

Article

Digital Landscapes: Analyzing the Impact of Facebook Communication on User Engagement with Romanian Ecotourism Destinations

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Abstract: In the rapidly evolving digital landscape, the use of social media, particularly Facebook, by destination management organizations (DMOs) for promoting tourism destinations has become increasingly significant. However, the particularities of using this powerful tool in promoting ecotourism destinations have not been sufficiently debated in the literature. To fill this gap, the present study brings a new perspective with the aim of understanding how the Facebook communication strategies of ecotourism destinations in Romania affect user reactions. This research was based on secondary data obtained by examining Facebook posts from seven Romanian ecotourism destinations during a period of six months. The initial step was to analyze the Facebook posts of the selected destinations and to extract major themes present in the posted content. These posts are categorized into themes such as nature, leisure, culture, and hospitality, providing a comprehensive view of the content strategy adopted by these destinations. The findings reveal that posts related to culture and nature are predominant and receive higher user interactions in the form of likes, comments, and shares. Most user reactions were expressed in the form of likes, while the number of comments and shares was quite modest. The analysis of factors influencing user reactions reveals that only the number of posts has a significant impact. Moreover, the post content and post format do not have a significant influence on users' reactions to destinations' posted content on Facebook. This study concludes that for the effective online promotion of ecotourism destinations, DMOs should focus on increasing the number and frequency of posts, and on creating content that aligns with audience preferences, particularly emphasizing the main features of the destination. These insights are crucial for DMOs in strategizing their online communication to enhance user reactions and promote their destinations effectively in the competitive sphere of global tourism.

Keywords: ecotourism marketing; social media interaction; Facebook content analysis; destination management organizations; user reactions



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1. Introduction

In the context of a dramatic growth of Web 2.0, social media has completely changed how tourist destinations communicate online in recent decades [1]. Social media platforms are usually classified into social networks (e.g., Facebook), professional networks (e.g., LinkedIn), video-sharing websites (e.g., YouTube), picture-sharing platforms (e.g., Flickr), social bookmarks (e.g., Delicious, Digg), review websites (e.g., TripAdvisor), wikis (e.g., Wikipedia), microblogging (e.g., Twitter), blogs (e.g., Blogger), and user forums [2,3]. Within social media, Facebook is the most used social network, with 3.05 billion monthly active users in September 2023 [4]. Roughly, 37.6% of the world's total population uses Facebook each month, placing it first in among the world's most 'active' social media platforms [5].

Social media is becoming more and more relevant as a destination marketing tool, and accordingly must be effectively managed by destination management organizations

(DMOs) looking to create a sustainable competitive advantage for their destinations within the competitive arena of global tourism [6]. DMOs at local level need to pay attention to how they use social media, as this can play a crucial role in effectively promoting and marketing a tourist destination in a global context, characterized by hyper-competition among places [7,8]. According to some scholars [9], social media extends the marketing environments of DMOs by enabling them to reach, persuade, and attract potential tourists as well as shape their experiences [10]. Therefore, many DMOs have begun to use social media, primarily Facebook, in their communications, due to the importance of these platforms as marketing and communication tools [10,11]. However, many tourist destinations lack the expertise to effectively manage these platforms to reach their target audiences and to understand what information to provide or what communications tactics to use [3].

Although there are several studies that have analyzed the importance of social media for destination marketing purposes [2,7,12–14], they have generally focused on traditional tourism activities carried out in different countries and contexts. To the best of the authors' knowledge, the literature debating the role of social media in promoting ecotourism destinations is poor. Thus, this shortage could be considered a specific gap in the existing literature, which should be filled by finding ways in which social media marketing strategies could be applied and adapted to ecotourism destinations. Such an initiative becomes necessary if we consider the distinctive features of ecotourism, such as the dominant importance of landscapes and natural attractions, alongside local traditions and other cultural peculiarities. Moreover, it is essential to extend the geographical scope of the existing literature and to spotlight the distinctive features of marketing dynamics in Romanian ecotourism destinations. This differentiation highlights the innovative angle of our research, offering novel insights into the utilization of social media for enhancing Romania's attractiveness as an ecotourism destination. Therefore, we aimed to fill this gap by conducting a study focused on the content posted on Facebook by DMOs from Romanian ecotourism destinations. This specific angle is not widely covered in the existing research, especially considering the unique challenges and characteristics of ecotourism destinations. In the context of increasing competition among these destinations worldwide, it becomes crucial to promote ecotourism through digital marketing strategies and boost awareness through destination image development [15]. DMOs that use social media marketing to portray a realistic and culturally relevant ecotourism experience are more likely to engage tourists and provide positive outcomes from the experience [9]. In the case of ecotourism destinations, it may be challenging to carry out such an analysis due to the complex variety of tangible and intangible entities that represent them and provide leisure activities, education, and recreation [16]. More specifically, in ecotourism destinations, the social media content must be tailored, considering that the touring experience takes place within a natural environment, and is directly linked to environmental features [17].

The message and format of social media content posted by ecotourism destinations' DMOs imply continuous activity to establish and maintain constant interaction with the target audience [18]. This raises the question of the practicality and effectiveness of social media activities carried out by DMOs and the need to assess the results of their social media communications [3,10]. Moreover, it takes more than the DMO's mere presence on social media to enhance traveler intentions and promote the destination's image [19]. Social media may become a tactical tool for gaining a holistic comprehension of the visitor experience [20]. To tackle this challenge, users should be encouraged to interact with the social media content posted by DMOs [12]. In this context, the term 'engagement' refers to the process of interactions within and among groups [21]. By attaining users' online engagement, DMOs can promote the dynamic creation and evolution of the destination's brand and image, which can result in a continuous feedback process [22].

This paper focuses on the setting of ecotourism in Romania because this form of tourism has grown significantly in this country in the last decade, evolving from isolated ecotourism programs proposed by local/national tour operators to integrated ecotourism destinations [23], which are developed through strategic partnerships (between govern-

mental authorities, local communities, and private investors) and promoted through the efforts of local or national (eco) tourism associations [24]. The Association of Ecotourism in Romania (AER) is the main organization that created the framework and implemented most initiatives for the development and promotion of ecotourism in the country. In addition, there are several non-governmental organizations (NGOs) that are aiming to sustain the development of ecotourism at the local or regional level including DMOs (e.g., Țara Dornelor Ecotourism Association, Retezat Tourism Association, and Mioritics). Grasping the opportunity of promoting ecotourism destinations on social media, seven DMOs have created dedicated pages on Facebook. However, there are significant differences between these pages both from a quantitative (e.g., number of fans and number of posts) and a qualitative perspective (e.g., type of posted content: picture/link/video; the mention of ecotourism activities).

Therefore, this study seeks to analyze the content posted on Facebook by DMOs managing Romanian ecotourism destinations and to determine which posts elicit, on average, more reactions and, as a result, more user–destination interaction. For this purpose, the following research objectives were formulated:

O1: To analyze the content of the Facebook posts made by Romanian ecotourism destinations.

O2: To identify user reactions to the content posted by Romanian ecotourism destinations on Facebook.

O3: To determine the main factors that influence user reactions to the messages posted by Romanian ecotourism destinations on Facebook.

A graphical diagram illustrating the research question and research objectives is presented in Figure 1.

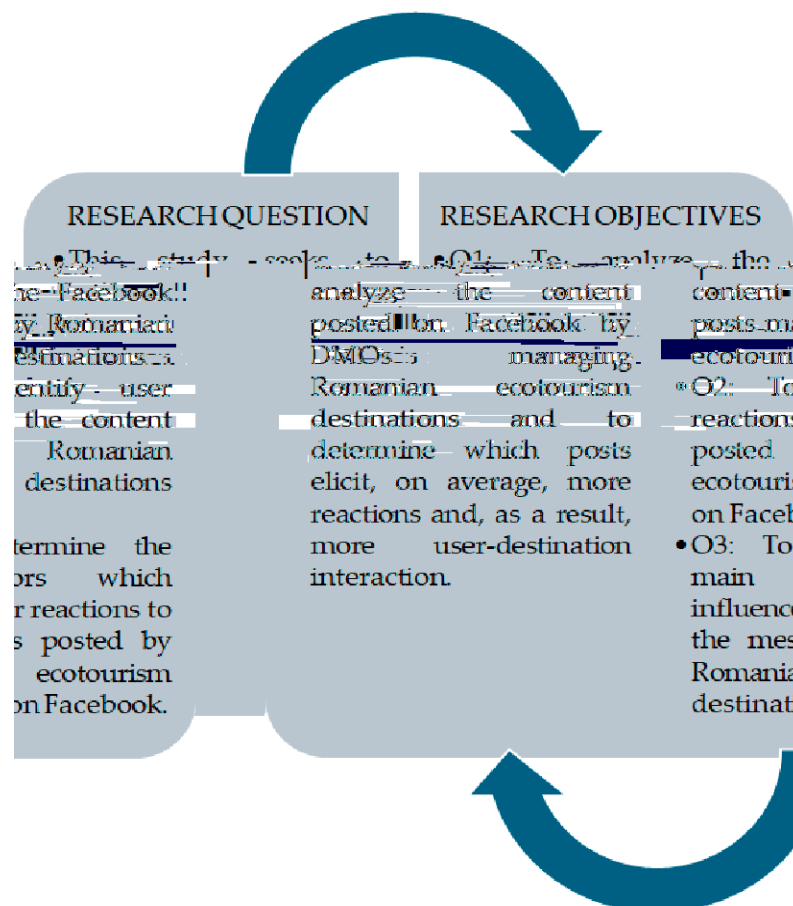


Figure 1. Graphical diagram illustrating the research problem and research objectives.

This study introduces a novel exploration into the strategic use of social media by destination management organizations (DMOs) in Romania for promoting ecotourism destinations. Unlike the broader literature on social media's role in tourism, which predominantly focuses on well-researched regions, our investigation delves into the relatively uncharted territory of Romanian ecotourism. This focus not only fills a significant gap in the current literature but also highlights the unique challenges and opportunities faced by Romanian DMOs in leveraging platforms like Facebook for destination marketing.

In order to achieve the research objectives, the messages posted by the analyzed destinations over a period of six months were processed using content analysis. The format of posts (picture, link, or video) was considered and the common themes defining ecotourism activities were identified in the content of these posts. Furthermore, a systematic analysis was conducted based on user reactions to the posts (number of likes, shares, and comments), and the main indicators of user interaction were computed. Finally, the regression model, boxplot analysis and ANOVA were applied to identify the main factors influencing user reactions to the posted content. The results provide theoretical and practical insights for academia and policy makers.

2. Literature Review

2.1. DMO-Generated Content on Social Media

Tourists extensively utilize social media during the planning phase before their trips, searching for information about destinations, accommodations, dining options, facilities, recreational activities, transportation, and more, as supported by various studies [25–27]. To engage and inform tourists, thereby encouraging them to consider visiting certain destinations (as demonstrated by [28,29], DMOs create content on social media, including text, images, advertisements, and videos. To effectively draw tourists to their destinations, marketers must understand what information is vital to tourists during the destination selection phase, enabling them to make this essential information readily accessible to tourists on digital platforms (as emphasized by [30]).

The content shared on social media plays a critical role in attracting potential tourists, as indicated by Pino et al. [31]. Message content contains essential information [32], while message format determines how that information is presented to the audience [18,33]. Message content on social media represents the information conveyed through messages on these platforms, as pointed out by Leung et al. [11] and Molina et al. [13]. Several authors have noted that message content often encompasses various themes within individual posts, as observed by Tafesse and Wien [34].

There are several important aspects related to message content. Some authors emphasize the significance of communicating culture-specific elements of tourism products, such as food, entertainment, and sports activities, through social media [35–37]. Others stress the need to present a complex sequence of attractions, events, activities, tours, or hotels, among other things, as demonstrated by Govers and Go [38]. Nature-related content is also considered an important factor that stimulates the reactions [12]. Some authors also focus on various elements aimed at capturing customers' attention, as suggested by Kiralova and Pavlicecka [39]. As a result, interactivity, including calls to action, can be seen as one of the outcomes of an effective social media strategy [10,40,41]. Another example is the potential for rewards or opportunities to win something, as indicated by Molina et al. [13].

The literature examining message content reveals that the most utilized characteristics include the following: a call to action, incentives or rewards, cultural activities, culinary experiences, recreational activities, sports-related content, children-focused activities, and appeals to social causes [13,31,42]. This is significant as consumer reactions to posts about products or pricing differ from responses to informational or entertaining content [29,43].

Message format pertains to the visual design of the message, and message content can adopt a variety of formats. Using images for promotional purposes on social media is becoming a prominent mode of online communication to engage tourists with a des-

ination [29,44]. Images related to a destination garner more attention and convey more meaningful information. Tourism destination organizations utilize social media to share images that provide destination-specific details, such as the beauty, scenery, and cleanliness of a place, assisting consumers in deriving value and making informed travel decisions, as emphasized by He et al. [45]. Additionally, organizations also post non-tourism-related images that encompass general information about the destination, including its culture, people, safety, and overall quality of life, aiming to attract tourists and encourage them to visit a destination [46].

Furthermore, message content can be effectively conveyed using innovative emerging technologies like virtual tours, which can influence the format of the message [38]. Some scholars highlight the importance of photographs for capturing authentic experiences [47–49]. Meanwhile, various researchers propose alternatives to photos, such as the relevance of maps or videos on social media platforms [3,10,39,40,50].

According to Kim and Fesenmaier [51], there are individuals who are goal-oriented in their information searches and highly value message formats like maps, local event calendars, and similar resources. Hays et al. [10] expand the scope of their content analysis to include other categories for studying message formats, such as links, tags, hashtags, as well as materials like fact sheets, brochures, newsletters, and news.

Therefore, based on the above literature review, the first objective of the present paper is to analyze the content of the Facebook posts made by Romanian ecotourism destinations (O1).

2.2. User Reactions and Interactivity

Social media serves as a crucial platform for building relationships with destinations. Analyzing the content conveyed through social media messages and evaluating user responses to various types of content are key aspects when assessing interactivity and destination communication on social media platforms [2,3,52]. Typically, user reactions to posted content involve expressions like likes/dislikes, comments, and shares. Among these user reactions, likes are the most used type, but comments and shares generate higher interactivity than do likes [2,7,12]. Social media communication is crucial for fostering dialogues and eliciting public responses, particularly in relation to brands. It plays a key role in encouraging audience participation across various platforms. This was highlighted in studies by Valentini [53] and Huertas [2], among others. Researchers like Huertas and Marine-Roig [2,3], as well as Barcelos et al. [54], have investigated the kind of content that most effectively engages social media users. Their findings suggest that content that is unique or specific to a destination tends to attract more interaction, although generic content also has its place. Regarding the analysis of interactivity on social media, there are differing perspectives: some, like Del Chiappa [55], Nusair et al. [56], and Gálvez-Rodríguez et al. [12] focus on the level of engagement generated, while others, such as Fischer and Reuber [57], examine the impact of this interactivity on public opinions and behaviors. Considering the limited literature focused on ecotourism social media communication (e.g., [9,15]), the second objective of the present paper is to identify user reactions to the content posted by Romanian ecotourism destinations on Facebook (O2).

Furthermore, metrics like the count of likes, comments, and shares serve as suitable indicators for assessing marketing success, as suggested by De Vries et al. [40], Huertas et al. [3], Kwok and Yu [58], and Molina et al. [13]. These studies further analyze how different features of posts, including images, videos, and links, influence these key performance indicators.

Facebook allows users to share different types of content, namely (1) statuses, (2) photos, (3) videos, and (4) links, each offering varying degrees of interactivity. Cvijikj and Michahelles [59] categorized these into two groups based on interactivity: statuses and photos were considered to have ‘no interactivity’ due to their static nature, being only viewable or readable, while links and videos were deemed ‘highly interactive’ as they invite users to click through for more comprehensive content, like reading the full text of a link or watching a video. Their research indicated that content that is both entertaining

and informative significantly boosts engagement levels. Additionally, it was observed that fans engage positively with content that offers rewards, though primarily in the form of comments. Interestingly, the study also found that interactivity tends to reduce engagement with posts moderated by page administrators, making photos the most attractive type of post in terms of user interaction. Considering the limited literature within the context of ecotourism destinations' Facebook communication, the third objective of the present study is to determine the main factors which influence user reactions to the messages posted by Romanian ecotourism destinations on Facebook (O3).

3. Materials and Methods

3.1. Ecotourism Destinations Selection

Romania's cultural heritage, deeply embedded in its rich history and diverse landscapes, significantly shapes the promotional strategies employed by destination management organizations (DMOs) for ecotourism. The country is characterized by a strong bond between its people and the natural environment, a relationship that has been preserved through traditions, folklore, and a general ethos of living in harmony with nature. This unique cultural attribute plays a pivotal role in the adoption and impact of social media in promoting Romanian ecotourism destinations. Romania stands out for its vast and varied natural landscapes. These natural settings are not just geographical features but are ingrained in the Romanian cultural identity. Traditional practices and the preservation of natural habitats underscore the importance of nature in Romanian life. Such cultural practices offer a unique backdrop for ecotourism, presenting opportunities for DMOs to highlight the authentic experiences that visitors can expect.

Romania is one of the few countries in the world that has applied an ecotourism destination evaluation system, based on the globally recognized criteria of the Global Standard for Sustainable Tourism (GSTC) [60]. Thus, an ecotourism destination can be conceived at the level of a micro-region that includes at least one protected natural area, covers one or more territorial administrative units (TAUs), has attractive natural and cultural resources, and has a local partnership that determines a clear and unitary development direction for ecotourism. The ecotourism destination status may be obtained for a maximum period of three years, which may be extended at the applicant's request (i.e., a DMO) [60]. The Association of Ecotourism in Romania (AER) promotes ecotourism destinations on its website (www.eco-romania.ro, accessed on 10 March 2023), providing a short description for each of them as well as a link to their dedicated webpage, which is created and managed by a specific DMO in each location.

The initial step of this research involved the identification of seven distinct ecotourism destinations that had a Facebook page when the present study was initiated (March 2023). The designated locations for examination are Țara Dornelor (TD), Băile Tușnad and the surrounding area (BT), Colinele Transilvaniei (CT), Eco Maramureș (EM), Ținutul Zimbrilor (TZ), Pădurea Craiului (PC), and Țara Hațegului și Retezat (TH). The selection of these seven regions was predicated on their capacity to typify Romanian's ecotourism diversity. Figure 2 showcases a map of Romania, highlighting the locations of the destinations.

Băile Tușnad and the surrounding area (BT) attracts visitors for both wellness purposes (considering its mineral springs with healing waters, mofettas, and richly ionized air) and nature activities around the only volcanic lake in southeast Europe (Saint Ana Lake) or within Mohoș Peat Bog, a unique natural area featuring remnants of vegetation from the Ice Age. In this area, wildlife enthusiasts have high chances of observing bears in the wild, in specialized observatories, and beavers that have returned to the Olt River after hundreds of years since their extinction.

Țara Dornelor (TD) is situated in the north-eastern part of Romania, close to Călimani National Park, which has unique natural landscapes, resulting from the activity of an extinct volcano. This destination provides varied opportunities for outdoor activities, such as hiking, mountain biking, horseback riding, easy-rafting, and climbing. Moreover, this

ecotourism destination hosts four nature-themed trails and a rich cultural heritage in its rural area.

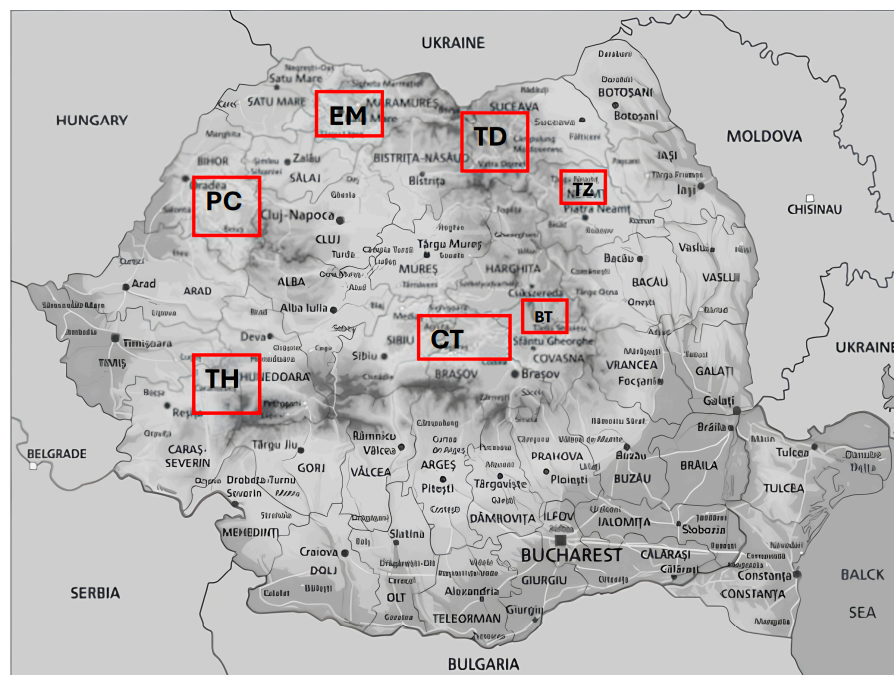


Figure 2. The geographical location of the Romanian ecotourism destinations. Source: developed by authors.

Pădurea Craiului (PC) is an ecotourism destination located in the western Carpathian Mountains, with a diverse offer of nature experiences. Visitors may discover the underground world in four show caves with pathways and lighting installations or continue exploring the depths of the Earth in two caves, equipped as cavers, and accompanied by a specialist guide. Within the destination, there are no less than 17 marked hiking trails, 5 themed trails, interactive playgrounds, many cycling trails, a via-ferrata route, and even an easy rafting route. All of them are designed for families with children and are excellent opportunities to spend active time in nature.

EcoMaramureș (EM) is in the northern part of Romania, and it mainly includes a rural area close to Creasta Cocoșului (The Rooster's Crest), in the Gutâi Mountains, a huge nine-million-year-old cliff made of magmatic rock. Visitors are mainly attracted by the authentic rural life, where nature and the locals have joined hands to create a unique cultural landscape with wooden houses, gates, and churches. The natural tourism resources also include lakes and forests, habitats for birds and mammals, and meadows with unique flora and healing herbs.

Colinele Transilvaniei (CT) (Transylvanian Highlands) is a rural area in central Romania, including villages located between three Romanian cities: Brasov, Sibiu, and Sighisoara. It is promoted as the last truly medieval landscape in Europe, because it encompasses beautiful villages with fortified churches, some of which are included in the UNESCO Heritage list (e.g., Viscri, Biertan, Sighisoara, Saschiz, and Valea Viilor). Moreover, this destination includes seven protected areas that are part of the European Natura 2000 network, making it the second-largest protected area in the country, after the Danube Delta Biosphere Reservation.

Tara Hațegului-Retezat (TH) is situated in south-western Romania, and it includes a national park (Retezat mountains) as well as a UNESCO Global Geopark (Hateg Country Geopark). It is promoted by the AER as a place where visitors may explore lost worlds, dinosaurs, volcanoes, and traces of a former sea, within the geopark. Retezat mountains are perfect for hikes in a unique alpine landscape with lakes and carnivorous plants, all

relics from the Ice Age. From a cultural perspective, tourists may discover the traces left by the Romans in antiquity, at Sarmizegetusa Ulpia Traiana, and the first Christian places of worship—the Densus Church.

Ținutul Zimbrului (TZ) (Bison Land) is in eastern Romania, and it is promoted by the AER as the place where legends and bison meet. It includes a 180-hectare acclimatization enclosure near the Visitor Centre of the Vânători-Neamț Natural Park, where more than 50 bison roam freely through the secular forests of the land. The cultural heritage of this ecotourism destination includes famous monasteries and hermitages scattered in the mountains, monastic villages, and medieval historical monuments. In recognition of the efforts to preserve the cultural and natural wealth of the area, Bison Land has been, for years, the only sustainable tourism destination in Romania, out of the 100 selected worldwide.

3.2. Research Methodology

This study adopts a multiple-case-study approach, as meticulously outlined by Yin [61], to explore the strategic use of social media by destination management organizations (DMOs) in promoting ecotourism destinations within Romania. This methodological framework is chosen for its robustness in facilitating an in-depth understanding of complex phenomena within real-life contexts, making it particularly suitable for our investigation into social media practices across different Romanian ecotourism settings.

This research was based on exploratory research conducted through secondary data analysis. The data were obtained by consulting the posts of the Romanian ecotourism destinations on their own Facebook pages and the reactions of users to these posts. The official Facebook pages of the analyzed destinations were chosen taking into consideration that this network emerges as the most extensively utilized social media platform. According to Statista [62], Facebook is the most popular social network worldwide, ranked by the number of monthly active users. The data were collected from the 1st of March to the 31st of August 2023. This specific time frame covers the beginning of the spring tourist season in Romania, Easter break, and the summer holiday. In total, 624 significant posts from the analyzed destinations were obtained, as presented in Table 1.

Table 1. Number of posts and fans per destination in the analyzed period.

	Ecotourism Destination							Total
	BT	TD	PC	EM	CT	TH	TZ	
Total posts	45	153	64	84	76	128	74	624
Total fans	16,209	14,161	12,122	10,166	9349	8680	7715	

Total fans—data retrieved on 1 September 2023.

Content analysis was used for data processing based on the extraction of the “context units” and “thematic distinction”, in accordance with Krippendorff [63]. Such analysis is mostly used for processing the results of interviews [64] but is also popular for finding the characteristics of messages posted on social media [2]. Firstly, the format type of the post was extracted (picture, video, and link) to identify the preferred method of communication used by the analyzed ecotourism destinations. Secondly, the thematic analysis of the posts’ content was independently conducted by three members of the research team. The divergences were mediated by another person to reach a consensus.

The common themes that define the tourism activities in ecotourism destinations, according to the information provided by AER, were searched for in the messages posted on Facebook. These themes are hiking; wildlife observation; observation of flora; bird watching; landscape; gastronomic and oenological tourism; cycling tourism; equestrian tourism; cultural activities; water activities; winter activities (cross-country skiing, snowshoeing, sledding); photo tours; accommodation; events. As the answers to these fourteen themes are quite spread-out and unbalanced across the considered destinations, a reduction

in the dimension number was applied by grouping the themes into four main categories that are partially consistent with other approaches in the literature [12]:

1. Nature: hiking; wildlife observation; observation of flora; bird watching; landscape.
2. Leisure: cycling tourism; equestrian tourism; water activities; winter activities; photo tours.
3. Culture: cultural activities; events.
4. Hospitality: accommodation; gastronomic and oenological tourism.

Consequently, an analysis of the number of posts and other additional analyses were computed in relation to these new main categories to reach the first research objective (O1).

In order to identify the user reactions to messages posted by the ecotourism destinations on Facebook (O2), user responses were analyzed by dividing them into the main types of reactions: likes; comments; and shares. The total number of reactions was computed by summing the likes, comments, and shares, and then this total was normalized by the number of posts and number of fans of each destination using the following formulas:

$$\text{Total Reactions} = \text{Number of likes} + \text{Number of comments} + \text{Number of shares} \quad (1)$$

$$\text{Reactions per post} = \text{Total reactions} / \text{Total post} \quad (2)$$

$$\text{Reactions per fan} = \text{Total reactions} / \text{Total fans} \quad (3)$$

In the last part of the analysis, we aimed to identify the main factors influencing user reactions (O3). The first analysis considered the relationship between the number of posts and the number of reactions. Next, the influences of the content type, particularly that of the format type of the posts on user reactions, were analyzed. The analyses started from the following hypotheses extracted from the literature [2,7,54,59]: the number of posts has a direct and positive influence on the number of user reactions (H1); the content type of the posts influences the number of user reactions (H2); and the format type of the posts influences the number of user reactions (H3).

To test the first hypothesis, the number of monthly posts of each destination in the analyzed period was considered in relation to the number of reactions to these posts. In total, 42 observations were obtained (7 destinations \times 6 months), and a linear regression model was used to determine the influence of the number of posts on the number of user reactions. The equation for this model is shown below:

$$\text{Reactions} = \beta_0 + \beta_1 \text{ Posts} + \varepsilon \quad (4)$$

For the other two hypotheses, the user reactions were counted for each of 624 messages posted by the analyzed destinations. Further, each post was classified according to their content in one of the main themes identified (for H2) and according to the format type (for H3). The results were normalized by removing values considered outliers by using boxplot analysis. The influences of the content type and format type on the number of user reactions were tested by computing an analysis of variances (ANOVA).

To validate the accuracy of the findings, they were compared with the self-presentations available on the analyzed ecotourism destinations' websites and other information provided by AER on its website [65]. This approach aimed at achieving "data triangulation" to validate the reliability of the results [66].

4. Results

4.1. Content Analysis of Facebook Posts from Romanian Ecotourism Destinations

The first research objective of this study was to examine the content of Facebook messages posted by Romanian ecotourism destinations (O1). The resulting dataset consisting of the messages posted by the analyzed ecotourism destinations over a period of six months contains 624 messages. The most active destinations on Facebook during the analyzed period were TD with 153 posts, TH with 128 posts, and EM with 84 posts. We

may notice that in all these cases, the number of posts was less than one post per day. The other destinations posted a limited number of messages, the lowest being recorded for BT (45 posts).

Regarding the format type of these posts, 429 contained pictures (68.8%), 125 contained links (20.0%), and 70 contained videos (11.2%). None of the analyzed posts contained only text. These results indicate that all destinations posts are multimedia-based (see Table 2). Photo-type posts, which exceed 70% of all posts, are mostly in destinations such as BT, EM, and TZ, while link-type posts are mostly used by CT (34.2%), PC (28.1%), or TD (24.8%). Video type content is less present in the posts of ecotourism destinations, but some of the latter preferred such posts quite a lot more compared with other destinations: EM (21.4%) and TH (16.4%).

Table 2. Analysis of format types of posts.

Format Type	Ecotourism Destination							Total
	BT	TD	PC	EM	CT	TH	TZ	
	Number of posts							
Picture	33	103	40	62	49	87	55	429
Link	10	38	18	4	26	20	9	125
Video	2	12	6	18	1	21	10	70
Total	45	153	64	84	76	128	74	624
	% of total posts							
Picture	73.3	67.4	62.5	73.8	64.5	68.0	74.3	68.8
Link	22.2	24.8	28.1	4.8	34.2	15.6	12.2	20.0
Video	4.4	7.8	9.4	21.4	1.3	16.4	13.5	11.2

When performing a content analysis on digital media, certain researchers delineate various themes in communication texts [1,2,67]. In the present study, the content analysis was focused on the “thematic distinction” based on a predetermined set of ecotourism activities, in accordance with the operational framework defined by the Association of Ecotourism in Romania (AER). Thus, the Facebook posts of ecotourism destinations were classified according to their content into one of the categories promoted by AER on their website. These predetermined themes are hiking, wildlife observation, flora observation, bird watching, landscape appreciation, gastronomic and oenological tourism, cycling tourism, equestrian tourism, cultural activities, water-based activities, winter activities (including ski touring, snowshoeing, and sledding), photographic excursions, accommodation, and events (see Table 3).

Table 3. Number of posts on the main ecotourism activities.

	BT	TD	PC	EM	CT	TH	TZ	Total
hiking	0	0	0	0	0	0	0	0
wildlife observation	6	7	2	2	3	5	4	29
observation of flora	0	7	6	2	2	4	2	23
bird watching	0	0	0	0	2	0	0	2
landscape	17	36	24	14	15	38	12	156
gastronomic and oenological tourism	1	21	1	5	5	2	12	47
cycling tourism	3	13	4	7	14	3	2	46
equestrian tourism	0	1	1	0	0	0	0	2
cultural activities	2	16	2	22	12	12	15	81
water activities	0	1	4	0	0	0	0	5
winter activities (cross-country skiing; snowshoeing; sledding)	0	1	1	1	0	0	0	3
photo tours	0	1	0	0	0	0	0	1
accommodation	1	3	6	10	1	1	6	28
events	15	46	13	21	22	63	21	201
Total	45	153	64	84	76	128	74	624

In Table 3, it is revealed that more than a half of the analyzed posts contained messages promoting local events or natural attractions in the destination. Some activities like hiking, bird watching, equestrian tourism, photo tours, etc., are almost absent from the posted messages. TD and TH stand out with the highest number of posts both in total and divided by the most popular activities: landscape and events. Given the high spread and heterogeneity of content across the predetermined themes, four new broader themes were considered by grouping the posted messages, as explained in the methodology section. The results are presented in Table 4.

Table 4. Number of posts and percentages for the main categories.

	BT	TD	PC	EM	CT	TH	TZ	Total
				Number of posts				
Nature	23	50	32	18	22	47	18	210
Leisure	3	17	10	8	14	3	2	57
Culture	17	62	15	43	34	75	36	282
Hospitality	2	24	7	15	6	3	18	75
Total	45	153	64	84	76	128	74	624
				% of total posts				
Nature	51.1	32.7	50.0	21.4	28.9	36.7	24.3	33.7
Leisure	6.7	11.1	15.6	9.5	18.4	2.3	2.7	9.1
Culture	37.8	40.5	23.4	51.2	44.7	58.6	48.6	45.2
Hospitality	4.4	15.7	10.9	17.9	7.9	2.3	24.3	12.0

The results reveal that the most popular theme is culture, which is dominant in the posts of the analyzed destinations, with two exceptions (BT and PC) that mostly preferred content focused on nature. In fact, these two themes are the most frequently observed and represent 78.9% of all posts. In destinations like EM and TH, culture is present in more than 50% of posts, while nature is prevalent in the post of BT and PC. Overall, cultural content is the most prevalent in the posts (45.2%), followed by nature-related content (33.7%), while leisure (9.1%) and hospitality-related content (12%) sum up smaller proportions of posts. In conclusion, it can be observed that nature, which is the main characteristic of ecotourism, is not the most preferred theme in the messages posted by Romanian ecotourism destinations.

4.2. User Reactions to Content Published by Romanian Ecotourism Destinations on Facebook

This section reveals the outcomes of our investigation on user reactions toward the content shared by Romanian ecotourism destinations on Facebook, responding to the second research objective (O2). Through a systematic analysis of user reactions to each post of the analyzed destinations, the likes, shares, or comments provided by the target audience were identified. All analyzed comments were in Romanian language.

The results in Table 5 show that the most common reactions were likes to post, which accounted for 83.5% of all reactions. In total, 12.8% were shares and 3.7% were comments on posts. A similar pattern can be observed for each destination, which means that users are not highly engaged in interacting with page administrators or other users. Among the Romanian ecotourism destinations, EM stands out from the others with many reactions to their posts (20,757 reactions). It is followed by TD, with 13,906 reactions, and, by a long distance, CT (6141 reactions) and TH (5085 reactions).

An analysis of user reactions was also performed considering the number of posts and the number of fans. The decision to compute average reactions using the ratio of reactions to the number of posts, as well as the ratio of reactions to the number of followers, was motivated by their relevance and transparency in providing distinct metrics of audience engagement with Facebook content. These metrics enable the assessment of post impact and the degree of fan loyalty (see Table 5).

Table 5. Reactions to Facebook content.

	BT	TD	PC	EM	CT	TH	TZ	Total
	Number of reactions							
Likes	1026	11,161	3089	17,963	5131	4201	3082	45,653
Comments	38	858	61	506	154	202	177	1996
Shares	142	1887	331	2288	856	682	831	7017
Total	1206	13,906	3481	20,757	6141	5085	4090	54,666
	Avg. number per post							
Likes	22.8	72.9	48.3	213.8	67.5	32.8	41.6	73.2
Comments	0.8	5.6	1.0	6.0	2.0	1.6	2.4	3.2
Shares	3.2	12.3	5.2	27.2	11.3	5.3	11.2	11.2
Total	26.8	90.9	54.4	247.1	80.8	39.7	55.3	87.6
	Avg. number per fan							
Likes	0.06	0.79	0.25	1.77	0.55	0.48	0.40	0.58
Comments	0.00	0.06	0.01	0.05	0.02	0.02	0.02	0.03
Shares	0.01	0.13	0.03	0.23	0.09	0.08	0.11	0.09
Total	0.07	0.98	0.29	2.04	0.66	0.59	0.53	0.70

The results reveal that the destinations mentioned in the top of the total reactions also included the largest number of reactions per post. EM's posts received significantly higher reactions per post (247 reactions), followed by TD, with 90.9 reactions, and CT, with 80.8 reactions. It should be noted that the most active destination (TD), with the highest number of posts (see Table 4), ranks second in terms of the average reactions per post, while TH, with the second highest number of posts, is ranked second to last in terms of the average number of reactions per post.

Interpreting user reactions to the Facebook posts, calculated as the total number of reactions (likes, shares, and comments) divided by the total number of fans, can also provide valuable insights into audience engagement with the content posted by ecotourism destinations on the Facebook platform, as it can highlight the interest and interaction of the followers of a destination. It is assumed that many fans could generate many reactions. The results again reveal the best position of EM, which achieved the highest average score of more than two posts per fan. All other destinations achieved less than one reaction per fan (ex: TD with 0.98 reactions per fan, CT with 0.66 reactions per fan, and TH with 0.59 reactions per fan). It must be noted that destinations with a high number of fans received low values for this metric. For example, the destination with the highest number of fans (BT) received only 0.07 reactions per fan due to a small number of reactions correlated with a small number of posts.

To have a better image of the two metrics calculated above, a scatter plot was computed to emphasize the correlation between them at the level of the considered ecotourism destinations (see Figure 3).

The results presented in Figure 3 reveal a direct and linear correlation between the analyzed metrics. EM has the best position because it succeeded in generating a high number of reactions, but it is only in third place for the number of posts. The conclusion is that some entities with a small number of fans and low activity on social media platforms could be favored when they occasionally attract many reactions. These results are consistent with other findings in the literature, which state that such metrics should be interpreted with caution because normalizing by the number of posts or by the number of fans can distort the analysis, and the total number of reactions better reveals interactions with the users [13].

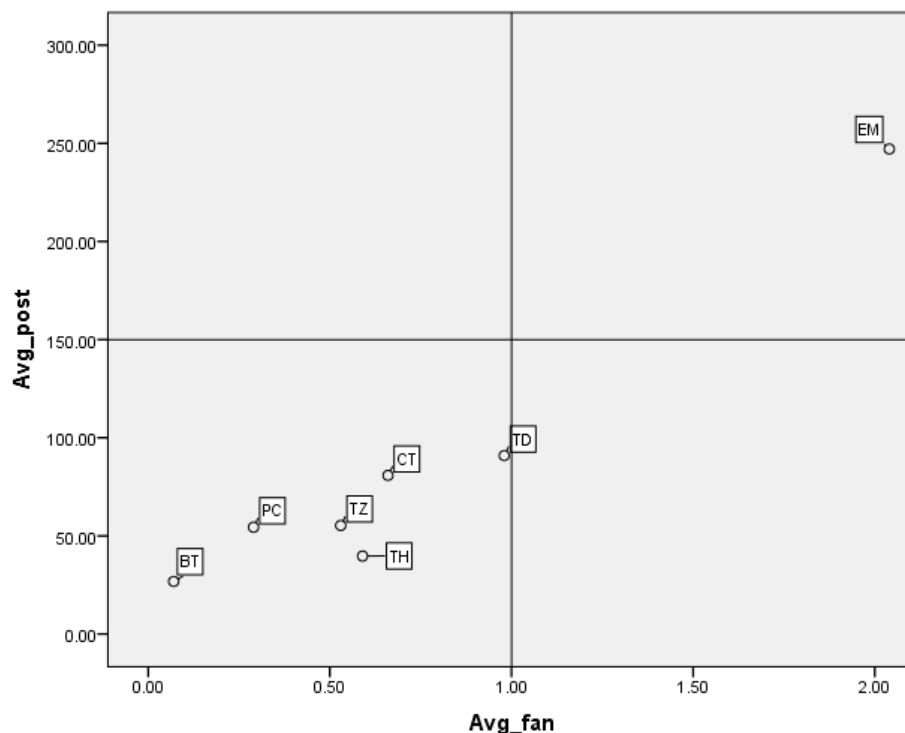


Figure 3. Correlation between the number of reactions per post and reactions per fan.

4.3. The Main Factors That Influence User Reactions

The third research objective of this study was to determine the main factors that influence the user reactions to the messages posted by ecotourism DMOs (O3). One of the influence factors drawn from literature is the number of posts. Our research started from the hypothesis that the higher the number of posts, the higher the number of reactions (H1). In this respect, the linear regression model was used, considering the monthly number of visitors’ reactions to the dependent variable, which was obtained by summing the number of likes, comments, and shares for every destination. The number of Facebook messages posted every month by the considered destinations was considered the independent variable. Thus, 42 observations were obtained, on which the regression model was applied. The results are presented in Table 6.

Table 6. Effects of the number of posts on the total reactions.

Factors	Coefficient	Std. Error	t	p-Value
(Constant)	357.12	469.84	0.760	0.452
Posts	63.57	28.15	2.259	0.029

Dependent variable: reactions; R-squared = 11.3%; F = 5.101; p-value = 0.029.

The influence of the number of posts on the total reactions is significant for $p < 0.05$ but the overall explanation of the total variation of the dependent variable is rather modest, as is revealed by the coefficient of determination (R-squared = 11.3%). This means that there are other factors that have an important influence on user reactions to posted messages. However, the administrators of Facebook pages could expect an average increase of about 64 reactions for each new post, resulting from the regression equation below:

$$\text{Reactions} = 357.12 + 63.57 \text{ Posts} + \epsilon \tag{5}$$

Another research hypothesis was that the post content, according to the major themes identified via content analysis, influences the number of reactions (H2). In this regard, for

better accuracy, each post was categorized according to their content, and the reactions to each post were counted as a new variable. Finally, 624 observations were analyzed.

In order to analyze the normality of data sets for each type of post content, a boxplot analysis was performed. The results presented in Figure 4 reveal many outliers that generate poor representativeness of the means for further comparisons. Consequently, the outliers were eliminated with the aim to obtain the normality of the distributions. The resulting sample comprised 507 observations with the distribution according to the post content presented in Table 7.

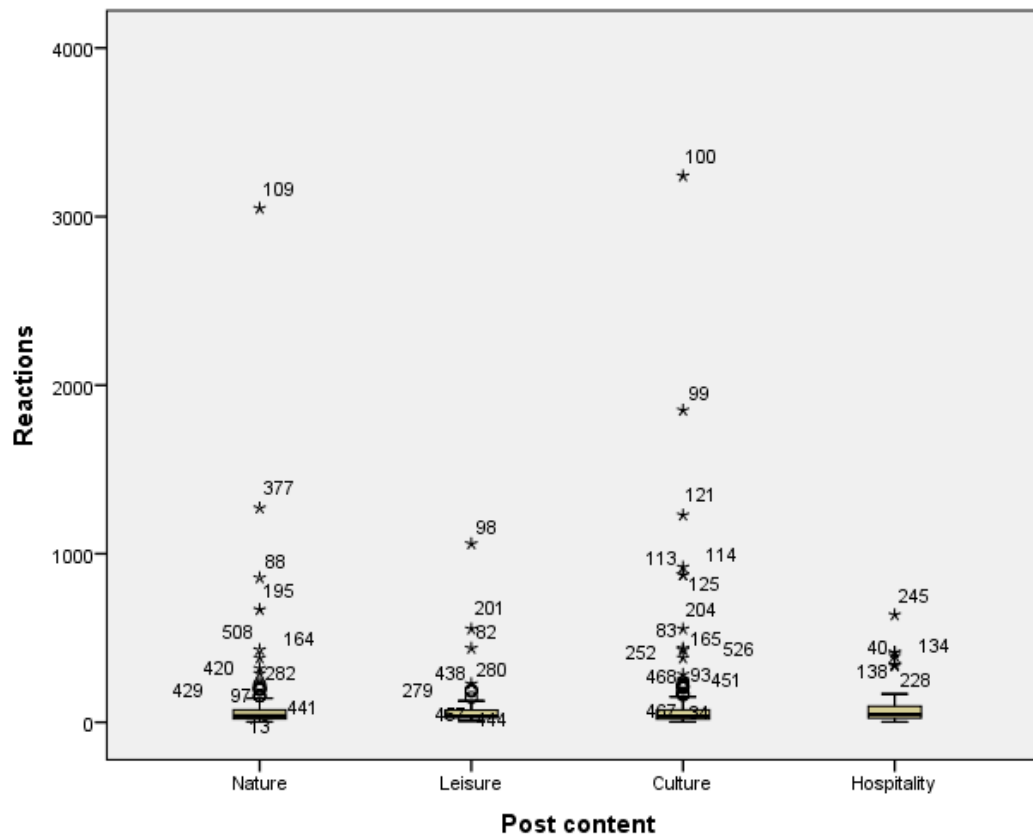


Figure 4. Boxplot analysis for the data sets resulting from every type of post content. (* Cases that are classified as outliers).

Table 7. The influence of post content on the number of reactions, determined using ANOVA.

Post Content	N	Mean	F	p-Value
Nature	174	36.44	1.446	0.229
Leisure	45	36.44		
Culture	231	35.44		
Hospitality	57	42.51		
Total	507	36.67		

Dependent variable: reactions.

The results of the new boxplot analysis are presented in Figure 5. The new data sets contain no outliers, and their skewness and kurtosis values are less than 1 in absolute values in all cases. Therefore, they could be considered to have a normal distribution.

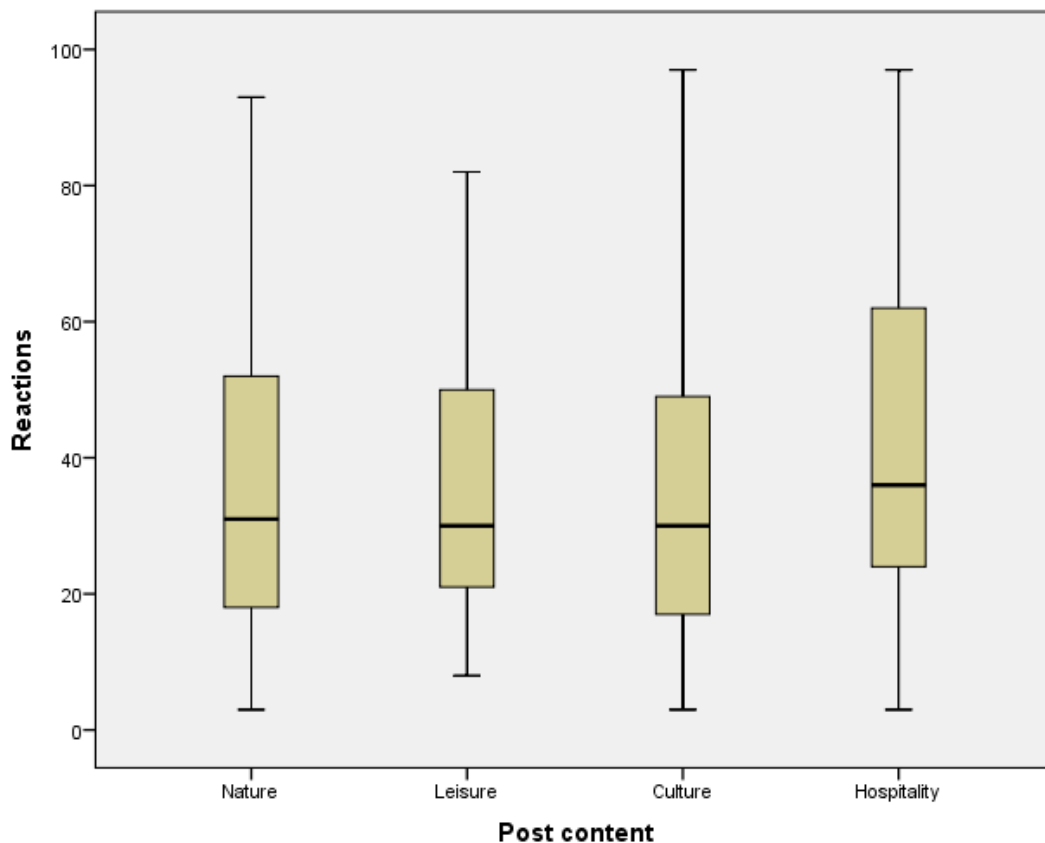


Figure 5. Boxplot analysis for the data sets without outliers.

To identify a statistically significant difference between the means of reactions grouped by post content, an analysis of variances (ANOVA) was computed.

As Table 7 reveals, the means of the analyzed data sets have very close values, which are not statistically significant according to the ANOVA results ($p > 0.05$). Thus, a significant influence of post content on the number of reactions cannot be accepted, and the second research hypothesis was rejected.

The same results were obtained for the influence of content format (picture, link, or video) on the number of posts, which also rejects the third research hypothesis.

In conclusion, based on the available data, the number of posts is the only factor influencing the number of user reactions. Of course, there are many other unknown factors influencing the number of reactions, given that the number of posts only explains a small ratio (11.3%) of the variance in the number of user reactions. Thus, future research should focus on identifying such factors.

5. Discussion

In an age marked by a continuous influx of individuals into social media platforms, the DMOs of ecotourism destinations find themselves compelled to harness the potential of these networks. As emphasized by Bickford et al. [68], social media represents a cost-effective alternative to conventional media channels to effectively target the ideal audience, while playing a pivotal role in enhancing brand recognition and loyalty.

This study responds to the call made by Huertas and Marine-Roig [2] for further research, aiming to assess whether or not specific brand communication, characterized by its attractiveness, elicits increased responses from users. Drawing inspiration from the investigations of Mariani et al. [7], Confetto et al. [18], Galvez-Rodriguez et al. [12], and Hernández-Ortega et al. [69], who examined the usefulness of Facebook as a destination marketing tool in various European destinations, this study deepens the understanding of the online communication on Facebook of seven Romanian ecotourism destinations. The

goal, from a theoretical point of view, was to adapt and modify the framework proposed by the above-mentioned authors from the perspective of Romanian ecotourism destinations. In light of these considerations, the present study analyzes the communication on Facebook from the distinct and authentic characteristics of selected Romanian ecotourism destinations, and the subsequent interactivity they foster among individuals. To the best of our knowledge, no existing study has addressed this specific topic in ecotourism destinations, which highlights the novelty of this paper.

The first operational objective of the study (O1) was to analyze the content of the Facebook posts made by Romanian ecotourism destinations. Regarding the format of the posted messages, a significant number of photo posts were observed (68.8%). The link format was used in 20% of posts, and videos were used in 11.2%. TZ, EM, and BT are the Romanian ecotourism destinations with the strongest preference for posting photos. This finding coincides with previous studies in the context of national destination organizations [2] and regional destinations [7]. Concerning the format type, some authors consider that picture posts are more likely to lead to higher engagement [47–49]. On the contrary, other authors argue that this type of posts is too static and less effective compared with links and videos, which better involve users in reading the message content or watching a video [59].

As regards the content of the messages, the posts were categorized based on a predetermined set of ecotourism activities in accordance with the operational framework defined by the Association of Ecotourism in Romania (AER). These activities encompassed hiking, wildlife observation, flora observation, bird watching, landscape, gastronomic and oenological tourism, cycling tourism, equestrian tourism, cultural engagements, water-based pursuits, winter activities (including ski touring, snowshoeing, and sledding), photographic excursions, accommodation, and events. From this perspective, the present study is also original, since there is no division of posts based on these criteria in the specialized literature. Even if the analyzed activities are characteristic of ecotourism, the posted messages mainly focused on promoting local events and some natural attractions, while there were very few messages regarding other activities of interest to tourists, such as hiking, bird watching, equestrian tourism, photo tours, or water activities.

For ease of interpretation and the possibility to compare the results obtained with those of other researchers, the posts were grouped into the following categories: nature, leisure, culture, and hospitality. Culture-related posts (events and cultural activities) predominated in the Facebook posts of ecotourism destinations in Romania (45.2%). Nature-related posts ranked second in terms of mentions (33.7%), followed by hospitality (12%) and leisure (9.1%). These results are contrary to those obtained by Raacke and Bonds-Raacke [70] and Galvez-Rodriguez et al. [12], whose conclusion was that nature-related topics had the highest number of posts.

The second operational objective of the study, identifying the user reactions to the content published by Romanian ecotourism destinations on Facebook (O2), offers a new dimension of interaction between Facebook pages and their users. The results reveal a large number of likes that dominate with 83.5% of all reactions. This result is consistent with other findings in the literature, which mentioned likes as the most used type of reaction by users [2,7,12]. However, the number of shares and comments provided by users is very low, which represents low user interaction with the posts, as revealed in other works [7].

Looking at the analyzed destinations, we can see that EM generated the highest number of reactions. However, the distribution of reactions is not uniform on the posted messages, as several of them concentrated thousands of reactions, especially likes. TD is ranked second in the number of reactions, but the number of posts is significantly higher than that in the case of EM.

The analysis of the reactions divided by the number of posts and by the number of fans reveals high heterogeneity at the level of the analyzed destinations. EM is at the top for both metrics despite having fewer fans and posts than other destinations. This confirms the findings in the literature, according to which a destination with a low number of fans

or posts is favored and such type of normalization is not suitable for accurate analysis [2,7]. Moreover, it has been found that the pages with many fans tend to have many inactive users, which distorts the number of reactions per fan [7].

The aim of the third operational objective of the study was to determine the main factors that influence user reactions to the messages posted by ecotourism destinations on Facebook (O3). The number of posts is considered one of the main influence factors, able to generate a larger number of reactions (H1). The regression analysis indicates the statistically significant positive impact of the number of posts on user reactions, which confirms the hypothesis, but also, the existence of other influence factors should be considered [2,7,12]. Another influence factor mentioned in the second hypothesis (H2) is the post content according to the major themes considered: nature, leisure, culture, and hospitality. Each post was analyzed individually along with its number of reactions, regardless of the destination, and was categorized by content into one of the four categories. The results reveal no significant influence of post content on the user reactions, so the hypothesis was rejected. This partially confirms the findings in the literature, which mentioned that only nature-related messages have a significant influence on the number of reactions [12]. The format type of the message (picture, link, or video) cannot be considered a significant factor influencing the number of reactions either. Thus, hypothesis H3 was also rejected. This result also aligns with other findings in the literature [12].

5.1. Theoretical Implications

The present article contributes to the development of the theory through the proposed analysis framework, which is specific to the ecotourism destinations and could be applied in tailoring messages according to the peculiarities of each ecotourism destination. Such a proposal is supported by the other findings in the specialized literature that highlighted the importance of communicating specific elements of the destination in ensuring effective communication with the users of social media platforms [35–37]. Thus, the proposed framework provides the DMOs with some message content that could match the most important features of their offer.

Another important finding from the theoretical point of view is the positive influence of the number of posts on user reactions. Thus, by increasing the number and frequency of posted messages, the ecotourism destinations could obtain a larger number of reactions and improve user interactivity. Based on the collected data, we noticed that the Romanian ecotourism destinations have low activity on Facebook, with less than one message posted per day.

Further research, including interviews and surveys among users, could also lead to the identification of new influencing factors that can contribute to the higher effectiveness of messages and to enriching the theory.

5.2. Policy and Management Implications

The findings of this study hold significant practical implications for ecotourism organizations and marketers aiming to enhance their online presence and engagement. Firstly, the results reveal that posts about culture and nature are preferred by the Romanian ecotourism destinations. In line with the study by Galvez-Rodriguez et al. [12], this study concludes that local DMOs should emphasize the natural resources of their destinations to create a favorable image that encourages tourists to visit or revisit the destination. Even if no significant influence of the content type on user reactions was identified, the natural resources appear to meet the information needs of tourists as they are the main specific of ecotourism destinations. Publishing information that emphasizes the identity of the destination can foster users' desire to interact with the Facebook page, but also to encourage them to visit that destination, as is also mentioned in other works [28,29].

Ecotourism DMOs should adapt their content to align with destination specifics and tourist attractions. Understanding the distinctive attributes of each destination and crafting message content accordingly can be a valuable strategy. However, the results of the present

study revealed that five out of the seven analyzed destinations (TD, EM, CT, TH, and TZ) have more posts in the “culture” category and are less focused on “nature”. This outcome can provide a trigger for their DMOs, which should mainly highlight the natural features in their Facebook posts. This strategy can generate more interaction with social media users because nature is the primary attraction of ecotourism destinations. However, this information must be very well connected with the need to assure the preservation of the natural ecosystems of the ecotourism destinations [17]. Given the absence of content on bird watching, equestrian tourism, or photo tours, ecotourism organizations should consider diversifying their content strategy. By addressing these specific ecotourism activities, destinations can attract a broader audience interested in these niches. This diversification may lead to increased interest from enthusiasts of these activities.

The primary aim of communication on social media platforms should not be just to accumulate more fans. Instead, the emphasis should be on eliciting user reactions and fostering a high degree of engagement to transform passive fans into active ones. Organizations should create content that sparks meaningful interactions, such as likes, comments, and shares. Using micro-items (emojis, calls to action, hashtags, geotags, and rewards) in the structure of their posts can be effective in achieving this goal.

According to the results of this study, the most important thing for DMOs’ activity in social networks is to increase their presence by having daily posts that could lead to a higher number of reactions from users. At the moment, most of the analyzed destinations have a low number of posts, which delineates only occasional activity rather than a systematic presence on Facebook. By performing a daily activity, the DMOs can identify the content and format of the messages that generate the most reactions and mainly use such messages. Another goal of the page administrators should be to increase the number of shares by the users, and consequently to multiply the number of people who receive the message.

Moreover, incorporating these practical implications into their social media strategies, the DMOs can harness the power of online communication and Facebook interactivity to foster greater engagement, attract a wider audience, and ultimately promote ecotourism destinations more effectively.

5.3. Empirical and Social Implications

Our study’s findings underscore the significant impact of social media strategies employed by Romanian destination management organizations (DMOs) in promoting ecotourism destinations. The strategic use of platforms such as Facebook has been demonstrated to not only enhance the visibility of these destinations but also to engage potential tourists in meaningful ways, fostering a sense of community and stewardship towards natural and cultural heritage sites.

Empirically, our research contributes to the evolving understanding of digital marketing efficacy within the tourism sector, particularly in emerging markets like Romania. Social media emerges as a powerful tool in bridging the gap between remote or lesser-known ecotourism destinations and the global tourist audience, offering insights into sustainable tourism practices and destination management.

Socially, the implications of our findings highlight the potential for DMOs to leverage social media in promoting responsible tourism practices and environmental awareness. By

the global tourism market. The impact of social media marketing within the Romanian setting provides meaningful contributions to the discussion on digital tourism marketing strategies and their effectiveness in promoting lesser-known ecotourism destinations.

The current study highlights that DMOs utilize social media not merely for marketing but to engage with potential tourists, build community, and emphasize ecotourism's sustainability, significantly boosting Romania's appeal as an ecotourism destination. Social media's strategic use enhances Romania's global recognition as a site for sustainable tourism, with DMOs creatively using these platforms to showcase the country's natural and cultural assets. This approach educates on conservation and sustainable tourism, benefiting both environmental preservation and local economies. The findings suggest these strategies could guide policy and marketing in similar settings globally, underscoring digital platforms' role in advancing sustainable tourism objectives.

This paper provides new insights into the debate among researchers about user reactions to the online communication of tourist destinations on social media (i.e., Facebook). It explores the insights of social media content generated in the context of ecotourism destinations because their DMOs need to adapt their online communication to the specificities of this market niche, based on environmentally friendly experiences in natural settings. This paper focused on Romania as a country setting due to the dynamic growth of ecotourism in this country within recent decades, supported by a legal framework which clearly defines and designates ecotourism destinations. However, the outcomes of this study provide practical implications in terms of what type of content boosts user reactions and enhances their engagement that may be useful for ecotourism DMOs from around the globe. From a theoretical perspective, this paper proposes a content analysis framework based on a "thematic distinction" of ecotourism activities and four broader themes that may be used for grouping the messages posted by ecotourism destinations on Facebook.

Despite its theoretical and practical contributions, the present research has some limitations that should be considered for future research directions. First, data collection focused on the social media content posted by ecotourism destinations' DMOs during a specific time frame, within the pre-season and high season for ecotourism activities (March–August). Future studies may consider other time frames or comparisons between off-season and high-season social media content and users' reactions. Furthermore, longitudinal studies may be used to analyze changes over time in both the DMOs' posted content and users' reactions. Second, this paper analyzed a limited number of ecotourism destinations from Romania. It would be interesting to include other international ecotourism destinations and to identify cultural differences from other countries. Furthermore, researchers may consider different types of tourist destinations (e.g., coastal, mountain, and cultural destinations) and perform additional comparisons and analyses of the social media content posted by DMOs. Third, this research was concentrated on a single social media platform—Facebook. Future studies may be expanded by considering other social media platforms such as Twitter, YouTube, or Instagram. Moreover, comparisons may be made between destinations' social media content and their official websites or other online communications. Last, it is important to acknowledge that our analysis did not cover paid promotional strategies, and influencer and word-of-mouth promotion. Recognizing the potential impact of this limitation, we suggest that future research should include these promotional tactics. This would provide a more nuanced and complete picture of engagement and marketing effectiveness by examining the full spectrum of marketing strategies' determinants of successful social media campaigns for ecotourism destinations.

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