



# Article Exploring Values via the Innovative Application of Social Media with Parks Amid COVID-19: A Qualitative Content Analysis of Text and Images Using ATLAS.ti

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Abstract: Due to the lockdown and restrictions on public activities and gatherings amid COVID-19, parks received renewed attention because of their importance and irreplaceable functions as healthy outdoor recreation. This study aims to explore the values reflected in Twitter content that discussed parks amid COVID-19 through a qualitative content analysis of text and images using ATLAS.ti. Specifically, a qualitative data (visual and textual) set of Twitter posts amid COVID-19 (from February 2020 to September 2022) that mentioned Everglades National Park was explored. The results from the social media content analysis of park values during COVID-19 revealed three themes: (1) nature, (2) recreational tourism, and (3) proximity. This study expands the application of social media via a qualitative content analysis of text and images using ATLAS.ti by providing methodological improvements. Practically, the findings of this study can also provide practitioners with useable knowledge for design strategies considering the value of protected areas as a model of sustainable destination management.

**Keywords:** park values; social media data; Twitter; COVID-19; qualitative content analysis; text; images; ATLAS.ti

# 1. Introduction

Social media, namely Facebook, Twitter, Instagram, and Flickr, is one of the two "mega trends" next to search engines that influence the tourism system [1]. People use social media to search, organize, share, and explain their stories and experiences via user-generated content that hosts texts, images, videos, comments, captions, hashtags, and mentions [2]. Social media are regarded as data sources of content because social media platforms facilitate communication and the exchange of knowledge [3]. Twitter is a powerful and robust global microblogging social media platform [4]. Through tweets, users express their opinions about different topics, interact in real-time and update information [5]. Twitter also enables gathering qualitative feedback, and it plays an essential role in understanding public values and propagating a snowball impact [2].

Parks and protected areas are important resources to communities and hold aesthetic, recreational, natural, financial, environmental, health, psychological, social, and cultural value [6–8]. Individuals value parks for their physical and psychological benefits as natural and cultural resources [6,9]. Capturing the value of parks enables destination management planning and offers tools for DMOs to accomplish sustainable destinations with their own resources, marketing, and management strategies [10].



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**Copyright:** © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). Values related to parks vary from environmental features to social conditions since people form distinctive experiences in these particular settings [11]. Amid coronavirus disease-19 (hereafter COVID-19) and subsequent lockdowns and restrictions placed on public activities and gatherings, green spaces such as parks received renewed attention because of their important and irreplaceable functions for healthy outdoor recreation [12,13], being one of the only sources of resilience to benefit people's psychological, physical, social, and spiritual needs [14]. COVID-19-related travel restrictions increased interest in contactless and spontaneous travel to escape into nature, taking road trips, in-travel social distancing, and participating in low-risk outdoor activities rather than visiting crowded indoor areas [15].

This study fills the research gap by identifying the value of parks amid COVID-19 using social media data that have not yet been applied in a qualitative research approach. Despite the intense media attention directed toward protected areas during COVID-19, limited studies have examined the values associated with parks during the pandemic [8,14]. In reviewing some of the studies, there are contradictory results in prior studies that examine the role of parks amid COVID-19. According to Geng et al. [14], limits on social gatherings, stay-at-home restrictions, movement, closed workplaces, and the closures of recreational facilities were correlated with increases in park visits amid COVID-19. Since the COVID-19 outbreak, the authors found that urban parks allow unban dwellers' resilience while maintaining well-being and enabling social distancing [14]. Due to the lockdown and restrictions on public activities and gatherings, green spaces such as parks received renewed attention because of their important and irreplaceable functions for healthy outdoor recreation [12,13]. Rice and Pan [8] reached different conclusions, finding that increased park visitation in the Western United States is primarily caused by seasonality rather than COVID-19.

These contradictory results on limited research indicate a need to understand the values related to parks during COVID-19. However, examining values related to parks can be expensive, labor-intensive, and time-consuming because of limitations in data collection such as surveys [16], interviews, and focus group interviews [9]. Despite prior research that has explored park values, using descriptive content of social media data limits capturing users' opinions [17,18]. Furthermore, quantitative social media analysis tools provide traditional features of page views and site visitors, but this alone is no longer sufficient as deeper discussions do not necessarily take place on platforms that we can control or measure traditionally [19].

To the extent that the potential exists for the content analysis of social media platforms, this study aims to explore the values associated with parks through the qualitative content analysis of user-generated text and images. A qualitative inquiry helped deepen the insights to understand how and why some values are associated with parks, which could not be assessed by simply analyzing keywords or hashtags in social media data [20,21]. Thus, this study is the first to explore elicited values regarding parks on Twitter during COVID-19 via the use of ATLAS.ti as one such mechanism for a qualitative content analysis of text and images.

In the following paper, the Introduction section presents a brief overview of the research topic and the reasons for assessing values related to parks amid COVID-19. The Literature Review section offers a critical appraisal and background of prior research related to the present study area in general and values related to parks amid COVID-19 using social media data in particular. The Method section introduces how data were collected and analyzed. The Findings section contains the results of the study. Finally, the paper concludes by answering the main research question with a more in-depth exploration of the results to interpret the findings.

# 2. Literature Review

## 2.1. Values Associated with Parks

Values refer to desirable goals that motivate behavior; the construct is believed to guide people's judgment on right vs. wrong and good vs. bad and their evaluations of what is meaningful in their lives [22]. It thus provides a key to understanding individuals' choices of action [23,24]. Space is an abstract location with no meaning and no social connections for humans, whereas place is a more specific location through human experiences and interactions that people develop with physical environments [25]. As individuals ascribe positive values/meanings to specific places, they tend to have positive attachments to the places [26]. Prior emphasis is given to subjective place experiences, deep emotional connections, and individually constructed place meanings [25,27].

People develop emotional connections and give special values and meanings to natural settings [28]. For instance, a wilderness area might be associated with escape and relaxation, or a local park might be associated with family bonding and exercise [26]. Recognizing the physical, psychological, and social benefits arising from visiting parks, visitors endow these settings with value [29]. The values and meanings people attach to natural environments vary from the sense of self [30] to expectations for socially constructed behaviors to protect the natural environments [31]. Most prior studies focus on achievements individuals seek with diverse beneficial values from natural settings. These beneficial values range from physical health and mental well-being [32] and reducing stress [33] to family cohesion [32], economic impact of tourism on local communities, and community pride [34].

Prior research concluded that recreation areas are commonly related to beneficial values such as enjoying nature, escaping from the noise, seeking solitude, and learning [29,35]. Bricker and Kerstetter [36] described that place meanings associated with recreational activities are the enjoyment/excitement of participating in an activity in a setting) and knowledge about the setting [37,38]. Beyond recreation, Manzo [38] concluded that significant place values were often close to individuals' home and/or convenient to visit. Similarly, natural areas can influence certain characteristics anticipated and valued by recreationists dwelling in close or distant places, which can be due to situational constraints such as trip distance/cost to access settings [39].

### 2.2. Parks Value Amid COVID-19

COVID-19 reshaped tourists' movement, social behavior, consumption patterns, and leisure [40]. COVID-19-related travel restrictions affected international tourism, fostering proximity travel within a country such as domestic or regional tourism [14]. Because of insecurity and uncertainty, people regard close tourism destinations as less risky, also their purchasing can be influenced by the pandemic-induced financial crisis.

Parks offer environmental, recreational, and physical benefits and time outside the home to rejuvenate mental health amid the pandemic [41]. Key measures taken to mitigate the spread of COVID-19 included restrictions on the use of public spaces, quarantine, and social distancing. Countries across the world introduced stay-at-home policies, restricted public events and social gatherings, and limited or eliminated the use of public transport. Many areas also recommended closure of schools and workplaces and implemented public COVID-19 information campaigns [42]. Due to the implemented restrictions, green spaces have increased in popularity for their importance for public health [43]. Green infrastructure generally has proven to provide environmental, social, psychological, health and ecological services for residents. With multiple opportunities for recreation, green spaces support health, community cohesion, and city sustainability [11]. Under COVID-19 and health crises, parks and green spaces have been proven to benefit human mental and physical health and social well-being [44]. Park visitation rates changed during the COVID-19 pandemic in a variety of ways in different countries worldwide. According to Google COVID-19 Community Mobility Reports [45], as illustrated in Figure 1, the numbers of visitors to parks and outdoor spaces in most countries initially reduced before ultimately growing and reaching levels equal to or even higher than prior to the pandemic



# (baseline days: the median value for the 5-week period of park visitors from 3 January to 6 February 2020).

**Figure 1.** Number of visitors to parks and outdoor spaces during COVID-19 globally (**a**) Google COVID-19 Community Mobility Trends Park and Outdoor Spaces map; (**b**) Google COVID-19 Community Mobility Trends Park and Outdoor Spaces chart [45].

## 2.3. Social Media Research in Park Values

Social media platforms have removed the boundaries and restrictions on the dissemination of information. These platforms create enormous opportunities for consumers and sellers, especially in the tourism sector [46]. Social media data potentially complement traditional data collection for assessing opinions and experiences with places [20]. Advanced computational, web, and mobile technology, enables frequent and large volume sharing of daily experiences and opinions toward places on social media. These digital footprints on social media posts often include geolocations and time stamp data sources on the content, facilitating communication in a virtual environment and establishing knowledge exchange not as a one-way of mass communication but with a dynamic one of selecting, reflecting, sharing, and experiencing [3,47].

Utilizing social media data, recent studies reveal individuals' experiences and opinions on parks [10,20]. With geolocated Twitter and Flickr data, Hemstead et al. analyzed geographic human visitation dynamics in parks in New York City [10]. This study found that social media activity in parks increases activity around public transportation and bike routes and specific park characteristics (i.e., water bodies, athletic facilities, impervious surfaces). Chen et al. [11] combined surveys with social media data to examine tourists' and inhabitants' perceptions of the social values of green park spaces, and they found that distance to water was positively associated with both groups' experience of the recreational and cultural values ascribed to green parks. Roberts [48] applied Twitter to understand urban parks, noting that the platform data identified a range of events occurring in the parks and various ways people use these spaces. Kovacs-Györi et al. applied automated sentiment analysis to geotagged tweets over time on multiple urban parks in the UK. The study discovered that people tweeted mostly in parks that were in close proximity (3-4 km away) to their center of activity, and their posts were more positive in these areas than elsewhere [49]. Thus, proving a potential exists for extending such analyses to examine values associated with parks through content analysis of social media platforms.

# 3. Method

# 3.1. Study Area

This study explores the values social media users ascribe to Everglades National Park, 1.5 million acres of subtropical wilderness located on the southern tip of Florida (see Figure 2). Everglades National Park was designated as a national park in 1947. The park contains 350 bird species, 300 fresh and saltwater fish species, 40 mammal species, and 50 reptile species [50]. Over one million visitors visit Everglades National Park every year given its proximity to large urban regions and the abundance of biological diversity [51,52]. It is one of only three locations globally, and the largest subtropical wilderness in the United States. It is an International Biosphere Reserve (1976), World Heritage Site (1979), and Ramsar Wetlands of International Importance making it a vital tourism and recreation destination. However, USECO labeled Everglades National Park as an endangered World Heritage Site due to increased population, development, and environmental changes [53]. There are 68 threatened or endangered plants and animal species in the park. In 1999, the Comprehensive Everglades Restoration Plan was developed to restore the water, land, and ecosystem in Everglades National Park. It's the largest restoration project to date spanning over 35 years, and costing between \$8 to \$13 billion.



Figure 2. ATLAS.ti's geo-coding and geo-document of Everglades National Park [54].

#### 3.2. Data Collection and Analysis

This research used a qualitative approach with a combination of phenomenology and hermeneutics. The asymmetrical and unstructured datasets (qualitative in nature) arising from conversations on Twitter [55] were used. Twitter is chosen as it is unique and noticeably different from other social media platforms in that it offers user-generated data that is publicly available [4]. This research utilized ATLAS.ti Mac (Version 8.4.5) to complete this work [54] and Data Miner software tools to collect and analyze data adapted from Vittala [55]. A qualitative data set of all publicly available Twitter posts during COVID-19 (i.e., from February 2020 to September 2022) that mentioned Everglades National Park were explored. To collect data, the search interface of Twitter using its own advanced search function was queried using users, specific date ranges, words, phrases, and hashtags (https://twitter.com/search-advanced (accessed on 31 September 22)). The scope of data for analysis was Twitter posts with hashtags related to Everglades National Park. The posts containing the keywords #EvergladesNationalPark, and #EvergladesNPS, and #Everglades were obtained from Twitter (See Figure 3). Additionally, the advanced search offers a "top tweets" filter, which are determined by an algorithm on the basis of the popularity of a tweet (i.e., shares, retweets, replies) [55,56].



Figure 3. Twitter's search interface using its own advanced search function.

Once a Twitter data collection date was set, each of the designated sample days using the selected relevant hashtags and the "top tweets" under those hashtags were collected or "scraped" onto a spreadsheet [55] using a tool called Data Miner to manage the large amounts of data [57]. Data Miner offers a free Chrome extension that provides public recipes that allow for the scraping and downloading of data from websites [58]. The search spreadsheets collected through Data Miner were then checked against the original Twitter search scroll on the platform, corrected for duplicate, missed, or lost information, and then uploaded to the ATLAS.ti software for coding and analysis.

We adhered to Christensen and Larsen's recommendations [59] regarding all collection, analysis, and presentation of Twitter data. Ethical approval was not required as all Twitter data were retrieved from the public domain [60]. However, for ethical considerations in internet research, personal identity data were removed from all tweets collected [61]; retweeting, or quoting a tweet, ultimately identifies the source, so confidentiality efforts were made to de-identify participants. Although tweet analysis provides a rich source for insights into peoples' genuine opinions, it is limited by not representing the general public [62]. Primarily based on self-selection on several levels, in our study, data was only collected from people with internet access, who have a Twitter account and who decided to contribute to the respective hashtag thread [61].

As a result, 313 tweets were gathered, and 39 inappropriate tweets were deleted. The remaining 274 tweets were analyzed. This study analyzed the social media content of visual and textual data. Visual and textual data were analyzed together using ATLAS.ti software using qualitative content analysis for text and images. We identified categories on the basis of similar tweets. An agreement was reached on labeling through the continuous coding process of the tweet's content of images and text. All the posts were classified according to their values.

To analyze data, this study took four steps to analyze text and images using content analysis adapted from Chapman, Wu, and Zhu [63]. First, we organized texts and images in a Hermeneutic Unit file in ATLAS.ti. Second, we started coding by reading text and images. As an example, we added an open code called "biodiversity" by moving the mouse over a selected image area and selecting coding (Figure 4a), then adding the "biodiversity" code name under Enter Code Name(s). We selected the elements within the texts and images to

code by dragging the mouse over particular parts of the data (Figure 4b). Figure 4 visually demonstrates this process of creating an open code and then using that code from the code list. Code families were created for organization and to help develop structures and themes. Finally, Images and text were analyzed using content analysis to determine the number of times particular codes appeared and co-occurrences to identify themes [64]. This study proposes the use of ATLAS.ti to explore the values of social media users since the qualitative content of images and texts shared on social media platforms.



Figure 4. (a) Process of adding an open code; (b) Process of selecting codes from a code list [54].

# 4. Findings

This research explores the values of Twitter content that discussed Everglades National Park during COVID-19. This study tries to answer the following question: what are the values social media users ascribe to Everglades National Park? As shown in Table 1, from the text and image data, 121 codes were first created, and 10 codes were categorized into 3 code families (Table 1). Similar codes were grouped together to code families (themes). The social media content analysis (visual and textual data) in values ascribed to Everglades National Park during COVID-19 revealed three themes: (1) nature (297), (2) recreational tourism (140), and (3) proximity (97).

Table 1. Process of generating code families (themes).

Codes (A–Z) (Frequency of Code) $\rightarrow$	Grouping Codes $ ightarrow$	Code Families	Frequency of Code Families (%)
<ol> <li>biodiversity (141)</li> <li>close to home (11)</li> <li>largest subtropical wilderness (67)</li> <li>close to popular tourism area (14)</li> </ol>	<ol> <li>biodiversity</li> <li>largest subtropical wilderness</li> <li>natural protection</li> <li>unique natural resource</li> </ol>	Nature	297 (64.29%)
<ol> <li>5. natural protection (40)</li> <li>6. outdoor recreation activities (65)</li> <li>7. social distancing (64)</li> <li>8. socialization (6)</li> </ol>	<ol> <li>outdoor recreation activities</li> <li>social distancing</li> <li>socialization</li> <li>tourism</li> </ol>	Recreational tourism	140 (30.30%)
9. tourism (5) 10. unique natural resource (49)	<ol> <li>close to home</li> <li>close to popular tourism area</li> </ol>	Proximity	25 (5.41%)

Figure 5 is the network view that visualizes the relationships among codes, code families, and frequency of code families. This network view depicts that some codes link to other codes, meaning certain values associated with Everglades National Park coexist. Taken together, these results suggest that social distancing code is associated with outdoor recreation activities, unique natural resources, and close to home codes. Figure 6 is a code co-occurrence table that depicts the correlations among the codes. Among the three themes, nature and recreational experience were the most dominant value associated with Everglades National Park for users. In comparison, proximity was less dominant in fewer Twitter posts than the two other themes.



**Figure 5.** The network view of the values of Twitter content discussed Everglades National Park during COVID-19.

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		• $\bigcirc$ biodiversity • 141	• Close popular • 14	• $\bigcirc$ close to home $\bigcirc$ 11	• $\bigcirc$ largest subtro $\bigcirc$ 67	• $\bigcirc$ natural protec • 40	• $\bigcirc$ outdoor recre • 65	• $\diamondsuit$ social distanci • 64	• $\diamondsuit$ socialization $\bigcirc$ 6	• tourism	• 🔷 unique natura • 49	
• 🔷 biodiversity	141		1 (0.01) 📀	1 (0.01) 🧿	13 (0.07)	7 (0.04)	4 (0.02)	8 (0.04)		2 (0.01) 🧿	6 (0.03)	
• 🔷 close popular tourism areas	14	1 (0.01) 📀		3 (0.14)	2 (0.03)	1 (0.02)	4 (0.05)	5 (0.07)		1 (0.06)		
• 🔷 close to home	) 11	1 (0.01) 📀	3 (0.14)		1 (0.01) 📀			9 (0.14) 📀			1 (0.02)	
• 🔷 largest subtropical wilderne 🕤	67	13 (0.07)	2 (0.03)	1 (0.01) 📀		4 (0.04)	1 (0.01)	3 (0.02)		1 (0.01) 📀	2 (0.02)	
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Outdoor recreation activities ⊕	65	4 (0.02)	4 (0.05)	승규 위로 가 너희가	1 (0.01)	1 (0.01)		35 (0.37)	4 (0.06) 📀		1 (0.01)	
● ◇ social distancing	64	8 (0.04)	5 (0.07)	9 (0.14) 📀	3 (0.02)	1 (0.01)	35 (0.37)		1 (0.01) 📀		20 (0.22)	
● ◇ socialization 🕞	6						4 (0.06) 📀	1 (0.01) 📀				
● 🔷 tourism	5	2 (0.01) 📀	1 (0.06)		1 (0.01) 📀	2 (0.05) 📀					1 (0.02) 📀	
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Figure 6. Code co-occurrence table.

As depicted in Figure 6, the code co-occurrence table demonstrates the relationship between codes using correlation coefficients, higher correlation coefficients mean a stronger relationship between codes. The observed correlation between social distancing and outdoor recreation activities (correlation coefficients of 0.37), unique natural resources (correlation coefficients of 0.22), and close to home (correlation coefficients of 0.14) codes might be explained in this way: social distancing and outdoor recreation activities show the strongest relationships of correlation coefficients of 0.37, and correlation coefficients of 0.22 for codes between social distancing and unique nature resources. The correlation coefficients of 0.14 suggest that a weak link may exist between social distancing and close to home. A possible explanation for these results may be that keeping social distance amid the pandemic, users seek to enjoy outdoor activities and/or recreational tourism to reduce fears of infection from others and spend time in unique natural resource areas for their own physical health and mental wellbeing [65–67]. Another possible explanation for this

is that due to insecurity and uncertainty, COVID-19-related travel restrictions increased interest in proximity tourism, engaging in contactless and spontaneous proximity travel within a country (domestic tourism) or close areas, and taking road trips. This finding corroborates the ideas of Lebrun, Corbel, and Bouchet [15] who suggested that many travel closer to where they live as they consider nearby destinations less risky and/or have pandemic-induced financial concerns.

#### 4.1. Theme 1: Nature

The most dominant theme emerged was nature, which includes a broad concept: preserving biodiversity, the largest subtropical wilderness, unique natural resources, and natural protection, conservation, natural appreciation, aesthetic beauty, and stewardship. The nature theme indicated that many Twitter users expressed strong interest in Everglades National Park as the biodiversity code was mentioned 141 times. As shown in one of the Twitter posts (Figure 7), users shared that the park plays an important role in safeguarding nature and preserving biodiversity, which is one of the significant perceived values of Everglades National Park. Tweets claimed environmental ethics, implying they are conscious of the intrinsic value of biological diversity and of the park being part of nature and conserving species. Some tweets were related to the idea of being deep in nature. Users seemed to have intrinsic value for native, threatened, and endangered plant and animal species such as the Florida Panther, American Crocodile, American Alligator, West Indian Manatee, Wood Stork, and Snail Kite [68].



Figure 7. Example of images related to nature.

As such, Everglades National Park has its unique natural resource, the largest subtropical wilderness in the U.S., and endangered species that cannot be seen elsewhere. Users who visited the park especially posted many pictures of unique natural resources in the park such as American Crocodile and American Alligator, as Everglades National Park in South Florida is famous for being the only ecosystem in the world where alligators and crocodiles coexist (Figure 7).

Posts about natural appreciation reflected and concretely exemplified their biodiversity values with the natural environment protection of the park and being actively engaged in various park volunteer activities. In particular, few users share that people ascribe values to Everglades National Park, and offer improving natural understanding, the feeling of stewardship of natural spaces, and the preservation of natural lands. For instance, one user shared "Today the students learned about stewardship while venturing to Everglades National Park in Florida". Stewardship is defined as "caring for what's been given to you and not wasting it". It seems that the park encourages schools and community groups to actively engage in stewardship behaviors that benefit the environment.

# 4.2. Theme 2: Recreational Tourism

Recreational tourism in Everglades National Park has repeatedly been shared, particularly users post outdoor recreational activities during COVID-19. They valued Everglades National Park as a place to relax, get away from the daily urban lifestyles, escape from ordinary urban life, and socialize, especially during COVID-19. To satisfy travel needs, users expressed active participation in various recreational activities such as escaping into nature, participating in low-risk outdoor activities, going to camping sites, taking a road trip, participating in cultural, educational, or sports events, and getting away from daily lives. Tweets regarding recreational tourism activities were mainly reflected by their picture posts such as hiking, airboat tour, bicycling, fishing, birdwatching, canoeing, kayaking, photographing, and camping (Figure 8).





To some extent, users spend time in Everglades National Park to satisfy their travel desires during COVID-19. COVID-19 has changed travel patterns with more people traveling to escape into nature, in-travel social distancing, and participating in low-risk outdoor activities rather than visiting crowded indoor areas. Users expressed their values with Everglades National Park with pictures such as social distancing in nature and mask off (Figure 9). One of the tweets posts that the benefit to visiting the park during COVID-19 is that it improves physical health and mental well-being. One user's tweet echoed others that time spent in nature reduces stress.



Figure 9. Example of images related to in-travel social distancing.

In addition, while enjoying recreational tourism, users had opportunities to interact with small or intimate groups such as family and friends, as people were afraid of being infected by COVID-19 in enclosed areas. One of the users mentioned that she could improve her social interaction opportunities in Everglades National Park which she missed during COVID-19. She can meet family, friends, and even other visitors who visit the park in open spaces. During COVID-19, she suffered from social isolation due to depression, but after visiting the park and having social interaction, she felt better. Such comments show that Everglades National Park offers even more important opportunities for users to engage in social interaction while enjoying healthy outdoor recreational tourism amid COVID-19.

# 4.3. Theme 3: Proximity

The proximity theme emerged when users discussed their values ascribing to Everglades National Park during COVID-19. Overall, because of COVID-19-related travel restrictions some users expressed that they value the park as it is closer to where they live (proximity to their residence) and is close to other tourism destinations. Proximity value is related to ease of travel, convenience, and trip duration restriction (weekend getaway). Users felt they were privileged to live so close to the park, satisfied with the close nature access. For instance, users' closeness to a residence was one of the main reasons for visits to Everglades National Park, which increased repeat visits because of wanting to be close to nature, ease of access, convenience, and travel costs. In highlighting the value of proximity, one user tweeted: "Plan a visit to this international treasure right in #OurBackyard" (Figure 10). Users valued close parks, which can be due to situational constraints such as trip distance/cost to access settings [39].



Figure 10. Example of image related to proximity.

Due to insecurity and uncertainty, COVID-19-related travel restrictions increased interest in proximity tourism. To reduce the fear of being infected, users were interested in visiting close destinations that they are familiar with to deal with external factors such as lockdown, border close, and flight delays. In other words, many travel closer to where they live as they consider nearby destinations less risky [15]. Also, pandemic-induced financial concerns influenced people to travel to close areas [15]. Thus, people tend to engage in contactless and spontaneous proximity tourism such as a domestic travel within a country of residence, in a region, or close border areas, taking road trips, and in-travel social distancing [15].

Ease of travel and vicinity to other tourism destinations were mentioned among users repeatedly. For instance, proximity to the park was developed through a combination of living close to the park and being located close to other popular tourist destinations in South Florida (i.e., Miami, Homestead, Biscayne National Park, Keys, Dry Tortugas National Park).

# 5. Discussion and Conclusions

This research is the first to explore elicited values regarding Everglades National Park on Twitter during COVID-19 via a qualitative content analysis of text and images using ATLAS.ti. Tweets were categorized values associated with parks into three themes: (1) nature, (2) recreational tourism, and (3) proximity. Several implications can be discussed based on the results of the study.

The major theoretical contribution of this study is in expanding the application of real-time surveillance of social media with a qualitative content analysis of text and images using ATLAS.ti by providing methodological improvements. Applying qualitative analysis on social media associated with park value can be effectively used to understand the public values of parks during COVID-19. Identifying values associated with parks using traditional methods (surveys, interviews) can be expensive, labor intensive, and time-consuming due to data collection limitations using surveys [69]. Analyzing in real-time, cost-effectively using the qualitative content shared on social media posts enables to presentation of what users value and what is affected by other users, creating co-constructed values [5]. With social media data to uncover the values of parks, a qualitative inquiry helped deepen the insights to understand how and why some values are perceived and associated with parks, which cannot be assessed by simply analyzing keywords or hashtags in social media data [20,21]. The results of a qualitative content analysis of user-generated text and images offers a deeper understanding of values through careful analysis and interpretation.

This research contributes to the current literature by offering a better comprehension of elicited values of parks amid COVID-19. Our findings showed how COVID-19 reshaped park values during the pandemic. Values associated with parks during COVID-19 reflect the experiences and opinions regarding social distancing [69]. Particularly, people pursue spending time in large open nature areas having outdoor recreational tourism activities (i.e., hiking, biking, camping), and socializing safely with a few close friends or family members to mitigate fears of infection from others. Users valued close parks, which can be due to situational constraints such as trip distance/cost to access settings [39].

The findings of the current study are consistent with those of Huang [69] in that people avoid indoor crowded areas and seek open nature as lockdown yielded cancellation of events, limited travel, and reduced activities in communities. In other words, COVID-19 heightened the significant value of parks and outdoor spaces because of the shortage of physical activities and their mental-relief limitations [40]. Some research has speculated that along with the rise in outdoor exercise, people's interest in nature raised. As new social behavior protocols became second nature, people tried to enjoy natural areas, and sought to expand their opportunities for nature exposure, recreational use of outdoor spaces, and their health and wellbeing under extreme conditions [40].

This study produced results that corroborate the findings of a great deal of the previous work in this field. Public parks and natural and recreational environments are valued parts of nature during COVID-19 for physical and mental health and social well-being [40]. This also accords with prior research on park values during COVID-19 using a quantitative approach, which showed that parks are expected to play an even more key role in offering environmental, recreational, and rejuvenation of mental and physical health [41,69]. The findings of this study can also provide practitioners with useable knowledge for design strategies considering the value of protected areas as a model for sustainable destination management in the pandemic.

The findings of this study have several important implications for future practice. Management to enhance understanding of the public values of parks in real-time, cost-effectively, using social media platforms; which could complement traditional data and extend knowledge [47]. Park management can use Twitter data to monitor attitudes and perceptions of parks, share information and events cost-effectively, learn opinions about their park experiences, and propose management strategies [69]. This study proved that a large volume of values of parks could be explored via Twitter posts during COVID-19, especially via a qualitative content analysis of text and images using ATLAS.ti. The themes

identified from prior research using social media data demonstrated that Twitter conversations showed parks as a place for nature, recreational tourism, physical benefits, socialization, and sharing events [17,18]. Especially social media data can offer information about the significance of nature, as Everglades National Park is a protected area, for encouraging the preservation of biodiversity, sharing education, outreach, and stewardship [70]. Thus, park management can have more efficient communication and participation in sharing information using social media from parks to the public as well as from the public to parks [51,52,71,72].

Finally, the findings of this study need to be considered in light of its limitations. Twitter conversations cannot represent the general population's opinions and experiences. It may be that the results are unique to the specific Twitter user sample (i.e., 35–65 years of age, male, highly educated, wealthier populations) [73]. Also, this research is restricted in scope to Everglades National Park, and can reduce its generalizability. Thus, further research can use other social media platforms to capture how users value other parks from various perspectives. In addition, values ascribed to parks during COVID-19 cannot be inferred enough as the 280-character short text of tweets limits contextual information [74]. This study is based on the premise that the values were influenced by COIVD-19 due to the date of capture; however, this study did not exactly search for Twitter conversations that mentioned park values and COVID in the same 280 characters [69]. Thus, further research can gather data using different research methods (i.e., interviewers, focus group interviews, expert panels, surveys, mixed methods) to improve contextual understanding and deepen the contextual insights to understand the relation and reason some values are perceived and associated with parks.

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