video 4 (n= 31,517 votes; 65 comments; 1,643,173 views). Data analysis revealed substantial differences among DPVs regarding audience engagement.

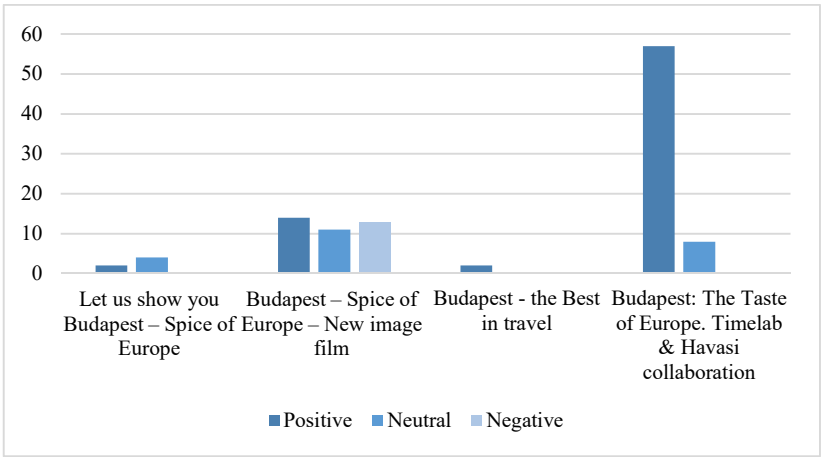
Figure 1 Language of the comments left in YouTube for the analysed DPVs



Source: Own elaboration

Fig. 1 shows that video 2 and video 4 were the most commented upon the four videos. Findings reveal that the MGV (Budapest -Spice of Europe- the new image film) was the most engaging for Hungarian viewers as 47% of the comments of this video were in Hungarian language.

Figure 2 Positive, negative and neutral comments on the analysed DPVs posted in YouTube



Source: Own elaboration

As illustrated by Fig. 2, both CGVs registered a larger number of positive comments, and a relatively small number of -or none- negative comments. In contrast, both marketer-generated videos had a significant number of negative comments (> or = to positive ones).

Table 5 Assessment of positive and negative engagement of the selected DPVs, based on YouTube metrics

	Positive popularity			**Positive commitment**			**Positive virality**			**Positive Engagement**
	Positive votes (likes)	PP1	PP2	Positively valenced comments	PC1	PC2	Actual views	PV1	PV2	**PP2+PC2+PV2**
Let us show you Budapest – Spice of Europe	84	0.97	0.30	2	1	0.31	3738224	1149827.6	98.28	98.9
Budapest – Spice of Europe – New image film	523	0.86	44.49	14	0.52	26.95	22509	804078.01	68.72	140.2
Budapest - the Best in travel	22	1	11.74	2	1	11.74	852	10000	100	123.5
Budapest: The Taste of Europe. Timelab & Havasi collaboration	31000	0.98	43.17	57	0.88	38.49	783798	32000931	93.03	174.7
	Negative popularity			**Negative commitment**			**Negative virality**			**Negative Engagement**
	Negative votes (dislikes)	NP1	NP2	Negative valenced comments	NC1	NC2	Actual views	NV1	NV2	**NP2+NC2+NV2**
Let us show you Budapest – Spice of Europe	3	0.03	0.01	0	0	0	3738224	20172	1.72	1.7
Budapest – Spice of Europe – New image film	88	0.14	7.49	13	0.48	25.03	22509	365922	31.28	63.8
Budapest - the Best in travel	0	0	0	0	0	0	852	0	0	0.0
Budapest: The Taste of Europe. Timelab & Havasi collaboration	517	0.02	0.72	0	0	0	783798	282146	0.82	1.5

Source: own calculation

Indicators of audience engagement to the DPVs are shown in Tab. 5. The results revealed that the CGV (Budapest – The Taste of Europe. Timelab & Havasi collaboration) had the highest level of positive engagement (x=174.7) compared to the other videos (v1= 98.9; v2= 140.2, v3=123.5), based on the calculation of positive popularity, commitment and virality. This high positive engagement responds to the high number of likes, positive comments and views; and suggests an overall good performance of the DPV.

Compared to the other three analysed videos, the MGV (Budapest -Spice of Europe-New image film), registered the highest level of negative engagement (x= 63.8) by calculating negative popularity, commitment, and virality (Tab. 5). It is important to highlight that the significant number of dislikes and negative comments to this official DPV, mainly from Hungarians, lead to a negative engagement as shown in Tab. 5.

DISCUSSION

The present study makes a significant methodological contribution: it proposes a novel method to assess audience engagement with videos posted on YouTube. Previous studies have

focused on user engagement on social networking sites based on metrics such as likes, shares, and comments (Bonsón et al., 2016; Bonsón and Ratkai, 2013; Villamediana-Pedrosa et al., 2019). This study adapted and merged previous models to suit YouTube-appropriate metrics, acknowledging the differences between YouTube and other social networking sites in terms of use and interface; it holds YouTube to be not only an important repository of DPVs, but also a helpful tool for practitioners to track and assess a variety of audiences' first-hand reactions to DPVs. It also confirms what Bonsón et al. (2014) claimed about the impact of video content on engagement: analysed comments mainly judge the video content.

A significant contribution is highlighting the relevance of negative engagement. Hollebeek and Chen (2014) claimed that very few studies had explored the negative valence of social media engagement; most studies focus on positive impact and engagement. The results reveal that negative engagement should be considered when thinking about rebranding a destination and using social media networks for the marketing campaign. The Budapest – Spice of Europe campaign, launched in 2018, was the first international tourism destination campaign of the Hungarian capital city. The aim was to design a fresh brand for Budapest, the most important destination of the country, with a campaign that cost more than 670,000 euros (Kovács, 2018). For the potential marketing value of social media, especially YouTube, the negative audience engagement is a particularly relevant effect that the Hungarian DMO should consider when evaluating the campaign's success.

Videos are preeminent among social media content not only in terms of cost and time of production but also in terms of effectiveness. DPVs play a key role in tourism for tourists and potential visitors before, during and after the trip. One of the effects that tourism specialists can expect from the method is that it helps to assess the effectiveness of promotional videos shared on YouTube. In this vein, assessing audience engagement of DPVs on YouTube will shed light on the real impact of the audio-visual materials produced by DMOs and tourism practitioners before being reproduced on other social networking sites and in other traditional media. This tool might become a key performance indicator and facilitate benchmarking by comparing different videos to determine the level of engagement. Additionally, users' comments, whether negative or positive, provide valuable insights for DMOs and tourism practitioners directly from the audience about their perceptions of the destination and video qualities. If a video shared on YouTube has many reactions, which means high audience engagement, it will likely go viral, which generates a high reach. These are two indicators of a successful tourism campaign.

This study, however, is not free from limitations. First, it employs YouTube metrics to assess DPVs' popularity, commitment, and adjusted virality, but YouTube does not allow access to individual commenters' demographics or identities. Nevertheless, using such metrics is justified for this exploratory study because these are the only publicly available statistics. Second, the application of the method requires the availability of all metrics i.e., videos with turn-off comments cannot be analysed. Third, it uses a limited number of videos. Future research could implement the proposed approach and test it with a larger sample. Finally, different versions of the same video can be uploaded deliberately by users to various YouTube channels, which can be another limitation of the study since the metrics can be fragmented.

One of the difficulties of using the methodology in tourism is that it fails to predict actual behavior; however, this method is highly valid to assess audience's engagement of promotional videos. This study did not specifically consider the impact of social media on the economy (Cui, 2021), thus, further research is needed to shed light on the real economic impact of social media platforms i.e., YouTube on destination marketing and the tourism industry.

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