

**What, how and when? Exploring the influence of firm-generated content on popularity in a tourism destination context**

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### **Abstract**

This paper focuses on the factors that determine the popularity of the destination content posted on social media by the destination marketing organizations (DMOs). Specifically, it aims to study the extent to which the destination image attributes included in content posted by DMOs (i.e. firm generated content or FGC) increase popularity. Moreover, three contextual characteristics of content are examined: (1) how it is developed, i.e. the degree of elaborateness; (2) how it is transmitted, i.e. the degree of vividness; and (3) when it is communicated, i.e. the day of publication. Empirical evidence demonstrates that content projecting certain emotions evoked by the tourist destination (affective image attributes) positively influences content popularity. However, content projecting the physical resources of the tourist site (cognitive image attributes) does not significantly influence popularity. It also confirms the positive lineal effect of vividness on popularity and the inverted U-shaped relationship between elaborateness and popularity. Finally, elaborateness, vividness, and day of publication moderate the influence of affective image attributes on content popularity.

**Keywords:** Firm-generated content, Destination image, Popularity, Vividness, Elaborateness, Day of publication.

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## **1. Introduction**

In tourism, social media are considered an emerging but extremely relevant phenomenon that has changed the landscape of marketing for tourist destinations and companies in the tourism sector (Zeng & Gerritsen, 2014). They allow places and organizations to communicate with their target groups, facilitate that destination stakeholders have a more influential voice in their communities, and include innovative methods of commercializing products and services (Nisar et al., 2020). Social media, such as social networks and online consumer reviews, therefore play an essential role in the tourist decision-making process by improving information about destinations and firms (Buhalis & Law, 2008; Leung et al., 2015; Xiang & Gretzel, 2010). They reduce the perceived risk related to the final decision and increase the value related to destination experiences (Ketter, 2016). In this context, new dynamics of information sharing on social media make individuals form a more accurate image of the destinations to be visited (Shafiee et al., 2016).

Destination image itself is one of the most examined fields in tourism research (Kladou & Mavragani, 2015). According to Herrero et al. (2017), perceived destination image can be considered as a set of associations, cognitive and affective in nature, tied by individuals to the tourist place. Concerning destination image formation, it is necessary to establish that the perceived image is based on multiple sources: for example, personal experience, traditional media advertising or, more recently, content posted by other tourists on social media, that is, user-generated content or UGC (Marine-Roig & Clavé, 2016). Social media are perceived by individuals as more authentic and trustworthy than other external sources (Fotis et al., 2012; Ketter, 2016; Leung et al., 2013), allowing people not only to obtain information but also to develop perceptions about destinations (Llodrá-Riera et al., 2015). Given their high effectiveness as a communication tool, social media are increasingly used by destination marketing organizations and other stakeholders in the destination, such as tourism firms or associations, with the aim of projecting certain attributes of a place to tourists, i.e. projected destination image (Hays et al., 2013; Kim et al., 2017; Leung et al., 2015).

Despite the large number of studies on tourist behavior and social media, two important gaps in research can be identified. First, most of the previous studies have focused on how UGC influences tourist decision-making processes (see, for example, Iglesias-Sánchez et al., 2020). There is still, however, very scarce empirical research about the overall impact of content posted by destination stakeholders, and specifically destination marketing organizations (DMOs), on social media, i.e. firm-generated content or FGC (De las Heras-Pedrosa et al., 2020). Second, most research on social media has addressed individual behaviors related to purchase and engagement (e.g. De Vries et al., 2012; Kim & Yang, 2017; Mariani et al., 2018). However, other key variables at the community level, such as content popularity in the field of social media (Quesenberry & Coolsen, 2019; Stephen & Galak 2012; Tellis et al., 2019; Xie & Lee, 2015), have been overlooked.

Given these circumstances, the present study adopts the heuristic-systematic approach of information processing and aims to examine the extent to which content posted on social

media by DMOs, as well as the contextual characteristics of that content, increase its popularity. Specifically, it analyzes which type of content related to the projected destination image (cognitive versus affective content) influence popularity. Moreover, in order to understand how this influence may vary depending on the contextual characteristics, three key characteristics of content are studied: (1) how it is developed, i.e. the degree of elaborateness; (2) how it is transmitted, i.e. the degree of vividness; and (3) when it is communicated, i.e. the day of publication. For its part, content popularity is a classic concept in the field of communication, defined as the audience of a message or the total amount of people that are exposed to it. It has been examined in traditional media such as television (Wang, 2011) and newspapers (Thurman, 2014), but has been hardly explored in social media (see, as an exception, Garcia-Rapp, 2017; Welbourne & Grant, 2016).

The present paper makes three main contributions to the destination marketing and management literature. First, it represents a key step in examining how cognitive and affective image attributes, that is, cognitive versus affective content about the destination, as they are projected by DMOs on social media, influence popularity. In the destination marketing and management field, FGC has scarcely been studied, but it constitutes an essential tool for the destination positioning. Second, the paper determines what contextual characteristics should be considered in FGC communication with the aim of improving performance. Third, in contrast to most previous studies, this paper examines content popularity as a final variable that objectively quantifies the collective success of FGC, going beyond individuals' interactions. In this way, it addresses content popularity according to the focus applied in traditional media and adapts its conceptualization to social media.

## **2. Literature review and research hypotheses**

### **2.1. Firm-generated content and popularity**

In recent years, the increasing relevance of social media has boosted research on the factors that determine the effectiveness of organizational communication (Smith et al., 2012). The newness of this topic has, however, led to the terminology employed being very diverse. In particular, organizational communication on social media has been addressed under several denominations: firm-to-consumer communication (De Vries et al., 2017), marketer-directed communication (Smith et al., 2012), organizational messages (Kim & Yang, 2017), FGC (Kumar et al., 2016), marketer-generated content (Goh et al., 2013; Smith et al., 2012), and branded content (Ashley & Tuten, 2015; Sabaté et al., 2014; Tafesse, 2015).

In accordance with Kumar et al. (2016, p.9), the present paper defines FGC as “firm-initiated marketing communications in its official social media pages,” which “includes both promotional and non-promotional messages that go beyond generating short-term sales to help strengthen the bond between customers and firms.” Specifically, this paper addresses FGC in tourism and focuses on the information published by destination marketing organizations and destination stakeholders on social media with the objective of increasing interactions with potential tourists (external target) and generating close ties with their community (internal target).

Although the literature related to FGC is still scarce, two lines of research can be identified: (1) studies that address user reactions to FGC within the social network, and (2) studies that address user behavior outside the social network derived from FGC. The first line of research is generally focused on Facebook and analyzes the interactions that the user makes within the social network in response to content published by the firm (De Vries et al., 2012; Kim & Yang, 2017; Tafesse, 2015; Wagner et al., 2017). Most of these studies explore likes, comments, and shares, considering that these interactions overall determine user engagement (Cvijikj & Michahelles, 2013; Kim & Yang, 2017; Tafesse, 2015; Wagner et al., 2017). The second line of research is more recent than the first and analyzes the main consequences of FGC outside the social network. Some of these works address how the published content affects awareness (Dabbous & Barakat, 2020), attitude (Wang et al., 2019), loyalty (Hajli et al., 2017) and commitment (Demiray & Burnaz, 2019). Other studies explore transactional and relational consequences derived from the user interactions with content (Kumar et al., 2016; Mochon et al., 2016; Yang et al., 2019).

Popularity emerges as a point of convergence between these two identified lines of research, determining why FGC has further effects. Studies have examined the total amount of users that are exposed to certain FGC in a social network and how far they have been impacted. Popularity precedes all users' reactions and behaviors derived from firm's communication, so it constitutes a necessary prior step to address any consequence within and outside the network. In this way, popularity has been generally analyzed in traditional media measuring the total audience of a message (Thurman, 2014; Wang, 2011). Nevertheless, new research on social networks has addressed popularity by considering exclusively what happens within the platform (De Vries et al., 2012; Kumar et al., 2016; Sabaté et al., 2014). This recent approach is more restricted than the traditional one because it ignores users who, after viewing content, may develop direct and indirect reactions outside the social network.

In order to address this limitation, and in accordance with the study of De Vries et al. (2017), content popularity is examined in this study through 'organic reach'. Organic reach combines viral reach, obtained from users' interactions about FGC, and non-viral reach, generated from content distributed by the brand. This variable is also consistent with the conceptualization of popularity proposed to study the success of videos posted on YouTube (Garcia-Rapp, 2017; Welbourne & Grant, 2016). Particularly, this variable is operationalized considering the total audience that has viewed the content: both casual viewers and loyal subscribers (Burgess, 2012). Popularity is related to several concepts such as visibility and reach (Jakobsson, 2010; Quesenberry & Coolsen, 2019), avoids exclusively referring to interactions in a specific online platform (such as likes, shares and comments in Facebook), and can be compared with results obtained in traditional media.

Moreover, the heuristic-systematic model of information processing (Chaiken, 1980) is used in this study to illustrate the underlying logic and mechanisms that explain content popularity. According to this model, which has been recently adopted in the field of social media (Lahuerta et al., 2020), people process information simultaneously in two ways: on the one hand, the systematic information processing implies that individuals tend to evaluate the information, and decide if they share it or not, considering the message content. On the other hand, it also establishes that individuals take into account the contextual elements or characteristics of that information. With this in mind, content popularity is explained in the present study considering not only the type of content about

the tourist destination (differentiating between cognitive content and affective content) posted on social media, but also three main contextual elements of that content: elaborateness, vividness, and day of publication.

## **2.2. Destination image projected in FGC: The influence of cognitive and affective image attributes on content popularity**

People participate in social media motivated by different types of potential benefits. In this sense, Uses and Gratifications Theory (Katz, 1959) is one of the most recurrent conceptual frameworks employed to examine individuals' motivations to use social media (Cvijikj & Michahelles, 2013; Jahn & Kunz, 2012). According to this theory, two main types of motivations should be studied: content gratifications and use experience gratifications. Park et al. (2009) emphasize that users' participation in brand social networks is related to their motivations to obtain entertainment and informative content. Similarly, Whiting and Williams (2013) consider these motivations and others such as communicatory and convenience utilities and social interactions. More recently, Lin et al. (2016) identify three types of gratifications obtained from Facebook by users: (a) emotional support and recognition, i.e. interpersonal utility; (b) social surveillance and networking, i.e. social utility; and (c) enjoyment, i.e. hedonic utility. In a similar way, Eginli and Tas (2018) apply the abovementioned theory and highlight four types of individual' motivations to use social networks: (a) sharing information; (b) developing social relations; (c) expressing themselves; and (d) achieving personal aims.

In addition to the literature about users' motivations to participate in social media, other studies have examined individuals' reactions in terms of dissemination of information depending on the nature of messages posted on social media (Ahn et al., 2016; Berger & Milkman, 2012; Kim & Johnson, 2016; Smith et al., 2012). In this line, Heimbach and Hinz (2016) point out that, even though rational content is more likely to be shared (through e-WOM), virality is also positively associated with emotional content. For their part, Cvijikj and Michahelles (2013) support the positive influence of rational content posted on Facebook based on the number of likes and comments made by users. However, they demonstrate that posts with emotional content generate a greater number of likes, comments, and shares. Moreover, Kim and Yang (2017) explain that the communication on Facebook based on rational content has a positive effect on users' commenting and sharing behaviors but not on the number of likes. In contrast, they evidence that emotional content positively influences the number of likes and sharing behavior, but not the number of comments. Finally, Lahuerta et al. (2020) highlight that the sentiments expressed in tweets are very important for brands in their objective of achieve a higher dissemination of their messages.

Literature about information dissemination, depending on the type of content, has been previously conducted from two points of view. On the one hand, according to past research on viral advertising, ads including emotional content about a brand (that is, content evoking strong affects or emotions such as surprise or joy) contribute to achieving a closer connection between the individual and the brand in comparison to those ads focused on rational messages (Micu & Plummer, 2010). In this respect, there is strong evidence for the higher influence of affective content on ad virality (Dafonte-Gómez et al., 2020). On the other hand, some previous studies have examined the communicability of social information (that is, information helping to build the society's beliefs) (Lyons

& Kashima, 2003). Since affects and emotions are mechanisms that regulate behaviors and social interactions (Adolphs, 2003), it has been established that social information arousing emotions is more communicable through different chains and, therefore, has more important consequences (Peters et al., 2009).

With this in mind, and with the aim of better understanding FGC in tourism, it is necessary to highlight that destinations are considered as a set of not only physical resources (e.g. landscapes, cultural heritage sites, or tourism infrastructures), but also experiences evoking emotions, such as surprise, excitement or pleasantness (Fernandez-Cavia et al., 2014; Hosany et al., 2006). These elements are incorporated into the destination brand identity, which is how the image of a destination is projected into the tourist mind (Marine-Roig, 2015). In terms of projected destination image, the physical resources of the place are considered cognitive image attributes, while the emotions evoked by the tourist site are considered affective image attributes. According to Qu et al. (2011), the most positive and differentiated image attributes should be emphasized in marketing communications to project a positive image of the destination to potential visitors, social media being key to achieve this strategic purpose (Huertas & Marine-Roig, 2016). Finally, several recent studies in tourism have examined how content popularity is influenced, in a different extent, by emotional and rational messages posted on social media (for example, Huertas & Marine-Roig, 2016; Pino et al., 2019; Villamediana et al., 2019a). However, conclusive empirical evidence has not been produced up to now.

In these circumstances, and considering the previous theoretical arguments about user motivation and information dissemination, this paper emphasizes the need to examine the impact of FGC on popularity distinguishing between: (a) content projecting the physical resources inherent to the destination (cognitive image attributes), and (b) content projecting the feelings or emotions evoked by the tourist site (affective image attributes). In line with Gretzel et al. (2006) and Wang et al. (2002), it is postulated that content generated by DMOs would help to reduce the perceived risk by tourists regarding their future destination experiences, mainly through cognitive image attributes (rational content). In addition, content from DMOs would create and reinforce the emotional value attached to the tourist site, mainly through the affective image attributes (emotional content). Therefore, with the purpose of identifying the different roles of cognitive and affective content on popularity, the following two hypotheses are proposed:

- H1.** Projecting cognitive image attributes of a destination through FGC have a positive influence on content popularity.
- H2.** Projecting affective image attributes of a destination through FGC have a positive influence on content popularity.

### **2.3. How FGC should be developed: The influence of elaborateness on content popularity**

The concept of elaborateness is usually defined as the length and depth of the information included in a message (Liu & Park, 2015; Racherla & Friske, 2012). Initially, it was studied in advertising research, which suggests that message length may affect outcome measures such as click-through rates either positively or negatively (Baltas 2003; Robinson et al., 2007). Subsequently, elaborateness has been widely examined in UGC in social media in general, and in online consumer reviews, highlighting this information

source as very trustworthy. Nevertheless, this concept has been rarely addressed in exploring FGC in the social media.

In the context of online consumer reviews, elaborateness represents the extensiveness and amount of information available, which helps an individual assess the attributes of a product (Gupta & Harris, 2010). Elaborateness promotes the incorporation of detailed information regarding how and where the product was purchased and employed (Park & Nicolau, 2015), and plays a powerful role in the persuasion process because it alleviates uncertainty about the product's quality (Johnson and Payne, 1985). Yang et al. (2017) observe that the length of reviews determines users' perception about their helpfulness. In this way, Mudambi and Schuff (2010) find that when the message included in an online consumer review is long, it positively influences customer purchase behavior (Shelat & Egger, 2002). Similarly, Chevalier and Mayzlin (2006) determine that the amount of textual information in reviews, measured by the word count, has a significant and positive correlation with overall sales of the reviewed product. In the field of social networks, Lahuerta-Otero et al. (2020) show a significant effect of users' tweets length on their popularity in terms of likes and retweets. Similarly, Mariani et al. (2016) find that the length of destinations' posts in Facebook significantly influences users' engagement.

By applying these findings to the context of FGC, elaborateness is defined as the amount of information included in a message that conditions the individual's retention (Hu et al., 2012). Specifically, elaborateness determines the way in which FGC influences the audience, conditioning the degree of popularity achieved. Nevertheless, unlike previous research, it is considered that the relationship between elaborateness and popularity could not be linear and monotonic, but it could depend on the degree of elaborateness. If a post includes a reduced number of words, individuals may not properly elaborate the message the firm intends to diffuse. An excessively brief post is difficult to understand and does not establish effective communication with users, so the higher the number of words employed, the higher the popularity is achieved. Nevertheless, there is an inflexion point after which the increase of the number of words in a message has a negative effect on user reactions. Overly long posts can also confuse and even prevent an individual from reading them. In this case, the greater elaborateness of FGC, the higher the effort needed to comprehend the message and, thus, the fewer the number of users that are influenced by content. In this respect, Mariani et al. (2018) demonstrate that the engagement obtained by tourism destinations' posts decreases with their length, as a general tendency. In order to combine these two apparent contradictory effects, the present paper establishes that the degree of elaborateness has an inverted U-shaped influence on content popularity, obtaining the maximum impact when an average number of words is employed in the message. This effect is consistent with the results obtained by Mariani et al. (2016) who observe that posts about 200 words obtain greater engagement than shorter and longer posts, in terms of users' likes, comments and shares. Consequently, the following hypothesis is proposed:

**H3.** Elaborateness of FGC has an inverted U-shaped influence on content popularity.

The degree of elaborateness can also moderate the impact of content, although the sense of this moderation has not been identified in the literature. When the post shows a clear objective for users, the optimal number of words required in the message should be fewer. In these cases, users are able to understand the content before they finish reading it, so they require shorter messages to optimize their understanding. On the one hand, if the post projects cognitive image attributes of the destination, overly long explanations can



cause the reflected attributes to go unnoticed by users. On the other hand, if the post projects affective image attributes of the destination, including a high number of words can weaken the emotions evoked by content. In both cases, unnecessary words blur FGC, because elaborateness has an inhibitor effect on the influence of content on popularity. In this way, the paper formulates two research questions related to the negative moderating effect of elaborateness regarding the influence of the cognitive and affective image attributes on content popularity:

**RQ1a.** Does elaborateness of FGC negatively moderate the influence of the cognitive image attributes of a destination on content popularity?

**RQ1b.** Does elaborateness of FGC negatively moderate the influence of the affective image attributes of a destination on content popularity?

## **2.4. How FGC should be communicated: The influence of vividness on content popularity**

The degree of vividness in social media is defined as the richness of a brand post's formal features that can stimulate different individuals' senses (De Vries et al., 2012). More specifically, the greater the vividness of a message – for example, a video in comparison to a picture or plain text – the more senses are stimulated by that content. In this way, Tafesse (2015) establishes that vividness contributes to making a virtual brand experience real and engaging.

Given the multimedia nature of the Internet and social media, previous research on vividness has focused on the effect that this variable has on consumers' engagement, referring to the interactions that the individual actively performs with content. Despite its relevance, it is necessary to highlight that the empirical evidence available on this issue is still inconclusive. De Vries et al. (2012) observe that high vividness in brand posts (e.g. 'video') is significantly and positively related to the number of likes but not to the number of comments. Similarly, Cvijikj and Michahelles (2013) point out that vividness of firm-generated posts positively influences consumer engagement in terms of likes and sharing behavior, while Sabaté et al. (2014) detect a positive effect of this variable on likes and comments in Facebook. In this way, Tafesse (2015) supports that high vividness in automotive brand posts causes more likes on Facebook but does not increase users' sharing behavior.

With respect specifically to tourism, Pino et al. (2019) establish that Facebook posts with videos are shared more than post without videos, although no effect is found on the number of likes and comments. Other authors show that including photos and videos elicits users' engagement on Facebook in terms of likes, shares, and comments (Mariani et al., 2016; Mariani et al., 2018). Finally, Villamediana et al. (2019a) partially support these empirical results, because they obtain that destination posts with videos in Facebook lead to higher positive users' engagement.

To sum up, the literature review on this topic demonstrates that most previous research on vividness focuses on individuals' reactions has related to likes, shares, and comments, but it has not analyzed the influence of this variable on content popularity. In trying to address this gap, this study considers that destination content is characterized by having

a clear experiential component, so in order to achieve greater popularity this content should activate individuals' senses and emotions. Users process the message with varying accuracy if it is communicated using text, photo, or video. Thus, using a certain format to project the destination image in FGC facilitates the transmission of the message and increases the audience obtained. In these circumstances, it is proposed that the degree of vividness influences content popularity and formulate the following hypothesis:

**H4.** The vividness of FGC has a positive influence on content popularity.

Moreover, vividness does not only directly influence content popularity but also conditions the effect of the information included in FGC: that is, the influence of cognitive and affective image attributes (Hernandez et al., 2015; Mandler et al., 2019). It is expected that with a more vivid presentation, the same attributes of the destination communicated in a post are shown in a richer and more stimulating way, giving place to a stronger impact on content popularity (De Vries et al., 2012; Tafesse, 2015). The moderating effect of vividness could, however, also be in the opposite direction due to its positive correlation with interactivity, a variable that has a negative impact on content popularity (Cvijikj & Michahelles, 2013). More interactive content demands more attention and engagement time (Tafesse, 2015), disturbing the flow in users' navigation in social media. In this regard, Cvijikj and Michahelles (2013) classify videos as highly vivid and interactive content that entails 'clicking on' or stopping the navigation, attracting less attention and cognitive processing. Similarly, Sabaté et al. (2014) suggest that images are easier to digest than videos, and they draw more attention and involve less cognitive processing. Accordingly, the same cognitive and affective attributes could have less impact on content popularity when FGC is more vivid (e.g. videos) because the message requires more attention from users, that have to interrupt their navigation to watch this type of content. In that case, the audience may skim the video. Consequently, the destination attributes communicated have a lower effect on content popularity. The present study adopts this latter logic, and formulates two research questions about the eventual negative moderating effect of vividness on the influence of the cognitive and affective image attributes on content popularity:

**RQ2a.** Does vividness of FGC negatively moderate the influence of the cognitive image attributes of a destination on content popularity?

**RQ2b.** Does vividness of FGC negatively moderate the influence of the affective image attributes of a destination on content popularity?

## **2.5. When FGC should be communicated: The influence of day of publication on content popularity**

Different authors have highlighted the relevance of taking timing and scheduling of FGC communication on Facebook into consideration, given that the publication of information at specific times and the individual online activity may influence the effectiveness of this FGC (Cvijikj & Michahelles, 2013; Sabaté et al., 2014). In this sense, Golder et al. (2007) state that most of the user activities on Facebook are undertaken during working days, and Rutz and Bucklin (2011) find that users' Internet-search activity is less on weekends than on weekdays, although click-through rates are similar across the week. Cvijikj and Michahelles (2013) also observe that posts generated on working days result in more user

comments on Facebook, but these posts do not generate more likes or greater sharing behavior. In contrast, other authors (Sabaté et al., 2014; Tafesse, 2015) do not find any significant effect of the day of publication on engagement with branded posts in terms of numbers of likes and comments obtained on Facebook.

In the specific field of tourism, Mariani et al. (2018) demonstrate that users' engagement in terms of likes, shares, and comments is higher for posts published on weekends by country destination marketing organizations, while Mariani et al. (2016) do not support this effect for posts published by regional organizations. Moreover, Villamediana et al. (2019b) identify the significant effect of the day of publication on the engagement of destination posts in Facebook, suggesting that Thursday and Saturday are the best days to post. Therefore, the evidence regarding the day-effect on popularity of FGC on social media for this field is inconclusive.

In order to generate new knowledge about this issue, and based on the rationale developed in previous literature, the present paper proposes that the day of FGC publication significantly influences its popularity. Specifically, it is established that users visit brand pages towards which they feel affinity more frequently on weekends because during these days they seek to disconnect from reality and can spend more time browsing for pleasure. In this way, it is proposed that, unlike to the employment of professional social networks that occurs on weekdays, users usually interact in brand pages related to tourism during their leisure time. These interactions mean the achievement of higher popularity for posts published on weekends (de Vries et al., 2012; Mariani et al., 2018; Villamediana et al., 2019b). Therefore, the following relationship is hypothesized:

**H5.** The day of FGC publication has a significant influence on content popularity, being higher on weekends.

In this respect, it is suggested that the same content may have different success depending on the day of publication; in other words, the day of publication moderates the influence of destination image attributes on content popularity. No previous research has examined this moderation, which can be explained based on the emotional salience effect (Li et al., 2020). This effect argues that individuals prefer to process emotional stimuli more than neutral ones and that they therefore devote more time to absorb them. In contrast to other products, tourism activities are highly emotional and hedonic. According to the emotional salience effect, therefore, individuals process information about Facebook posts of a tourist destination when they have more time available, which tends to occur at weekends. This is consistent with the escapism dimension of pre-visit tourism experience (Godovykh & Tasci, 2020; Tercia et al., 2020), which argues that information search about tourism destinations becomes a way to obtain hedonic rewards, such as evasion and relax. The time available for 'day-dreaming' about future tourism experiences is bigger on weekends, being interactions with Facebook posts published by a tourist destination more intense in those periods. Thus, the effect of affective and cognitive image attributes of a destination on content popularity is stronger on weekends than on weekdays. The following research questions are proposed:

**RQ3a.** Does the day of FGC publication moderate the influence of the cognitive image attributes of a destination on content popularity, making it higher on weekends?

**RQ3b.** Does the day of FGC publication moderate the influence of the affective image attributes of a destination on content popularity, making it higher on weekends?

Figure 1 presents the theoretical model of this research.

(Insert Figure 1)

### **3. Methodology**

#### **3.1. Dataset**

This paper is focused on snow tourism, which is defined as a combination of sport and nature tourism activities that allow individuals to enjoy different activities in resort businesses located in natural environments, specifically in high mountains (Cristobal-Fransi et al., 2017). Snow tourism is strategic for certain geographical areas away from large cities where the benefits generated by the third sector are key to their total gross domestic product. In particular, information was collected from the most important DMO managing snow tourism in the Pyrenees (the destination under investigation). The dataset compiles longitudinal information for posts published from October 2015 to April 2017 on the official firm Facebook page. During these months and still today, Facebook is the social network with the highest number of users and the highest level of traffic in this country (Clement, 2019), so several firms employ it to interact with their customers and create brand communities. Different authors have highlighted the interest of studying e-WOM on Facebook given that it is the most widespread social network worldwide (Goh et al., 2013; Kim & Johnson, 2016), and the main platform that firms use to communicate with consumers (De Vries et al., 2017). According to Cvijikj and Michahelles (2013, p. 846), “Facebook pages provide the largest number of engagement possibilities by direct interaction with the consumers through dialog.”

The database was initially composed of 1255 posts. Some posts were then deleted either because the link to access them did not work or because they were used during the measurement process (see the following subsection). The final data set thus contained 1150 posts and collected information obtained from different sources: human coders, Facebook insights, and an automated analysis tool named Linguistic Inquiry and Word Count (LIWC). This information was related to (1) the time when the post was published: date, day of the week, and hour-minute-second; (2) the content of the post: text, format, number of words, and message characteristics (i.e. projected destination image); and (3) the organic reach and user responses: the number of people who saw the post and reacted to it, liking, sharing, and commenting. The first column of the database gave access to the post through the link in which it was initially published. This link drove to the visualization of the whole content. The following section explains this information in more detail.

#### **3.2. Measures**

##### *3.2.1. Dependent variable: Popularity*

The concept of content popularity on the Internet has become very important from the emergence of Facebook in 2009. This social network has implemented a new sorting

order (or algorithm) for posts in news feeds based on their popularity instead of applying a reverse-chronological order. Facebook's algorithm decides which posts users see first and in what order users check their news feeds. Specifically, it establishes that popularity depends on aspects related to people reactions to firm's content – likes, comments, shares – (i.e. virality) and also on the quality of content and how people engaged with the firm page or with similar types of content in the past (i.e. non-virality).

Following the logic of Facebook, this paper operationalizes the popularity of a post through the variable organic reach. Organic reach reflects the number of people in the social network (fans and non-fans) who have seen content from a firm Facebook post through unpaid distribution (Quesenberry & Coolson, 2019; Stephen & Galak, 2012; Xie & Lee, 2015). It eliminates the results derived from the payment of a firm to a social network and collects communication derived from viral and non-viral reach (Facebook Insights, 2020). The value of organic reach of a post is generated during the first 28 days after the publication as people load and see it in their news feeds, or as they visit the firm's Facebook page. In other words, if a firm's post achieved an organic reach of 210,000 means that this number of individuals have viewed this post on their desktop, laptop and/or mobile phone. The application Facebook Insights then provides this value exclusively to the firm, so organic reach cannot be obtained by an external observer as occurs with likes, comments, and shares. This fact has resulted in organic reach having hardly been analyzed in the literature. Only two studies have dealt with measures related to organic reach. First, De Vries et al. (2017) used a variable named F2C impressions, based on the weekly number of viral impressions of a firm's posts on Facebook. Second, Quesenberry and Coolson (2019) theoretically established the relevance of virality and viral reach, analyzing shares of content as a proxy.

Empirical data of organic reach were directly collected from the DMO, the dataset was transformed into log specification in order to operationalize it for further analysis. Log-specification estimates the effect of a change in the independent variables on the percentage change in the dependent variable (Chevalier & Mayzlin, 2006).

### *3.2.2. Explanatory variables*

#### **Projected destination image: Cognitive and affective image attributes**

Given the diversity of content published on Facebook (compared to other eminently textual networks such as Twitter), human coders were proposed to quantify the extent to which each post projects the destination image attributes. Human coders classify content that cannot be measured by automated coding systems, such as the simultaneous employment of several formats (that is, text, images, photos, and videos), the inclusion of tools with meaning (e.g. emoticons or gifts), and the existence of certain characteristics in the message (e.g. sense of humor, anger, or irony). Human coders apply homogeneous criteria for every format, tool, and characteristic, which results in a holistic evaluation of each post. Five-point scales were initially proposed to measure the two dimensions of projected destination image, that is, cognitive and affective image attributes. Subsequently, three independent human coders, who were experts in social networks, gauged these measurement scales. Coders were unaware of the research hypotheses.

The evaluation process was divided into six phases (Berger & Milkman, 2012). The first four refer to the training received by coders and the procedure defining the measuring instruments. These phases were developed to avoid biases in the evaluations derived from subjectivity. The last two phases were the execution of the evaluation.

(1) A **meeting** was held, in which the firm's characteristics were examined and its activity on social media was shown. Then, from the existing literature on destination image, two of the project's researchers defined the two dimensions of the concept – i.e. cognitive and affective image attributes – and identified some important studies (e.g. Styliadis et al., 2017; see also Table 1). This information was provided to the three coders with the aim of establishing a common theoretical basis.

(2) A **content analysis** of the posts published on social networks by other tourism firms was developed in order to define a broad list of physical resources that reflect, to a greater or lesser extent, the cognitive image attributes of a destination. The four categories proposed by Styliadis et al. (2017) were then taken as reference points to classify the cognitive image attributes initially identified: natural characteristics, amenities, tourist attractions, and accessibility. These attributes were adapted to snow tourism in order to address the nuances and richness of each category in this context (Mariani et al., 2016; Miles & Huberman, 1984). Following previous studies, the affective image attributes of a destination was evaluated employing four categories: relaxing, pleasant, exciting, and lively (Baloglu & McCleary, 1999; Qu et al., 2011; San Martin & Rodriguez, 2008; Styliadis et al., 2017; see also Table 1).

(3) The researchers gave **assessment instructions to the coders** with the aim of evaluating the firm's posts. For the cognitive dimension, the coders were to rate each category with a dichotomous variable, allocating the value of 1 if at least one of the identified image attributes for each category was included, and the value of 0 if none of them appeared in the post. For the affective dimension, the coders were to assess whether the post could be described with each of the four categories that made up this dimension. The valuation for each attribute was also a dichotomous variable of 0 or 1.

(4) In order to make a **pretest of the assessment process**, a group session was held in which two of the project's researchers and the three coders participated. This session aimed to jointly evaluate some of the firm's posts. The coders were asked to individually evaluate 10 posts and to write down all the doubts and problems that had arisen during the process. Subsequently, they shared their evaluations for each category and discussed about them. The researchers gave coders feedback on their evaluation until it was clear that they understood the different ways in which the dimensions of the destination image could be reflected in each post (e.g. different content in videos, photos, images, etc). This phase was repeated for seven different batteries, each of them including 10 posts. With the aim of the coders to become familiar with the database, the last five batteries were analyzed using the definitive file and links for each post provided by Facebook Insights. In this way, the coders interacted with real posts and tools that afterwards they would have to employ during their evaluation. These posts were not included in the final database.

(5) The coders made a **complete evaluation of the posts** included in the final data set, providing a triangular view of the same content and reducing the problems of construct validity. The data set was divided into 300-post batteries to prevent the influence of fatigue on evaluations. Once each battery was completed, a meeting was held with the project researchers with the aim of remembering the meaning of the categories employed to measure the two dimensions, sharing the problems encountered, and finding solutions for common doubts. These sessions also served as a control to detect if there were

failures in the data obtained from Facebook Insights, such as duplicate posts. After finishing each year, preliminary analyses were made to check trends and means.

(6) When evaluations were completed, the two researchers conducted a **complete review of the scores**. They verified whether the scores coincided in all the categories of the two dimensions. In the few cases in which the coders' evaluations did not agree, two of the project's researchers analyzed the post and identified why the discrepancy had arisen. Then, researchers spoke with the three coders to hear the arguments justifying their scores and to promote a constructive discussion between them, trying to come to an agreement. In this way, initial discrepancies were eliminated and a consensus assessment was reached for all the posts. A unique score was thereby obtained for each cognitive/affective category of each post. It can be stated that inter-coder reliability coefficients are equal to 1.0. Next, the four categories identified for each dimension were joined, and 1 was added to the final score. Thus, the scales used were from 1 to 5 for both dimensions, 1 being a total absence of affective/cognitive image attributes in the post and 5 being a maximum presence of these attributes.

### **Elaborateness**

This variable was operationalized by the number of words included in each post (Chevalier & Mayzlin, 2006; Liu & Park, 2015; Racherla & Frisk, 2012), and measured with the LIWC tool. This tool analyzes computerized text files and relies on internal default dictionaries that define which words should be counted in the target file (Pennebaker et al., 2015). Once the number of words was measured, this variable was log-transformed due to its continuous nature.

### **Vividness**

This variable measured the format of content, being low (value 1) for text or link(s), medium (value 2) for photo(s) or image(s), and high (value 3) for video(s). In those cases where the post combines diverse formats, the highest possible value was assigned because it is considered that the most vivid format prevails over the rest. For instance, if the post includes text and photo, the value was 2, while if the post contains text, photo and video, the value was 3. This operationalization was applied by De Vries et al. (2012) and involves similar information to that examined by Sabaté et al. (2014).

The three coders measured this variable. Once the coders made their assessments, certain discrepancies were observed. It was detected that content reposted by the firm from the publications of other accounts obtained different evaluations. For example, in those posts in which the firm only included text, although the original post showed photo(s) or video(s), at least one coder assigned a score of 1 because the firm only included text, while the other(s) valued them at 2 or 3, respectively. After examining the discrepancies, it was concluded that they were not due to mistakes made during the measurement process but to different coders' perceptions of the vividness of the same content. These differences reflect the reality of users' perceptions in social media contexts, so it was decided to keep the three scores and calculate the average rating of the variable to continue with the analysis.

### **Day of publication**

Taking into account the data concerning day of publication provided by Facebook for each post, a dichotomous variable was calculated, in which 1 indicated that the post was published on weekend and 0 referred to the publication being made from Monday to Friday (Duan et al., 2008).

**Insert Table 1 about here**

### *3.2.3. Control variables*

#### **Year**

As previously explained, the overall data set collects post published by the firms from October 2015 to April 2017, that is, during two seasons: 2015–2016 and 2016–2017. This variable had a dichotomous nature and measured whether the post was published in 2015–2016 (value 1) or in 2016–2017 (value 2). In this way, it controlled the potential influence of the global economic situation and destination contingencies.

#### **Holidays**

Since the tourism activity is holiday-sensitive, the model included a variable that controls if the post was published during holidays (value 1) or not (value 0).

#### **Promotions**

This variable controlled if the post contains information about the firm's promotions (1 vs. 0). This kind of post encourages users to share the information and to actively participate in the firm Facebook page so it can affect popularity.

#### **Transactional focus**

This variable measured whether the post made an explicit call to purchase, which can increase popularity. Raters used an indicator variable to note those posts with transactional focus (value 1 versus value 0).

Finally, Tables 2 and 3 present descriptive statistics and correlations for variables included in the model.



Insert Tables 2 and 3 about here

## 4. Analysis and results

### 4.1. Estimations

Considering post  $j$ , Eq (1) shows the initial model proposed for examining the linear and quadratic effects of variables on popularity.

$$\begin{aligned} \text{Eq (1) } \text{Ln Popularity}_j = & \beta_0 + \beta_1 \text{Cognitive image attributes}_j + \beta_2 \text{Affective image attributes}_j \\ & + \beta_3 \text{Ln Elaborateness}_j + \beta_4 \text{Vividness}_j + \beta_5 \text{Day publication}_j \\ & + \beta_6 \text{Ln Elaborateness}_j^2 + \beta_7 \text{Year}_j + \beta_8 \text{Holidays}_j + \beta_9 \text{Promotions}_j \\ & + \beta_{10} \text{Transactional Focus}_j + \varepsilon_j, \end{aligned}$$

Where

*Ln Popularity<sub>j</sub>*: Logarithmic value of the number of people who have visualized post  $j$  through unpaid distribution; *Cognitive image attributes<sub>j</sub>*: Cognitive dimension rating of destination image in post  $j$ ; *Affective image attributes<sub>j</sub>*: Affective dimension rating of destination image in post  $j$ ; *Ln Elaborateness<sub>j</sub>*: Logarithmic value of the number of words included in post  $j$ ; *Vividness<sub>j</sub>*: Vividness of content included in post  $j$ ; *Day publication<sub>j</sub>*: Dummy variable that indicates whether post  $j$  was published on weekend (value 1) or not (value 0); *Year<sub>j</sub>*: Variable that indicates the year in which post  $j$  was published (1 vs. 2); *Holidays<sub>j</sub>*: Dummy variable that indicates if the post was published during a holiday period (1 vs. 0); *Promotions<sub>j</sub>*: Dummy variable that indicates if the post contains information about a firm's promotion (1 vs. 0); *Transactional Focus<sub>j</sub>*: Dummy variable that indicates if the post makes a call to purchase (1 vs. 0).

In order to develop the analyses of the model, the following steps were followed. First, the potential existence of heteroskedastic was demonstrated through the Breusch-Pagan test (1980). Findings corroborated that the regression disturbances were related to independent variables:  $\chi^2 = 411.287$ ;  $p < 0.00$ . Second, due to the longitudinal nature of the data set, an autocorrelation test was made. Specifically, the robust form of the Cumby-test was applied (Cumby & Huizinga, 1992) and this verified the existence of autocorrelation:  $\chi^2 = 24.706$ ;  $p < 0.00$ . Third, multicollinearity problems were not encountered because the variance inflation factors (VIFs) were less than 5.0.

Fourth, endogeneity that may be present in the proposed model and potentially bias estimations (e.g. Chintagunta et al., 2010) was addressed. The model is subject to dynamic endogeneity because popularity of post  $j$ , as the dependent variable, is determined by its past realizations, popularity <sub>$j-p$</sub>  ( $p \geq 1$ ). This kind of endogeneity is related to the effect of unobservable firm characteristics that influence permanently and similarly to the popularity achieved by posts published at different moments. The popularity of a new post is therefore determined not only by its own content, but also by the importance of these characteristics that is summarized in the popularity obtained by previous posts. In order to solve this problem, a dynamic model was proposed and the lagged dependent variable as an additional explanatory variable was introduced. This

variable reduces the specification bias and increases the explanatory power of the model (Baum et al., 2000). Thus, Eq (2) shows the regression including the dynamic effect.

$$\begin{aligned} \text{Eq (2) } \ln \text{ Popularity}_{jt} = & \beta_0 + \beta_1 \text{ Cognitive image attributes}_{jt} + \beta_2 \text{ Affective image attributes}_{jt} \\ & + \beta_3 \ln \text{ Elaborateness}_{jt} + \beta_4 \text{ Vividness}_{jt} + \beta_5 \text{ Day publication}_{jt} \\ & + \beta_6 \ln \text{ Elaborateness}_{jt}^2 + \beta_7 \text{ Year}_{jt} + \beta_8 \text{ Holidays}_{jt} + \beta_9 \text{ Promotions}_{jt} \\ & + \beta_{10} \text{ Transactional Focus}_{jt} + \beta_{11} \ln \text{ Popularity}_{j,t-1} + \epsilon_{jt}, \end{aligned}$$

Finally, Eq (3) presents the full model, which contains linear and quadratic effects already included in Eq (2), and the moderating effects between cognitive and affective dimensions and the moderator variables (that is, elaborateness, vividness, and day of publication).

$$\begin{aligned} \text{Eq (3) } \ln \text{ Popularity}_{jt} = & \beta_0 + \beta_1 \text{ Cognitive image attributes}_{jt} + \beta_2 \text{ Affective image attributes}_{jt} \\ & + \beta_3 \ln \text{ Elaborateness}_{jt} + \beta_4 \text{ Vividness}_{jt} + \beta_5 \text{ Day publication}_{jt} \\ & + \beta_6 \ln \text{ Elaborateness}_{jt}^2 + \beta_7 \text{ Year}_{jt} + \beta_8 \text{ Holidays}_{jt} + \beta_9 \text{ Promotions}_{jt} \\ & + \beta_{10} \text{ Transactional Focus}_{jt} + \beta_{11} \ln \text{ Popularity}_{j,t-1} \\ & + \beta_{12}(\text{Cognitive}_{jt} * \ln \text{ Elaborateness}_{jt}) + \beta_{13}(\text{Affective}_{jt} * \ln \text{ Elaborateness}_{jt}) \\ & + \beta_{14}(\text{Cognitive}_{jt} * \text{Vividness}_{jt}) + \beta_{15}(\text{Affective}_{jt} * \text{Vividness}_{jt}) \\ & + \beta_{16}(\text{Cognitive}_{jt} * \text{Day}_{jt}) + \beta_{17}(\text{Affective}_{jt} * \text{Day}_{jt}) \\ & + \beta_{17}(\text{Cognitive}_{jt} * \ln \text{ Elaborateness}_{jt}^2) \\ & + \beta_{18}(\text{Affective}_{jt} * \ln \text{ Elaborateness}_{jt}^2) + \epsilon_{jt} \end{aligned}$$

Generalized method of moments (GMM) regression analysis with standard errors that are robust to heteroskedastic and autocorrelation was employed. This also accounted for potential issues of endogeneity (Roodmand, 2006).

## 4.2. Model estimations and results

As established by Aiken and West (1991) and Aydin et al. (2005), the procedure that was followed to test the hypotheses and research questions comprised two steps. First, Models I and II examined the linear and quadratic effects (i.e. cognitive image attributes, affective image attributes, elaborateness, vividness, and day of publication) on popularity. Second, Models III and IV presented the full model and included the moderating effects. Moderating effects were calculated from the multiplication of predictor and moderator variables, which were centered before they were entered into the analyses. These models enabled the detection of whether elaborateness, vividness, and day of publication were pure moderator or quasi-moderator variables. Pure moderator variables only interact with

the predictor, but they do not directly influence the dependent variable, while quasi-moderator variables not only interact with the predictor variable, but they are also predictor variables (Yoon, 2009). Table 4 shows GMM estimates with all the models presenting heteroscedasticity and autocorrelation consistent (HAC) estimates.

Model I exclusively shows the linear effects, while Model II also introduces the quadratic effect of elaborateness, necessary to test H3. Results demonstrate that the influence of affective image attributes is significant ( $\beta_2 = 0.161$ ;  $p < 0.01$ ), but the effect of cognitive image attributes is rejected ( $\beta_1 = -0.031$ ;  $p > 0.05$ ) (see Table 4). Therefore, H2 is verified but H1 is rejected. Elaborateness has a positive and significant linear term ( $\beta_3 = 3.029$ ;  $p < 0.01$ ) and a negative and significant squared term ( $\beta_6 = -0.422$ ;  $p < 0.01$ ) on popularity, which indicates an inverted U-shaped effect. For its part, vividness influences popularity in a positive and significant way ( $\beta_4 = 1.424$ ;  $p < 0.01$ ). Thus, H4 is supported. The day of publication does not have a significant influence ( $\beta_5 = -0.111$ ;  $p > 0.05$ ), so H5 is rejected. The lag of popularity is not significant ( $\beta_{11} = 0.229$ ;  $p > 0.05$ ). Overall, the explanatory power of the model is 27.9%. Thus, this model verifies the significant and linear influences of affective image attributes and vividness on popularity, and it reveals the quadratic effect of elaborateness.

It should be remembered that a significant quadratic term only provides the necessary condition for the existence of an inverted U-shaped effect but not a sufficient one. Sufficient conditions are given by Lind and Mehlum's (2010) three-step procedure and the U-test. First, the quadratic term is significant and of the expected sign, as explained above for the results of regressions. Second, the slopes are significantly steep at both ends of the data range (if only one slope is significant, the relationship might be one half of a U-shape, which can be more parsimoniously fitted by a logarithmic or exponential function: see Haans et al., 2016): XL at the low end of the X-range is positive and significant (XL= 2.43;  $p < 0.01$ ), while XH is negative and significant (XH=-1.40;  $p < 0.01$ ). Third, the turning point is located within the data range: 3.58. The third condition is also verified by estimating the 95 percent confidence interval with the method proposed by Fieller (1954) to account for the finite sample and to correct for biases caused by departure from normality (3.31-4.27). Finally, the U-test confirms the significance of the curvilinear influence (U-test= 2.75;  $p < 0.01$ ). Consequently, H3 is supported.

Model III includes the linear and quadratic effects as well as the linear moderating effects. Model IV adds the quadratic moderating effects of elaborateness (see Table 4). First, it verifies the same linear and quadratic effects shown in Model II. Affective image attributes, elaborateness, and vividness significantly influence popularity, while the effects of cognitive image attributes and day of publication are not important. The only change in the results previously obtained by Model II is the increase of the influence made by affective image attributes on popularity ( $\beta_2 = 0.836$ ;  $p < 0.01$ ). The dynamic effect continues not to be relevant in explaining the popularity of a post. It is highlighted that the effects of moderating variables on cognitive image attributes are not significant in any case, so the answers to RQ1a, RQ2a and RQ3a are negative. On the contrary, the effects of moderating variables on affective image attributes are all verified, so the answers to RQ1b, RQ2b, and RQ3b are positive. In this way, vividness ( $\beta_{15} = -0.365$ ;  $p < 0.01$ ) and day of publication ( $\beta_{17} = 0.231$ ;  $p < 0.01$ ) significantly condition the influence of affective image attributes on popularity. The negative moderating effect of elaborateness on affective image attributes is also supported because the linear term of the U-shaped effect significantly changes ( $\beta_{13} = -0.390$ ;  $p < 0.01$ ). This moderating effect modifies the turning point of the relationship but does not generate any change on the shape of the curve; thus,

no flattening or steepening occurs (see Haans et al., 2016). Due to the value of  $\beta_{13}$  is negative, it can be stated that the significance of the moderation makes the turning point move to the left regarding its initial position (from 3.59, before including the moderating effect, to 3.58, after including it).

The explanatory power of Model IV is 29.2%. Therefore, it can be concluded that the popularity of a post is a function of which content is communicated, how content is developed, how content is communicated, and when content is published.

**Insert Table 4 about here**

## **5. Discussion**

The present research sheds light on the influence of destination image attributes projected in FGC in achieving content popularity. These findings show that affective image attributes have a greater effect on content popularity than cognitive image attributes. Projecting the image of the destination through relaxing, pleasant, exciting, and lively posts therefore promotes their diffusion. Posts focused on the physical resources of the destination, such as the environment, infrastructure or accessibility, do not, however, influence popularity. This is regardless of the day of publication, the format used or the degree of elaborateness. These results are consistent with previous research that confirms that affective content has a strong effect on users' engagement and interactions with FGC posted on Facebook (Cvijikj & Michahelles, 2013; Huertas & Marine-Roig, 2016). In the specific case of tourist sites, Huertas and Marine-Roig (2016) highlight the importance of communicating emotional values of territories, given the experiential nature of tourism. In contrast, cognitive content does not motivate tourists and does not condition the positioning of the destination. The lack of significance of cognitive attributes on content popularity could be because users of the firm Facebook page are previously interested in the destination, so they would have a huge amount of information and know its main characteristics. For this reason, those posts projecting the physical resources of the destination (that is, cognitive image attributes), hardly provide any usefulness to users and have little impact on their intentions to spread them.

Findings demonstrate that elaborateness has an inverted-U-shaped effect on popularity. This kind of effect reveals the not convenience of developing more (or less) elaborated content, because the greatest influence of this variable on popularity is achieved with average values. If the firm develops too simple content, it can occur that the message is not adequately exposed. Users perceive that the firm's posts are under elaborated or have low value, so they consider that they should not share them and, therefore, do not carry out any dissemination. Similarly, if the firm publishes too complex content, users should invest high efforts to comprehend the underlying message. Users do not feel comfortable transmitting these posts, so their dissemination is low. Therefore, the popularity of a post will be low both if the level elaborateness is too low and if it is too high. The popularity of a post obtains its maximum value (turning point of the curve) when the message is understandable and elaborateness is medium. Moreover, this variable has a negative moderating effect on affective image attributes, decreasing its original influence. Therefore, if a post projects an affective image of the destination, the length of the message should be shorter in order to make a greater influence on users and maximize the content popularity.

The findings also suggest that vividness has a significant and positive influence on content popularity. Those posts with a greater vividness, including resources as videos, obtain higher popularity in comparison to other posts that exclusively contain text. Greater vividness implies greater stimulation of individual senses (Cvijikj & Michahelles, 2013; De Vries et al., 2012), so it may enhance the salience of a brand post and could increase users' propensity to look at the content of the message (Sabaté et al., 2014). Moreover, the moderating effect of vividness on affective image attributes is negative, so the former inhibits the influence of the latter. This finding means that those posts focused on affective attributes have less effect on popularity if it has a higher degree of vividness (i.e. videos) compared to other with a lower degree (i.e. text and images), due to probably the complexity of transmitting the message with certain formats. In particular, watching videos requires more attention and engagement time (Tafesse, 2015), disturbing the flow in users' navigation in social media (Cvijikj & Michahelles, 2013), so they are more difficult to process than images and lead to lower degrees of information processing (Sabaté et al., 2014).

The findings also show that the direct effect of day of publication on content popularity is significant when moderating effects are not considered, but disappears when the latter effects are taken into account. These findings show the importance of taking into account moderating effects to better understand the effect of contextual elements or characteristics on popularity. Thus, publishing a post at a specific moment of time does not modify its popularity per se. This is because the post needs to include some specific content for users to transmit it. In this way, the day of publication only exerts a significant and positive moderating effect if the post projects affective image attributes of the destination. This effect is probably because most users disconnect and relax during weekends, seeking to consume pleasant, vibrant and exciting content about the destination. If the post does not address this type of content, the day of publication is indifferent. On the contrary, if the post projects an affective image, its effect on popularity will be greater if it is published on weekends, because, at that moment, users are especially permeable to this type of content.

Finally, elaborateness and vividness act as quasi-moderators in the relationship between destination image content and popularity because they do not only moderate the relationship between affective image attributes and popularity but also act as predictors. Meanwhile, the day of publication plays a pure moderator role, because its effect is carried out exclusively through the interaction with affective image attributes.

## **6. Conclusions**

### **6.1. Theoretical implications**

The present study represents a new step in understanding the role of FGC, an issue that has attracted a lot of attention from practitioners and researchers during the last decade but one that has been very scarcely studied in tourism (Hays et al., 2013; Mariani et al., 2018). In particular, the extant literature on FGC has focused mainly on businesses, analyzing the type and format of content published by firms on their corporate profiles in social media (De Vries et al., 2017; Kim & Yang, 2017). However, past research on the impact of content generated by DMOs on social media is much more limited. Accordingly, this paper contributes to the academic literature by identifying the main

variables that should be considered to better understand the popularity of the content posted by DMOs.

Focused on Facebook, which is the most widespread social network worldwide, this study adopts the heuristic-systematic model of information processing to provide new knowledge about how content popularity is developed in the field of social media in tourism. On the one hand, this theoretical model includes the type of content about the tourist destination posted on social media such as a critical element in the systematic information processing. On the other hand, it postulates that three contextual characteristics of content play a key role in the heuristic information processing: the elaborateness (Liu & Park, 2015; Racherla & Friske, 2012); the vividness (Mariani et al., 2018; Pino et al., 2019; Villamediana et al., 2019a); and the day of publication (Cvijikj & Michahelles, 2013; Mariani et al., 2018). In contrast to these studies, the present paper proposes that the way content is presented – i.e. elaborateness and vividness – and the day of publication not only have a direct impact on popularity, but they also moderate the effects of the cognitive and affective image attributes on popularity. In addition, the present study considers a measure of popularity that has scarcely been used but that provides higher benefits than traditional measures of engagement in social media: organic reach (Quesenberry & Coolson, 2019; Stephen & Galak 2012; Xie & Lee, 2015). Organic reach, which collects the communication achieved due to viralization, is a real indicator of content popularity in social media. However, because Facebook Insight exclusively provides the organic reach to the firm, this instrument has barely been used by previous studies (De Vries et al., 2017; Quesenberry & Coolson, 2019).

Regarding the role of the destination image attributes projected in FGC, empirical evidence suggests that affective attributes positively influence content popularity, but cognitive attributes do not have a significant effect. These results shed new light on the controversy concerning this topic in the literature, corroborating the views of authors who point out the relevance of emotional content (Huertas & Marine-Roig, 2016; Pino et al., 2019) and rebutting those who highlight the effectiveness of cognitive content (Villamediana et al., 2019a). Thus, FGC based on emotional attributes or cues seems to be more effective in the case of tourism destinations. Moreover, results confirm the positive direct effect of vividness on popularity, that is, the more vivid the content is by using images and videos, the greater the popularity of the content posted. This result supports the evidence obtained in previous research on vividness (Mariani et al., 2018; Pino et al., 2019). The empirical results also demonstrate that elaborateness has an inverted-U-shaped effect on popularity, which goes beyond linear relationships previously tested in consumer review platforms (Liu & Park, 2015; Racherla & Friske, 2012).

To conclude, the present study confirms that elaborateness and vividness, as well as the day of publication, moderate the influence of affective image attributes on content popularity. In particular, the moderating effects of elaborateness and vividness on affective content are significant but negative. These results are very relevant because most previous research has focused on the direct effect of elaborateness (Lahuerta-Otero et al., 2020; Mariani et al., 2016, 2018) and vividness (De Vries et al., 2012; Sabaté et al., 2014) on popularity or engagement. However, it does not take into account the moderating effect of these variables on the impact of cognitive and affective image attributes. In particular, the evidence obtained in the present study shows that excessive elaboration of FGC in terms of number of words, as well as the use of videos instead of images or text, decrease the effect of affective attributes on content popularity. More elaborate and vivid content

demands more attention from users and decreases their information processing (Sabaté et al., 2014; Tafesse, 2015), leading to a weaker effect of affective content on popularity.

Similarly, the results confirm a moderating effect of the day of publication on the influence of affective image attributes on content popularity, while the direct effect of the day of publication blurs when the moderating effect is tested. Thus, considering the moderating effects of content contextual characteristics is very important to understand their influence on popularity.

Finally, no significant moderating effects were found with respect to the influence of cognitive image attributes on popularity. This implies that cognitive image attributes do not exert a relevant influence on popularity, independently of content elaborateness, vividness and the day of publication. These results are of special relevance given the scarce evidence in the literature on FGC and UGC concerning the moderating effects of these variables.

## **6.2. Managerial contributions**

This research also has relevant implications for practitioners, specifically for DMOs. Particularly, findings can be of great help for the design and scheduling of FGC to maximize its popularity. The popularity of content developed to promote a destination can be boosted by focusing on affective and emotional cues more than on cognitive image attributes. Highlighting attributes related to the emotions evoked by the tourist destination (i.e. relaxing, pleasant, exciting, and lively) thus contributes to the viralization of the FGC, whereas talking about physical resources (i.e. natural characteristics, amenities, tourist attractions, and accessibility) is much less efficient for this purpose. In other words, affective image attributes achieve greater collective popularity in social media and therefore increase the number of contacts that organizations establish with target customers.

Additionally, managers should consider that elaborateness and popularity have an inverted-U-shaped relationship, so both low and high elaboration of the message can decrease the number of people impacted by the post. Managers should find the correct balance concerning the elaborateness of FGC, trying to design not only easy but also well-elaborated content that makes users feel comfortable during their interactions. Moreover, managers should take into account that elaborateness has a negative moderating effect on the relationship between affective image attributes and popularity.

Regarding vividness, empirical results lead to recommending the use of pictures and photos in the design of FGC, rather than just text or videos. In particular, while including pictures and photos in the post increases content popularity, using very vivid content such as videos may lead to a weaker influence of the affective image attributes on popularity. Even though destination promotion usually requires a combination of different types of audiovisual resources, managers should be aware that affective content based on videos compels users to make an excessive effort to understand it, therefore not achieving a high impact on popularity. It is especially important to determine what degree of vividness is required by different types of content in order to maximize its diffusion and to contribute to the firm's communication objectives more effectively.

Finally, regarding the scheduling of FGC over the course of a week, empirical results show that affective content generates greater popularity if it is published on the weekend rather than on weekdays. Destination promotion usually implies posting FGC seven days a week, but managers should be aware of the effect of the day of publication to maximize the impact of affective image attributes on popularity.

### **6.3. Limitations and further research**

This study has some limitations that should be considered in future research in order to enrich the knowledge about the topic under investigation. On the one hand, empirical research has been carried out for a specific destination and, more concretely, in the context of a DMO promoting snow tourism in that tourist site. This may have conditioned findings; future studies should thus examine how valid the theoretical model is for other type of destinations such as, for example, rural, health, or cultural tourism destinations. On the other hand, it would be advisable to collect data over a longer period to examine the dynamic nature of the relationships among the different variables or factors determining the popularity of the content posted on social media by destination marketing organizations and/or destination stakeholders.

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**Table 1**  
Variables

Variable	Values		References	Source
<b>Cognitive image attributes (4 items)</b>	<i>Categories:</i>	<i>Attributes that may be included</i>	Beerli and Martin (2004), Chen and Tsai (2007), San Martin and Rodriguez (2008), Stylidis et al. (2017), and Wang and Hsu (2010)	Human coders
	Natural characteristics/ Environment (0-1)	Scenic beauty, Climate, Mountain, Landscapes, Nature, and Outdoors		
	Amenities / Tourist infrastructure (0-1)	Restaurants, Hotels, Bars, Accommodation, Shopping facilities, and Service quality		
	Attractions of the destination (0-1)	Cultural attractions, sports, and tourist activities		
	Accessibility/ Supporting infrastructure (0-1)	Infrastructure, Access, Transportation, Chairlifts, and Miles of ski tracks.		
<b>Affective image attributes (4 items)</b>	<i>Categories:</i> Relaxing (0-1) Pleasant (0-1) Exciting (0-1) Lively (0-1)		Baloglu and McCleary (1999), Qu et al. (2011), San Martin and Rodriguez (2008), and Stylidis et al. (2017)	Human coders
<b>Elaborateness</b>	0-∞		Chevalier and Mayzlin (2006), Liu and Park (2015), and Racherla and Frisk (2012)	Textual analysis (LIWC)
<b>Vividness</b>	1. Text; 2.- Photos or images; 3.- Videos		De Vries et al. (2012) and Sabaté et al. (2014)	Human coders
<b>Day of publication</b>	0. Published on midweek; 1.- Published on weekend		Duan et al. (2008)	Facebook analytics
<b>Year</b>	1.- Year 2015-16; 2.- 2016-17			Facebook analytics
<b>Holidays</b>	1.- Published on holidays; 0.- Non-published on holidays		De Vries et al. (2017)	Facebook analytics and Human coders
<b>Promotions</b>	1.- Promotion; 0.- Non-promotion		De Vries et al. (2017)	Human coders
<b>Transactional focus</b>	1.- The post includes an explicit call to purchase; 0.- The post does not talk about purchases.			Human coders
<b>Popularity</b>	0-∞		De Vries et al. (2017) and Quesenberry and Coolson (2019)	Facebook analytics

**Table 2.**

Descriptive of explanatory variables

	Mean	Standard deviation	Min	Max
<b>Cognitive image attributes</b>	2.57	0.877	1	5
<b>Affective image attributes</b>	2.53	0.788	1	5
<b>Elaborateness</b>	34.59	24.810	1	189
<b>Vividness</b>	2.18	0.387	1	3
<b>Day of publication</b>	0.34	0.474	0	1

**Table 3.**

Correlations

	Cognitive image attributes	Affective image attributes	Elaborateness	Vividness	Day of publication	Popularity
<b>Cognitive image attributes</b>	1					
<b>Affective image attributes</b>	0.464***	1				
<b>Elaborateness</b>	0.0254	0.028	1			
<b>Vividness</b>	0.063***	0.066**	0.064**	1		
<b>Day of publication</b>	-0.002	-0.051*	-0.130***	-0.051*	1	
<b>Popularity</b>	-0.027	-0.050*	-0.009	0.332***	0.067**	1

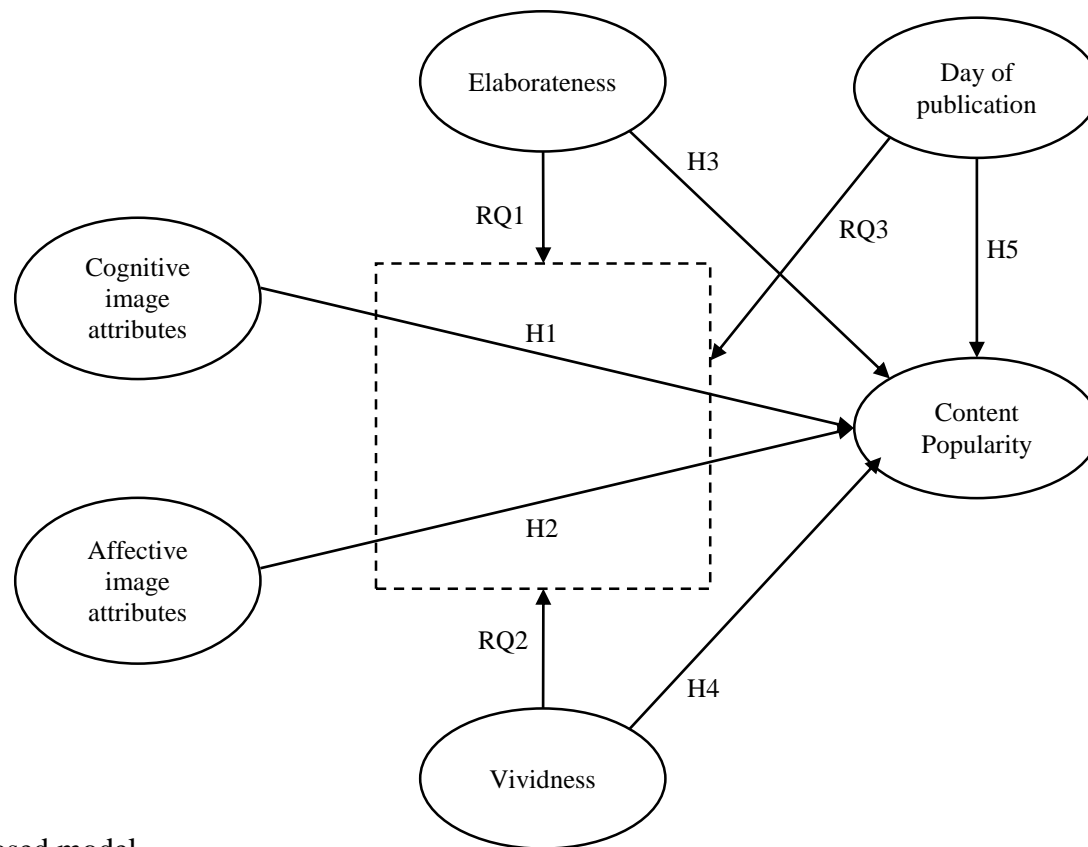
**Table 4.**

Results

	<b>Model I:</b>			<b>Model II:</b>			<b>Model III:</b>			<b>Model IV:</b>		
	<b>Linear effects</b>			<b>Linear and quadratic effects</b>			<b>Linear effects, quadratic effects and linear moderating effects</b>			<b>Linear effects, quadratic effects, linear moderating effects, and quadratic moderating effects</b>		
	<b>Coef.</b>	<b>HAC Std. Error</b>	<b>P</b>	<b>Coef.</b>	<b>HAC Std. Error</b>	<b>p</b>	<b>Coef.</b>	<b>HAC Std. Error</b>	<b>p</b>	<b>Coef.</b>	<b>HAC Std. Error</b>	<b>p</b>
<i>Linear effects:</i>												
<b>Cognitive image attributes</b>	-0.036	0.069	0.602	-0.031	0.068	0.644	-0.068	0.079	0.393	-0.100	0.091	0.270
<b>Affective image attributes</b>	0.168***	0.056	0.002	0.161***	0.052	0.002	0.873***	0.219	0.000	0.836***	0.229	0.000
<b>Elaborateness</b>	0.329***	0.087	0.000	3.029***	0.673	0.000	3.014***	0.746	0.000	3.023***	0.701	0.000
<b>Vividness</b>	1.437***	0.432	0.001	1.424***	0.418	0.001	1.468***	0.416	0.000	1.472***	0.415	0.000
<b>Day of publication</b>	-0.179***	0.065	0.006	-0.111*	0.059	0.058	-0.113	0.078	0.150	-0.114	0.075	0.132
<i>Quadratic effect:</i>												
<b>Elabor. squared</b>				-0.422***	0.109	0.000	-0.420***	0.122	0.001	-0.422***	0.114	0.000
<i>Moderating effects:</i>												
<b>Cognitive*Elaborateness</b>							0.109***	0.038	0.004	-0.030	0.164	0.854
<b>Affective*Elaborateness</b>							-0.219***	0.059	0.000	-0.390**	0.177	0.028
<b>Cognitive*Vividness</b>							0.032	0.041	0.443	0.038	0.043	0.38
<b>Affective*Vividness</b>							-0.369***	0.098	0.000	-0.365***	0.101	0.000
<b>Cognitive*Day</b>							-0.101	0.083	0.224	-0.101	0.081	0.209

<b>Affective*Day</b>							0.242***	0.069	0.000	0.231***	0.068	0.001
<b>Cognitive*Elabor. squared</b>										0.043	0.045	0.336
<b>Affective* Elabor. squared</b>										0.059	0.056	0.292
<i>Dynamic effect</i>												
<b>Lag-1 Popularity</b>	0.266*	0.159	0.096	0.229	0.159	0.150	0.207	0.153	0.175	0.207	0.152	0.175
<i>Control variables</i>												
<b>Year</b>	-0.133	0.175	0.446	-0.115	0.168	0.495	-0.102	0.161	0.526	-0.097	0.159	0.543
<b>Holidays</b>	-0.096	0.13	0.464	-0.123	0.112	0.274	-0.109	0.105	0.297	-0.109	0.105	0.300
<b>Promotions</b>	0.779***	0.13	0.000	0.683***	0.104	0.000	0.700***	0.085	0.000	0.703***	0.086	0.000
<b>Transactional focus</b>	0.199**	0.089	0.026	0.192**	0.082	0.02	0.194**	0.093	0.038	0.198**	0.092	0.031
<b>Constant</b>	2.659**	1.046	0.011	-1.087	1.122	0.333	-2.666*	1.587	0.093	-2.504	1.586	0.114
<b>Wald chi<sup>2</sup> (d.f.)</b>	5238.56 (10)			4643.35 (11)			7135.84 (17)			7780.93 (19)		
<b>Adjusted R<sup>2</sup></b>	0.252			0.279			0.291			0.292		

Significance levels: \*\*\*p<0.01, \*\*p<0.05, two tailed tests.



**Fig. 1.** Proposed model

### **Authorship statements**

Blanca Hernández-Ortega: Conceptualization, Formal analysis, Supervision, Investigation, Software, Validation, Writing - original draft, writing- review & editing.

Héctor San Martín: Conceptualization, Funding acquisition, Investigation, Writing - original draft, writing- review & editing.

Ángel Herrero: Conceptualization, Funding acquisition, Investigation, Writing - original draft, writing- review & editing.

José L. Franco: Conceptualization, Data curation, Methodology, Resources, Validation.