

The perceived image of multi-asset tourist destinations: investigating congruence across different content types

ABSTRACT

Destination image has become a crucial topic in tourism studies. However, research has scarcely considered the impact of multiple online content sources when studying the image of destinations. This paper examines different types of user-generated content in order to evaluate whether and how this content reflects the evolution of a destination's image, and its congruence therein. The research focuses on a multi-asset tourist destination, i.e., one which draws different market segments. The results show a high degree of congruence and a regular evolution of the destination's attractions, thus strengthening existing theories on communication congruence as well as attractions' evolution theories.

KEYWORDS: destination image, user-generated content, multi-asset destinations, communication congruence, destination evolution

1. Introduction and goals

Destination image perception is a fundamental matter for destination managers, and consequently it has been widely researched (see Section 2: Literature review). Extant research underscores that communication directed towards potential visitors must be 'congruent,' as consistency in messaging increases the chances of the destination being chosen. This congruence should be achieved across various media channels (Van Rompay et al. 2010). In the case of destinations, it is crucial that this congruence is achieved over time, as the local attractions evolve from basic assets to more complex and rich pullers (Richards 2018).

Despite the important role image congruence plays in destination management, studies of congruence and evolution of destination assets are limited, as is the investigation into multi-channel UGC (User-generated content). The literature review section examines the wealth of studies on perceived destination image using a single type of UGC, which generally support their findings in either photos or text, but exposes the gap in understanding related to multi-source UGC.

The objective of this research is to better interpret the perception of a tourist destination from a quantitative perspective. Thus, this article contributes to the literature on UGC and perceived destination image. The researchers processed 9213 photos, 42408 video tags and 359350 texts from different social networks in order to understand discrepancies in congruence among different sources of UGC. Framed by congruence and evolution theories, and layering a longitudinal analysis, this paper examines the shift in perception of attractions as they relate to the point of view of multi-channel UGC. Therefore, the conclusions of this research will have theoretical as well as managerial implications as they relate to destination image strategy. While not the central research topic of the paper, it is a truism to say that the COVID-19 pandemic has hit the studied destination. Therefore, some comments on that matter are put forth in Section 4 (Context) as well as in the final section as a possible topic for further research.

2. Literature review: UGC for destination studies

How a tourist destination is photographed, videographed, or written about on websites or social media networks via UGC has been so amply studied since the 2000s that only a state-of-the-art article may render the width of the topic, see for example Camprubí and Coromina (2016) or Picazo and Moreno-Gil (2017). For their part, Lee and Rha (2018) confirm the interest of studies like the present one when they state that “tourism research is expanding into research on communication, CSR, and marketing.”

UGC has become a valuable tool for studying different aspects of a destination’s image, for example to better understand the destination’s image formation (Serna et al. 2013; Llodrà Riera et al. 2015; Micera and Crispino 2017), to compare the image projected by the Destination Management Organization (DMO) versus the one perceived by visitors (Stepchenkova and Zhan 2013; Nechita et al. 2019; Mariné-Roig and Ferrer-Rossell 2019), to better understand managerial challenges in the destination (Alcázar et al. 2014; Stepchenkova et al. 2015; Mariné-Roig and Anton Clavé 2016; Rahman et al. 2016; Jiménez-Barreto et al. 2019), to better market the place (Zhang et al. 2015; Doosti et al. 2016; Moro and Rita 2018; Luna-Cortés 2018; Tan 2018; Mohamed et al. 2019) or to improve visitors’ segmentation (Moliner-Velázquez et al. 2021).

These research efforts have not only resulted in recommendations that industry professionals may follow, but have on occasion generated new theories or refined existing ones (Munar 2011; Dickinson et al. 2011; Llodrà Riera et al. 2015) by comparing different image formation dynamics.

In their field work, researchers have used different techniques and data sources. For example, website mining (Hellemans and Govers 2005; Költringer and Dickinger 2015; Zhang et al. 2015; Mohamed et al. 2019), picture analysis (Negri and Vigolo 2015; Hunter 2016) or text analysis, be it from blogs (Akehust 2009; Çakmak and Isaac 2012; Tseng et al. 2015) or from Tripadvisor (Kladou and Mavragani 2015; Chiu and Leng 2017; Garay Tamajón and Cànoves Valiente 2017; Wong and Qi 2017). Due to its speed and dynamism, Twitter has been studied as a communication tool, such as when catastrophes affect destinations (Barbe et al. 2018; Oliveira and Huertas 2019). The use of Facebook has been more varied and has served multiple purposes, compare Park et al. (2016) studying the communication of tourism policies, to Jadhav et al. (2018) investigating tourists’ behaviour. The fact that online UGC content has been available for some years now means that longitudinal studies can start emerging (Wong and Qi 2017; Gálvez-Rodríguez et al. 2020). In a similar vein, the ‘traditional’ vs the ‘digital’ word-of-mouth are compared by Tan and Lin (2021).

However, most studies use a single type of UGC when studying destinations, and only a few research projects have combined more than one type of source. Table 1 gives a short overview of some of these publications. Until 2016, most research relied on Flickr and Panoramio to make comparative studies. The former has lost in significance and the latter was retired in 2016, so these sources are no longer available (or interesting) to today’s researchers.

Table 1. Studies dealing with multiple UGC types or sources.

Publication	Data Sources
Hadi et al. (2017)	GPS tracking and Visitors’ pictures on site
Johnson et al. (2016)	Flickr, Twitter and Swarm
Alivand and Hochmair (2016)	Flickr and Panoramio
Hochmair (2016)	Flickr and Panoramio
Kádár and Gede (2013)	Flickr and Panoramio

Thus, studies bringing together congruence and evolutionary theories with the analysis of multiple UGC sources are scarce, and hence a methodological research gap that this article covers.

3. Theoretical frameworks: Case Research, Congruence and Attractions' Evolution

The presented empirical evidence is from the city of Cartagena de Indias on the Colombian Caribbean coast, a multi-asset destination with several main attractions that the authors consider a suitable case study. Thus, this work is ultimately framed within Case Research Theory (Yin 1984; Stake 1995) as it discusses a concrete case from an empirical point of view with the aim of verifying (or modifying, as might be the case) existing theories (Eisenhardt 1989). Accordingly, in this work, empirical findings from a context are studied in-depth to verify theories and propose modifications. Within Case Research Theory, different types of cases are posited: exceptional cases, regular cases, comparative cases, etc. This paper assumes the framework outlined by Neape et al. (2006) as the discussed case is representative. In fact, Cartagena is an adequate proxy for significant samples of Latin American destinations, boasting historical attractions as well as beaches, allowing the results to be generalized to other destinations in the region. This study can also be underscored as one of the first of its kind conducted in a South American city, a geographical area that has been underexamined.

Congruence at different touchpoints appears to play a crucial role in the frictionless consumption process, be it in the choices made by consumers or in the organizations' communication directed towards them. Van Rompay et al. (2010) state that, in multimedia messages, congruence favors "processing efficiency," which in turn accounts for favorable attitudes from the consumers' perspective. According to them, there must be a "consistency among meanings associated with [different] elements within an (online) environment" (p. 23) to create congruence. In our research, searching for congruence means researching whether the UGC by visitors to Cartagena displays similar content across different social media channels, i.e., whether the perceived image for the tourist who post photos, videos, and/or text are congruent with each other or not.

Thus, the objective in this research is to study the level of congruence among these three types of UGC. For instance, a high level of congruence would mean that tourists perceive the destination in the same way, irrespective of the media they use, which can indicate high congruence in the perception of the destination's image – and favorable attitudes towards it. Correspondingly, a high level of congruence across different media outlets also means a correct strategy and use of these communication channels on behalf of the local DMO (Destination management organization).

A potential threat to image congruence is the fact that attractions in destinations and the destination's image are intrinsically dynamic factors. This is explained, among others, by Richards (2018), when he specifically asserts that destinations' attractions evolve over time going from basic attractions (for example sun and sand), to tangible cultural attractions (built military heritage in the case of Cartagena), and finally to intangible attractions. This is a value-

1 catching process and is pushed by both offer and demand. The data in this paper spans a wide
2 timeframe; this allows for longitudinal reflections on the evolution of attractions, the place's
3 projected image and the destination's perceived image.

4 **4. Context: Cartagena de Indias, Colombia : from a growing to a Covid-plagued** 5 **destination**

7 Located on the Colombian Caribbean coast, Cartagena is one of the country's well-established
8 destinations, receiving around 3 million visitors annually, approximately 10% of them foreigners.
9 Founded by the Spanish conquerors in the 1530s, Cartagena soon became a key port in the
10 colonization process of Hispanic America, leading to the construction of a consistent urban
11 defense system with walls and fortresses (Bassols and Soutto-Colón 2020). Today, these ancient
12 military structures, along with the historic and picturesque city center, play an iconic role in the
13 city's tourist landscape, landing a classification as UNESCO-marked heritage in 1984. Thanks to
14 its beaches, it was promoted as a sun and sand destination until around 2010. From then, it has
15 been increasingly sold by the local tourist board as a 'heritage destination'. This has allegedly
16 turned Cartagena into a 'multifaceted' destination, i.e., a tourist space where different
17 attractions geared towards different visitor segments coexist.

22 This 'multifaceted' or 'multi-asset' character of the destination raises important questions about
23 branding and management strategies (Bassols and Leicht 2020). It also raises questions about
24 how the city is perceived by its visitors, in terms of what they think the destination stands for
25 (i.e., beach or culture or other attractions). Therefore, a close study of the UGC by the tourists
26 might provide essential clues to guide future city developments.

29 One study on visitors to Cartagena worth mentioning is by Pinillos Castillo et al. (2017),
30 concerning the motivations of tourists from different markets of origin (Table 2). The study,
31 conducted among 320 tourists visiting Cartagena in 2016, found that a majority (55%) were
32 mainly interested in 'culture', whereas the remaining 45% were primarily interested in beaches
33 and leisure. North Americans, and especially and Europeans, showed a much wider gap (57% for
34 culture versus 43% for beaches), whereas Latin Americans -with the exception of Brazilians-
35 narrowed this gap (53% versus 47%). Thus, Table 2 shows that 'cultural motivations' are at the
36 fore.

41 **Table 2.** Main attractions for foreign tourists visiting Cartagena in 2016.

Origin	Cultural & Religious	Beach & Leisure
USA	44%	56%
Europe	70%	30%
<i>USA & Europe</i>	<i>57%</i>	<i>43%</i>
Brazil	82%	18%
Argentina	45%	55%
Mexico	33%	67%
<i>Latin America</i>	<i>53%</i>	<i>47%</i>
TOTAL	55%	45%

52 Source: Pinillos Castillo et al. (2017)

55 The general figures from the last decade show that Cartagena is a growing destination, or at
56 least it was until March 2020 when the COVID-19 pandemic stroke. The fact that flights were
57 called off for five months in Colombia (April to August 2020) as a cautionary measure towards
58 the pandemic caused foreign tourism to completely collapse. The reaction from the national
59 government in supporting the tourism industry has been relatively slow, according to several
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1 interviewed stakeholders. This situation has caused -nationwide- around one third less turnover
2 for hotels and restaurants, some two thirds for the transportation industry. The impact on the
3 largest tourist destinations in Colombia has been huge in terms of employment losses, however
4 the stakeholders see that Cartagena's position a well-established destination is not endangered
5 in the mid- to long term. Companies were able to quickly react to adapt to the new situation.
6 Since September 2020, the beaches and the historic centre have reopened at a slow pace and
7 with 'biosecurity' as an important argument. Meanwhile, the city has found back to its main
8 vocation in past decades: being the largest national holiday destination. In fact, businesses were
9 relatively happy with occupancies and expenditure levels in the Easter holiday 2021.
10 International tourism has been at a low, however some local companies say that events or
11 incentive trips are being delayed but not cancelled. Short term predictions are difficult to make
12 as the situation remains changeable as COVID-related travel warnings may appear (or disappear)
13 within few weeks. In fact, as stated by several stakeholders, short term planning remains a
14 challenge in the city for both the public and the private sectors.
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20 **5. Methodology and field work**

21 **5.1. Data collection**

22 The authors of this paper intend to quantitatively analyse large swaths of data collected using
23 web-scraping methods. Images for analysis were downloaded from Facebook, Flickr, Instagram,
24 and the extinct Panoramio, and videos were taken from the sites Vimeo and YouTube. Texts
25 were taken from Twitter and Instagram with the software developed by Mabrian Technologies.
26 Purposely, different social picture and video networks were chosen so as to research any
27 possible gaps or incongruences among these.
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34 *Data collection for photos*

35 Concerning the pictures, the following seven social networks were considered from the outset:
36 Facebook, Flickr, Instagram, the extinct Panoramio, Pinterest, TripAdvisor and Twitter. These
37 sites were trawled for pictures of Cartagena using relevant keywords, randomly collecting the
38 output produced by each social network's algorithm in response to highly relevant keywords
39 ('Cartagena', 'Cartagena de Indias', 'Cartagena, Colombia', etc.). The field work was carried out
40 over 6 semesters, from 2015 to 2018, by volunteer tourism undergraduate students at the
41 Universidad Autónoma del Caribe in Barranquilla, Colombia. A total of 15 students were involved
42 in the project at different times. Each student was trained carefully before starting tagging, so
43 that the tagging criteria would be consistently upheld for the duration of the whole project. The
44 latest official mapping of local attractions from 2014 provided the basis for setting up categories
45 and subcategories to tag the pictures (FONTUR and MinCIT, 2014). The final result was 10089
46 pictures with 28219 tags. In terms of dates, the pictures cover a timeframe from 2006 to 2018,
47 with the majority of them taken between 2010 and 2016.
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54 However, some limitations imposed on the collected data meant some of the mentioned social
55 networks were rejected. First, we did not want single pictures on the database, but rather
56 pictures taken while the users were *en route* in the city, thus conveying an attitude of in-depth
57 exploration. For this reason, only sets of a minimum of 4 pictures taken on the same day were
58 entered into the database. In some instances, 3 pictures were accepted. This meant the pictures
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from Pinterest, TripAdvisor and Twitter were taken off the final list, as their users seldom uploaded more than one or two pictures on the same day. Additionally, there was much less quantitative material to collect in these three social networks, Pinterest being the least rich of the three sources. The final result consisted of 9213 pictures and 23305 tags (Table 3). The pictures from each source were not established beforehand, and instead reflect the best efforts of the data collectors and the ease with which pictures could be found and tagged.

Table 3. Photos admitted to the picture database.

	Number of collected pictures	% of collected pictures
Facebook	2167	23.52
Flickr	2478	26.90
Instagram	1503	16.31
Panoramio	3065	33.27
Total	9213	

Source: Authors

In the aforementioned database, each photo was entered with its basic data (URL, date of access, etc.) and subsequently the main motive in the picture was tagged. A list of typologies corresponding to Cartagena's main attractions was set up according to FONTUR and Mincit (2014), and these were grouped into the following 7 overarching categories: Civil Architecture, Religious Architecture, Public Spaces, (standalone) Monuments, Hotels (and their different ambiances), Beaches and People.

Data collection for videos

As for videos, a total of 74 videos were taken from Vimeo and YouTube. In order to make them comparable to the pictures, it was assumed that a 1-second video is equal to 1 picture. The videos were taken from 2014 to 2016, again by volunteer students. Therefore, the video processing was identical to that described above for photos. The most popular video social networks, YouTube and Vimeo were chosen, though the former provided more material than the latter. The length of the tagged videos and other figures regarding the processed video data can be seen in Table 4:

Table 4. General Data for the tagged videos and video social networks.

Number of Tagged videos on VIMEO	27
Number of Tagged videos on YOUTUBE	44
Total Number of Processed Video Seconds	24610
Total Number of Video Tags	42408

Source: Authors

In order to ensure comparability, the same seven categories (Civil Architecture, Religious Architecture, Public Spaces, Monuments, Hotels, Beaches and People) were created for video and for pictures.

Data collection for text

1 The third type of collected data is text. Texts were extracted from the social network sites
2 Twitter and Instagram using Mabrian Technologies software, which output a total number of
3 359350 textual mentions for Cartagena. Due to a software limitation, only the mentions included
4 in the time span from June 2017 to June 2018 could be collected, i.e., a full year. The software
5 did not output figures corresponding to customer keywords, and instead performed a text
6 analysis with its own keywords (see Table 7) as well as a semantic analysis, in order to assign a
7 tourism typology to each mention, dividing the resulting output into 9 categories.
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9 In order to have comparable results among images and text, the 9 categories output by the text
10 software were grouped into 2 overarching classes: General Tourism and Niche Tourism, and so
11 were the 7 image categories. These two overarching typologies are recognized by many authors
12 as perhaps the most primary tourism dichotomy (Novelli, 2005; Butcher, 2019). Thus, the 9
13 categories outputted by the text analysis system could be matched to the 7 categories created
14 for photos and videos. To do so, the following categories of text tags were considered to
15 correspond to General Tourism: 'Sun and Sand', 'Night Leisure', 'Shopping' and 'Families'. The
16 other categories output by the text software ('Cultural Tourism', 'Active Tourism', 'Food
17 Tourism', 'Wellness' and 'Nature Tourism') were considered niche modalities. As for photos and
18 videos, the following criteria were applied: 'Civil Architecture', 'Religious Architecture' and
19 'People' were considered niche. The other four image categories ('Public Spaces', 'Monuments',
20 'Hotels', 'Beaches') were considered general (Table 7).
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27 **5.2. Data analysis methods for congruence results**

28 In order to analyze the results, the authors used several quantitative analysis methods. For the
29 analysis of the photo tag categories and the social networks sites, bivariate statistics such as
30 cross-tables and chi-square tests were put to use. In order to determine the level of congruence
31 between photos and videos, they were analyzed by applying Spearman's rank correlation on the
32 rankings of the represented types of attractions for both types of data (Tables 5 and 6). Another
33 cross-table was also set up to compare the number of text mentions belonging to the 'general'
34 and 'niche' overarching typologies (Table 7).
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41 **6. Results**

42 This section presents the results of processing the photos, videos and text, each separately. In
43 the case of photos and videos, the tables are similar due to the fact that, as said above, the 7
44 categories were applied to both photos (Table 5) and videos (Table 6), thus allowing for better
45 comparisons among them and setting the text results slightly apart.
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48 On table 5, the columns display the 7 attraction typologies. The rows correspond to the four
49 researched social network sites. A chi-square test was performed ($\chi^2 = 2711.5$, $df = 18$, p -value
50 < 0.001) and significant differences among some of the social network sites were found.
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53 The table shows the most and least tagged categories for each given social network. The
54 category 'People' appears as the most favored category, as Facebook (46.54%) and Instagram
55 (37.51%) display this category far above the other ones, whereas 'Hotels' and 'Religious
56 Architecture' are the least favored categories in each of the four networks. Flickr is the most
57 'balanced' network, i.e., the one displaying more percentage averages. Finally, the authors
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observe how Panoramio's most favored category is Civil Architecture, while the percentage for Instagram and Facebook is lower for this type of attraction.

Table 5. Classification of picture tags into categories, absolute numbers and percentages

Total photo tags per social network and type of attraction								
	Civil Arch.	Relig. Arch.	Public Spaces	Monu-ments	Hotels	Beaches	People	# TAGS
Facebook	398	195	460	941	71 ^b	228	1996 ^a	4289
	9.28%	4.55%	10.73%	21.94%	1.66%	5.32%	46.54%	100 %
Flickr	1491	327 ^b	417	958	347	617	1676 ^a	5833
	25.56%	5.61%	7.15%	16.42%	5.95%	10.58	28.73%	100 %
Instagram	487	75 ^b	243	428	223	335	1075 ^a	2866
	16.99%	2.62%	8.48%	14.93%	7.78%	11.69%	37.51%	100 %
Panoramio	3790 ^a	603	642	1303	580 ^b	1571	1828	10317
	36.74%	5.84%	6.22%	12.63%	5.62%	15.23%	17.72%	100 %
Total	6166	1200^b	1762	3630	1221	2751	6575^a	23305
	26.46%	5.15 %	7.56%	15.58%	5.24%	11.80%	28.21 %	100 %

^a Most tagged category for a given social network

^b Least tagged category for a given social network

Source: Authors

The video results, similar to the photos analysis, were collated and the mentions per type of attractions were counted. As mentioned above, the same 7 categories were created to tag the videos. The results of the video tagging in Table 6 show that 'People' is clearly the most favored category with more than 50% of tags, while 'Religious Architecture' is the least favored, with 3.8% of tags.

Table 6. Combined results summing up each category's tags across the different video social networks used.

Total video tags (combined social networks and type of attraction)								
	Civil Archit	Religious Archit	Public Spaces	Monu-ments	Hotels	Beaches	People	Number of TAGS
Absolute #	5591	1611 ^b	2904	3623	2141	4437	22101 ^a	42408
Percentage	13.18%	3.80%	6.85%	8.54%	5.05%	10.46%	52.12%	100%

^a Most tagged category

^b Least tagged category

Source: Authors' field work

The rankings of the listed types of attractions for photos (Table 5) and videos (Table 6) are highly correlated (Spearman's rank correlation coefficient = 0.965), showing a high level of congruence across these information sources. Comparisons between videos and photos also show that the results for certain categories are quite disparate: for the case of videos the category 'People' obtains 52.1% of the video tags whereas for the photo tags this category represents a 28.2%. 'Religious architecture' is the least tagged category for both photos and videos, receiving 3.8 % of video tags and a 5.1% of the photo tags. In short, video accentuates differences between categories.

Finally, Table 7 shows the results for text analysis. As stated in the previous section, the output types of tourism categories were grouped into 'niche' and 'general' to make it possible to conduct a comparison with the photos and videos. The table presents the identified types of tourism in Cartagena, alongside their mentions on social media and their classification into 'general' or 'niche'.

Table 7. Text mentions related to their tourism typology.

	Tourism typologies and number of text mentions			
	Absolute #	%	General	Niche
Culture	111399	31%	--	X
Sun and Sand	46716	13%	X	--
Night Leisure	39529	11%	X	--
Food Tourism	35935	10%	--	X
Families	35935	10%	X	--
Active Tourism	32342	9%	--	X
Shopping	25155	7%	X	--
Natural Tourism	17968	5%	--	X
Wellness	14374	4%	--	X
Total	359350	100%	41%	59%

Source: Authors' field work

7. Discussion and implications

This section discusses the data in an incremental way, i.e., pitching first the pictures of the four different networks against each other, followed by a discussion of stills vs video, and finally it discusses image vs text.

- a) Cross-comparing the pictures: a longitudinal view. The authors use longitudinal methodology to make comparisons between different social media platforms, rendered possible by the large time span of the collected data. First, it is interesting to see that for users of the extinct Panoramio, 'Civil Architecture' is by far the winning category (37%) plus a very high share of 'Beaches', the highest among the four social networks (15%). Panoramio has the oldest set of pictures on average and became extinct some years ago, so it shows the typical behavior of tourists to the city in the first half of the 2010s, as 'Civil Architecture' was by far the largest tourist-puller to the destination, followed by 'People' and 'Beaches'. Flickr, with pictures from a larger time span, shows a reversal of this trend but still balances intangibles and tangibles (People 29%, Civil Architecture 26%). The most recent sets of

1 pictures on Facebook and Instagram clearly show 'People' as the dominant category, and
2 thus come closer to the results of the video data set (Video 52%, Facebook 47%, Instagram
3 38%), demonstrating how, in the course of the last decade, tourist motivations have
4 substantially shifted. Interestingly, on Flickr, Facebook and Instagram, 'Civil Architecture'
5 comes before 'Beaches', so the current rankings of attractions in today's Cartagena is (1)
6 People, (2) Civil Architecture and (3) Sun and Sand. These findings present interesting
7 managerial conclusions and also show that the place's dynamics are correctly explained by
8 Richards (2018).
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11 b) Pictures vs. Video. These two types of UGC are the most easily compared of the three, as
12 the tags and categories were created for both by the authors following FONTUR and Mincit
13 (2014). In fact, pictures and video show a highly correlated ranking order for their categories:
14 'People' is the dominating category, followed by 'Civil Architecture', while 'Religious
15 Tourism' is the loser in both pictures and videos. However, 'People' has a much larger share
16 of tags in videos than in pictures (more than twice as much). The explanation here might be
17 that videographers interact much more with 'moving' motives like people, than with static
18 motives. The category of 'Religious Tourism' was introduced in the tables because, some
19 years ago, the local DMO started promoting this type of tourism. This was a bit of a
20 contradictory move, taking into account the large share of visitors interested in beaches and
21 leisure (Table 3). However, the present research confirms that the strong cultural and sun-
22 and-sand image of this destination cannot be changed easily by just 'adding' yet another
23 product: if this product is not adequate to the destination, it will fail, as has happened with
24 religious tourism in Cartagena. This finding is in line with the widely-accepted literature that
25 indicates that the overall image of a destination evolves very slowly, rendering short-term
26 changes difficult (Berrozpe et al. 2017).
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33 In both sets, another losing category is 'Hotels', which means that, notwithstanding the high
34 standard of some of the city's accommodation facilities, visitors give much more importance
35 to the destination's attractions than to the superstructure of the place, regardless of how
36 nice or well-built it is. This is a crucial finding full of implications in terms of place
37 management and business strategy.
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40 Also, in both stills and video, 'Civil Architecture' (the one including some of the most
41 renowned cultural landmarks in the city) comes second. Cartagena is (still) perceived as a
42 destination that has lots of built architecture to offer as tourist attractions. The DMO have
43 consistently pushed for these attractions to be the city's 'main' ones and to a large extent
44 they have succeeded, so the scores reached by 'Civil Architecture' seem logical when taking
45 into account the city's promotion efforts. However, if with Richards (2018), we posit an
46 evolution scenario in maturing destinations with local attractions going from basic to
47 tangible cultural attractions then to intangible cultural attractions, we can see that this shift
48 is taking place slowly but surely in Cartagena: in both pictures and videos, 'People' is the
49 dominating category and 'Civil Architecture' is the second one. Note that 'Beaches' are
50 behind intangibles and tangibles: at around a combined 11% in both sets, it is a very low
51 source of interest to the city's tourists, thus confirming the general pattern of the evolution
52 of attractions in a destination, from basic sun-and-sand to tangible attractions and then
53 intangible attractions.
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1 c) Image vs. Text. Comparing both pictures and videos with text is more difficult as the latter
2 data differs quite a lot from the other two data sets (see above). The data set is much larger
3 (359K text mention) than picture tags (23K) or video tags (42K), so it is worth trying to adjust
4 it to make a relevant comparison. To do this, the categories of photos and videos were
5 grouped into two overarching typologies: niche tourism and general tourism (Table 7). As it
6 has been said, the 9 categories output by the text analysis system were matched to the 7
7 categories created for photos and videos by generating the two overarching categories
8 'general tourism' and 'niche tourism' (see subsection 5.1). Grouped in this way, the photo
9 data set comes to 60% 'niche' pictures vs 40% 'general' type pictures. As for the video tags,
10 69% come under the 'niche' category and 31% under the 'general' category. An analysis of
11 the text tags indicates 59% of the text mentions in the 'niche' typology, whereas 41% belong
12 to 'general tourism'. Again, we see this destination nowadays attracting visitors mainly
13 because of its tangible and intangible cultural resources rather than its basic attractions.
14 Richard's evolutionary vision is thus more than confirmed for this case study.
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19 In short, we found that the three sets of data strongly correlate with each other in their ranked
20 preferences (with video showing a stronger bias towards 'People'), and the basic patterns and
21 rankings repeat themselves across the three different types of content. This shows a high
22 similarity in the tourists' perception of the destination, from which a high congruence in the
23 DMO's communication of the destination is inferred.
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28 **8. Conclusions, limitations and further research**

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30 This research finds an overall congruence among the three different types of UGC studied. A
31 different matter is whether the results correlate with the image that Cartagena's DMO has
32 pushed/projected over the last decade (see Section 4). It is worth underscoring that the DMO is
33 still promoting tangible heritage as the main product, demonstrating the office's lag in
34 responding to the preferences of visitors from recent years, as the emerging trend of visitors'
35 preferences points towards intangible heritage (see last paragraph in previous section).
36 Furthermore, the destinations' attractions have shifted forward in the context of Richards'
37 framework (2018). Therefore, if Cartagena wants to remain as a competitive destination, it must
38 push much more for 'People' as a product, which means promoting food, music, encounters
39 with locals, etc. The authors feel that if the DMO does not respond to these trends, the city's
40 communications will lose touch with visitors. This serves to caution DMOs to closely monitor
41 their visitors' UGC so as to be able to offer them the relevant attractions they are looking for in
42 the destination.
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48 It is also important to underscore the correlation between the main attractions for foreign
49 tourists visiting Cartagena on Table 2 and this paper's field work. Although Table 2 is only
50 partially applicable by our standards, as the category 'culture' therein does not differentiate
51 between people (i.e., intangibles) and cultural goods (tangibles), it also refers to 'niche' tourism
52 motivations, and particularly correlates with the text mentions table (Table 7). It is therefore
53 interesting to note this same result among online data collection methods and the more
54 traditional methods such as standard questionnaires.
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59 There are several limitations to the present research, notably the different dates among the
60 three different types of data collected, as stated above. The fact that video and text never
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1 overlap in dates might pose a limitation. Another issue is the origins of the visitors producing
2 UGC: Cartagena's foreign arrivals are some 10% to 12% of the total arrivals to the destination,
3 so the vast majority of its visitors are nationals. Even the most optimistic estimates based on the
4 recent years of the tourism boom in the city do not estimate the foreigners' share above 20%.
5 However, 60% of the text mentions collected stem from nationals, while about 40% are from
6 foreigners. Also, in the photo and video datasets, the presence of foreigners is much more
7 significant than their share of arrivals to the destination. Apart from the fact that foreigners
8 engage much more with social media than nationals, it also seems plausible that foreigners look
9 for more "added-value" products than beaches, whereas nationals use Cartagena more as a
10 relaxation destination. These facts might have introduced some biases into the data.
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13 Another possible bias regards 'People' as the absolute winning category. More detail was
14 needed to clearly ascertain what is inside this category, because there is a qualitative difference
15 if a tourist engages with locals or with other tourists, possibly from his/her own traveling group.
16 So, we had the 'People' images tagged in a second round to obtain more details and understand
17 what this category stands for. Here it was found that pictures and videos show mainly tourists
18 (65%) versus locals (35%). This moderates our assumption that 'People' is related to intangible
19 culture. However, it still is to a significant degree and looking into each social network helps
20 clarify this: in Panoramio and Flickr, the most pictured people are locals, whereas in Facebook,
21 Instagram and videos the absolute majority of pictured/recorded people are tourists. Therefore,
22 the different user profiles in each social media network also explain this different type of
23 engagement with the people encountered in the destination. Also, some visitors are deterred
24 from picturing/recording locals in Cartagena because some disguised locals ask for a tip when
25 pictured, or others show certain resistance towards being pictured. All these factors may have
26 introduced some kind of bias to the processed data.
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33 As for the field work, it is worth noticing that, in recent years, social media providers have
34 revealed the trend towards hiding relevant picture information (geolocation, date, hour...) and
35 closing their APIs. As providers seem more and more reluctant to share their information,
36 working with social media in the future will be more cumbersome and harder than it was for this
37 study.
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40 In any case, the usefulness of cross-studies like this one is confirmed, as is the usefulness of
41 longitudinal studies regarding these issues. Looking into multiple-source UGC may yield
42 interesting visions of the destination, which can benefit all the stakeholders. Open or unclear
43 questions on this paper might be further researched with more case studies like this one,
44 possibly from similar Latin American destinations, which may eventually confirm the validity of
45 the proposed methodology and the results as well as the possible generalizations of this case.
46 And finally, given the current pandemic context affecting tourism worldwide, a very interesting
47 research work to do in the future will be to check whether the post-COVID-19 UGC is similar or
48 differs from the pre-COVID-19 UGC. This would be a highly interesting contribution towards the
49 current discussion on COVID-19 and its impact on tourism, specifically on destination image.
50 However, this will be possible only in the mid-term once international tourism has resumed in
51 Cartagena.
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The perceived image of multi-asset tourist destinations: investigating congruence across different content types

ABSTRACT

Destination image has become a crucial topic in tourism studies. However, research has scarcely considered the impact of multiple online content sources when studying the image of destinations. This paper examines different types of user-generated content in order to evaluate whether and how this content reflects the evolution of a destination's image, and its congruence therein. The research focuses on a multi-asset tourist destination, i.e., one which draws different market segments. The results show a high degree of congruence and a regular evolution of the destination's attractions, thus strengthening existing theories on communication congruence as well as attractions' evolution theories.

KEYWORDS: destination image, user-generated content, multi-asset destinations, communication congruence, destination evolution

1. Introduction and goals

Destination image perception is a fundamental matter for destination managers, and consequently it has been widely researched (see Section 2: Literature review). Extant research underscores that communication directed towards potential visitors must be 'congruent,' as consistency in messaging increases the chances of the destination being chosen. This congruence should be achieved across various media channels (Van Rompay et al. 2010). In the case of destinations, it is crucial that this congruence is achieved over time, as the local attractions evolve from basic assets to more complex and rich pullers (Richards 2018).

Despite the important role image congruence plays in destination management, studies of congruence and evolution of destination assets are limited, as is the investigation into multi-channel UGC (User-generated content). The literature review section examines the wealth of studies on perceived destination image using a single type of UGC, which generally support their findings in either photos or text, but exposes the gap in understanding related to multi-source UGC.

The objective of this research is to better interpret the perception of a tourist destination from a quantitative perspective. Thus, this article contributes to the literature on UGC and perceived destination image. The researchers processed 9213 photos, 42408 video tags and 359350 texts from different social networks in order to understand discrepancies in congruence among different sources of UGC. Framed by congruence and evolution theories, and layering a longitudinal analysis, this paper examines the shift in perception of attractions as they relate to the point of view of multi-channel UGC. Therefore, the conclusions of this research will have theoretical as well as managerial implications as they relate to destination image strategy. While not the central research topic of the paper, it is a truism to say that the COVID-19 pandemic has hit the studied destination. Therefore, some comments on that matter are put forth in Section 4 (Context) as well as in the final section as a possible topic for further research.

2. Literature review: UGC for destination studies

How a tourist destination is photographed, videographed, or written about on websites or social media networks via UGC has been so amply studied since the 2000s that only a state-of-the-art article may render the width of the topic, see for example Camprubí and Coromina (2016) or Picazo and Moreno-Gil (2017). For their part, Lee and Rha (2018) confirm the interest of studies like the present one when they state that “tourism research is expanding into research on communication, CSR, and marketing.”

UGC has become a valuable tool for studying different aspects of a destination’s image, for example to better understand the destination’s image formation (Serna et al. 2013; Llodrà Riera et al. 2015; Micera and Crispino 2017), to compare the image projected by the Destination Management Organization (DMO) versus the one perceived by visitors (Stepchenkova and Zhan 2013; Nechita et al. 2019; Mariné-Roig and Ferrer-Rossell 2019), to better understand managerial challenges in the destination (Alcázar et al. 2014; Stepchenkova et al. 2015; Mariné-Roig and Anton Clavé 2016; Rahman et al. 2016; Jiménez-Barreto et al. 2019), to better market the place (Zhang et al. 2015; Doosti et al. 2016; Moro and Rita 2018; Luna-Cortés 2018; Tan 2018; Mohamed et al. 2019) or to improve visitors’ segmentation (Moliner-Velázquez et al. 2021).

These research efforts have not only resulted in recommendations that industry professionals may follow, but have on occasion generated new theories or refined existing ones (Munar 2011; Dickinson et al. 2011; Llodrà Riera et al. 2015) by comparing different image formation dynamics.

In their field work, researchers have used different techniques and data sources. For example, website mining (Hellemans and Govers 2005; Költringer and Dickinger 2015; Zhang et al. 2015; Mohamed et al. 2019), picture analysis (Negri and Vigolo 2015; Hunter 2016) or text analysis, be it from blogs (Akehust 2009; Çakmak and Isaac 2012; Tseng et al. 2015) or from Tripadvisor (Kladou and Mavragani 2015; Chiu and Leng 2017; Garay Tamajón and Cànoves Valiente 2017; Wong and Qi 2017). Due to its speed and dynamism, Twitter has been studied as a communication tool, such as when catastrophes affect destinations (Barbe et al. 2018; Oliveira and Huertas 2019). The use of Facebook has been more varied and has served multiple purposes, compare Park et al. (2016) studying the communication of tourism policies, to Jadhav et al. (2018) investigating tourists’ behaviour. The fact that online UGC content has been available for some years now means that longitudinal studies can start emerging (Wong and Qi 2017; Gálvez-Rodríguez et al. 2020). In a similar vein, the ‘traditional’ vs the ‘digital’ word-of-mouth are compared by Tan and Lin (2021).

However, most studies use a single type of UGC when studying destinations, and only a few research projects have combined more than one type of source. Table 1 gives a short overview of some of these publications. Until 2016, most research relied on Flickr and Panoramio to make comparative studies. The former has lost in significance and the latter was retired in 2016, so these sources are no longer available (or interesting) to today’s researchers.

Table 1. Studies dealing with multiple UGC types or sources.

Publication	Data Sources
Hadi et al. (2017)	GPS tracking and Visitors’ pictures on site
Johnson et al. (2016)	Flickr, Twitter and Swarm
Alivand and Hochmair (2016)	Flickr and Panoramio
Hochmair (2016)	Flickr and Panoramio
Kádár and Gede (2013)	Flickr and Panoramio

Thus, studies bringing together congruence and evolutionary theories with the analysis of multiple UGC sources are scarce, and hence a methodological research gap that this article covers.

3. Theoretical frameworks: Case Research, Congruence and Attractions' Evolution

The presented empirical evidence is from the city of Cartagena de Indias on the Colombian Caribbean coast, a multi-asset destination with several main attractions that the authors consider a suitable case study. Thus, this work is ultimately framed within Case Research Theory (Yin 1984; Stake 1995) as it discusses a concrete case from an empirical point of view with the aim of verifying (or modifying, as might be the case) existing theories (Eisenhardt 1989). Accordingly, in this work, empirical findings from a context are studied in-depth to verify theories and propose modifications. Within Case Research Theory, different types of cases are posited: exceptional cases, regular cases, comparative cases, etc. This paper assumes the framework outlined by Neape et al. (2006) as the discussed case is representative. In fact, Cartagena is an adequate proxy for significant samples of Latin American destinations, boasting historical attractions as well as beaches, allowing the results to be generalized to other destinations in the region. This study can also be underscored as one of the first of its kind conducted in a South American city, a geographical area that has been underexamined.

Congruence at different touchpoints appears to play a crucial role in the frictionless consumption process, be it in the choices made by consumers or in the organizations' communication directed towards them. Van Rompay et al. (2010) state that, in multimedia messages, congruence favors "processing efficiency," which in turn accounts for favorable attitudes from the consumers' perspective. According to them, there must be a "consistency among meanings associated with [different] elements within an (online) environment" (p. 23) to create congruence. In our research, searching for congruence means researching whether the UGC by visitors to Cartagena displays similar content across different social media channels, i.e., whether the perceived image for the tourist who post photos, videos, and/or text are congruent with each other or not.

Thus, the objective in this research is to study the level of congruence among these three types of UGC. For instance, a high level of congruence would mean that tourists perceive the destination in the same way, irrespective of the media they use, which can indicate high congruence in the perception of the destination's image – and favorable attitudes towards it. Correspondingly, a high level of congruence across different media outlets also means a correct strategy and use of these communication channels on behalf of the local DMO (Destination management organization).

A potential threat to image congruence is the fact that attractions in destinations and the destination's image are intrinsically dynamic factors. This is explained, among others, by Richards (2018), when he specifically asserts that destinations' attractions evolve over time going from basic attractions (for example sun and sand), to tangible cultural attractions (built military heritage in the case of Cartagena), and finally to intangible attractions. This is a value-

1 catching process and is pushed by both offer and demand. The data in this paper spans a wide
2 timeframe; this allows for longitudinal reflections on the evolution of attractions, the place's
3 projected image and the destination's perceived image.

4 **4. Context: Cartagena de Indias, Colombia : from a growing to a Covid-plagued** 5 **destination**

7 Located on the Colombian Caribbean coast, Cartagena is one of the country's well-established
8 destinations, receiving around 3 million visitors annually, approximately 10% of them foreigners.
9 Founded by the Spanish conquerors in the 1530s, Cartagena soon became a key port in the
10 colonization process of Hispanic America, leading to the construction of a consistent urban
11 defense system with walls and fortresses (Bassols and Soutto-Colón 2020). Today, these ancient
12 military structures, along with the historic and picturesque city center, play an iconic role in the
13 city's tourist landscape, landing a classification as UNESCO-marked heritage in 1984. Thanks to
14 its beaches, it was promoted as a sun and sand destination until around 2010. From then, it has
15 been increasingly sold by the local tourist board as a 'heritage destination'. This has allegedly
16 turned Cartagena into a 'multifaceted' destination, i.e., a tourist space where different
17 attractions geared towards different visitor segments coexist.

22 This 'multifaceted' or 'multi-asset' character of the destination raises important questions about
23 branding and management strategies (Bassols and Leicht 2020). It also raises questions about
24 how the city is perceived by its visitors, in terms of what they think the destination stands for
25 (i.e., beach or culture or other attractions). Therefore, a close study of the UGC by the tourists
26 might provide essential clues to guide future city developments.

29 One study on visitors to Cartagena worth mentioning is by Pinillos Castillo et al. (2017),
30 concerning the motivations of tourists from different markets of origin (Table 2). The study,
31 conducted among 320 tourists visiting Cartagena in 2016, found that a majority (55%) were
32 mainly interested in 'culture', whereas the remaining 45% were primarily interested in beaches
33 and leisure. North Americans, and especially and Europeans, showed a much wider gap (57% for
34 culture versus 43% for beaches), whereas Latin Americans -with the exception of Brazilians-
35 narrowed this gap (53% versus 47%). Thus, Table 2 shows that 'cultural motivations' are at the
36 fore.

41 **Table 2.** Main attractions for foreign tourists visiting Cartagena in 2016.

Origin	Cultural & Religious	Beach & Leisure
USA	44%	56%
Europe	70%	30%
<i>USA & Europe</i>	<i>57%</i>	<i>43%</i>
Brazil	82%	18%
Argentina	45%	55%
Mexico	33%	67%
<i>Latin America</i>	<i>53%</i>	<i>47%</i>
TOTAL	55%	45%

53 Source: Pinillos Castillo et al. (2017)

55 The general figures from the last decade show that Cartagena is a growing destination, or at
56 least it was until March 2020 when the COVID-19 pandemic stroke. The fact that flights were
57 called off for five months in Colombia (April to August 2020) as a cautionary measure towards
58 the pandemic caused foreign tourism to completely collapse. The reaction from the national
59 government in supporting the tourism industry has been relatively slow, according to several
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1 interviewed stakeholders. This situation has caused -nationwide- around one third less turnover
2 for hotels and restaurants, some two thirds for the transportation industry. The impact on the
3 largest tourist destinations in Colombia has been huge in terms of employment losses, however
4 the stakeholders see that Cartagena's position a well-established destination is not endangered
5 in the mid- to long term. Companies were able to quickly react to adapt to the new situation.
6 Since September 2020, the beaches and the historic centre have reopened at a slow pace and
7 with 'biosecurity' as an important argument. Meanwhile, the city has found back to its main
8 vocation in past decades: being the largest national holiday destination. In fact, businesses were
9 relatively happy with occupancies and expenditure levels in the Easter holiday 2021.
10 International tourism has been at a low, however some local companies say that events or
11 incentive trips are being delayed but not cancelled. Short term predictions are difficult to make
12 as the situation remains changeable as COVID-related travel warnings may appear (or disappear)
13 within few weeks. In fact, as stated by several stakeholders, short term planning remains a
14 challenge in the city for both the public and the private sectors.
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20 **5. Methodology and field work**

21 **5.1. Data collection**

22 The authors of this paper intend to quantitatively analyse large swaths of data collected using
23 web-scraping methods. Images for analysis were downloaded from Facebook, Flickr, Instagram,
24 and the extinct Panoramio, and videos were taken from the sites Vimeo and YouTube. Texts
25 were taken from Twitter and Instagram with the software developed by Mabrian Technologies.
26 Purposely, different social picture and video networks were chosen so as to research any
27 possible gaps or incongruences among these.
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34 *Data collection for photos*

35 Concerning the pictures, the following seven social networks were considered from the outset:
36 Facebook, Flickr, Instagram, the extinct Panoramio, Pinterest, TripAdvisor and Twitter. These
37 sites were trawled for pictures of Cartagena using relevant keywords, randomly collecting the
38 output produced by each social network's algorithm in response to highly relevant keywords
39 ('Cartagena', 'Cartagena de Indias', 'Cartagena, Colombia', etc.). The field work was carried out
40 over 6 semesters, from 2015 to 2018, by volunteer tourism undergraduate students at the
41 Universidad Autónoma del Caribe in Barranquilla, Colombia. A total of 15 students were involved
42 in the project at different times. Each student was trained carefully before starting tagging, so
43 that the tagging criteria would be consistently upheld for the duration of the whole project. The
44 latest official mapping of local attractions from 2014 provided the basis for setting up categories
45 and subcategories to tag the pictures (FONTUR and MinCIT, 2014). The final result was 10089
46 pictures with 28219 tags. In terms of dates, the pictures cover a timeframe from 2006 to 2018,
47 with the majority of them taken between 2010 and 2016.
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54 However, some limitations imposed on the collected data meant some of the mentioned social
55 networks were rejected. First, we did not want single pictures on the database, but rather
56 pictures taken while the users were *en route* in the city, thus conveying an attitude of in-depth
57 exploration. For this reason, only sets of a minimum of 4 pictures taken on the same day were
58 entered into the database. In some instances, 3 pictures were accepted. This meant the pictures
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from Pinterest, TripAdvisor and Twitter were taken off the final list, as their users seldom uploaded more than one or two pictures on the same day. Additionally, there was much less quantitative material to collect in these three social networks, Pinterest being the least rich of the three sources. The final result consisted of 9213 pictures and 23305 tags (Table 3). The pictures from each source were not established beforehand, and instead reflect the best efforts of the data collectors and the ease with which pictures could be found and tagged.

Table 3. Photos admitted to the picture database.

	Number of collected pictures	% of collected pictures
Facebook	2167	23.52
Flickr	2478	26.90
Instagram	1503	16.31
Panoramio	3065	33.27
Total	9213	

Source: Authors

In the aforementioned database, each photo was entered with its basic data (URL, date of access, etc.) and subsequently the main motive in the picture was tagged. A list of typologies corresponding to Cartagena's main attractions was set up according to FONTUR and Mincit (2014), and these were grouped into the following 7 overarching categories: Civil Architecture, Religious Architecture, Public Spaces, (standalone) Monuments, Hotels (and their different ambiances), Beaches and People.

Data collection for videos

As for videos, a total of 74 videos were taken from Vimeo and YouTube. In order to make them comparable to the pictures, it was assumed that a 1-second video is equal to 1 picture. The videos were taken from 2014 to 2016, again by volunteer students. Therefore, the video processing was identical to that described above for photos. The most popular video social networks, YouTube and Vimeo were chosen, though the former provided more material than the latter. The length of the tagged videos and other figures regarding the processed video data can be seen in Table 4:

Table 4. General Data for the tagged videos and video social networks.

Number of Tagged videos on VIMEO	27
Number of Tagged videos on YOUTUBE	44
Total Number of Processed Video Seconds	24610
Total Number of Video Tags	42408

Source: Authors

In order to ensure comparability, the same seven categories (Civil Architecture, Religious Architecture, Public Spaces, Monuments, Hotels, Beaches and People) were created for video and for pictures.

Data collection for text

1 The third type of collected data is text. Texts were extracted from the social network sites
2 Twitter and Instagram using Mabrian Technologies software, which output a total number of
3 359350 textual mentions for Cartagena. Due to a software limitation, only the mentions included
4 in the time span from June 2017 to June 2018 could be collected, i.e., a full year. The software
5 did not output figures corresponding to customer keywords, and instead performed a text
6 analysis with its own keywords (see Table 7) as well as a semantic analysis, in order to assign a
7 tourism typology to each mention, dividing the resulting output into 9 categories.
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9 In order to have comparable results among images and text, the 9 categories output by the text
10 software were grouped into 2 overarching classes: General Tourism and Niche Tourism, and so
11 were the 7 image categories. These two overarching typologies are recognized by many authors
12 as perhaps the most primary tourism dichotomy (Novelli, 2005; Butcher, 2019). Thus, the 9
13 categories outputted by the text analysis system could be matched to the 7 categories created
14 for photos and videos. To do so, the following categories of text tags were considered to
15 correspond to General Tourism: 'Sun and Sand', 'Night Leisure', 'Shopping' and 'Families'. The
16 other categories output by the text software ('Cultural Tourism', 'Active Tourism', 'Food
17 Tourism', 'Wellness' and 'Nature Tourism') were considered niche modalities. As for photos and
18 videos, the following criteria were applied: 'Civil Architecture', 'Religious Architecture' and
19 'People' were considered niche. The other four image categories ('Public Spaces', 'Monuments',
20 'Hotels', 'Beaches') were considered general (Table 7).
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27 **5.2. Data analysis methods for congruence results**

28 In order to analyze the results, the authors used several quantitative analysis methods. For the
29 analysis of the photo tag categories and the social networks sites, bivariate statistics such as
30 cross-tables and chi-square tests were put to use. In order to determine the level of congruence
31 between photos and videos, they were analyzed by applying Spearman's rank correlation on the
32 rankings of the represented types of attractions for both types of data (Tables 5 and 6). Another
33 cross-table was also set up to compare the number of text mentions belonging to the 'general'
34 and 'niche' overarching typologies (Table 7).
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41 **6. Results**

42 This section presents the results of processing the photos, videos and text, each separately. In
43 the case of photos and videos, the tables are similar due to the fact that, as said above, the 7
44 categories were applied to both photos (Table 5) and videos (Table 6), thus allowing for better
45 comparisons among them and setting the text results slightly apart.
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48 On table 5, the columns display the 7 attraction typologies. The rows correspond to the four
49 researched social network sites. A chi-square test was performed ($\chi^2 = 2711.5$, $df = 18$, p -value
50 < 0.001) and significant differences among some of the social network sites were found.
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53 The table shows the most and least tagged categories for each given social network. The
54 category 'People' appears as the most favored category, as Facebook (46.54%) and Instagram
55 (37.51%) display this category far above the other ones, whereas 'Hotels' and 'Religious
56 Architecture' are the least favored categories in each of the four networks. Flickr is the most
57 'balanced' network, i.e., the one displaying more percentage averages. Finally, the authors
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observe how Panoramio's most favored category is Civil Architecture, while the percentage for Instagram and Facebook is lower for this type of attraction.

Table 5. Classification of picture tags into categories, absolute numbers and percentages

Total photo tags per social network and type of attraction								
	Civil Arch.	Relig. Arch.	Public Spaces	Monu-ments	Hotels	Beaches	People	# TAGS
Facebook	398	195	460	941	71 ^b	228	1996 ^a	4289
	9.28%	4.55%	10.73%	21.94%	1.66%	5.32%	46.54%	100 %
Flickr	1491	327 ^b	417	958	347	617	1676 ^a	5833
	25.56%	5.61%	7.15%	16.42%	5.95%	10.58	28.73%	100 %
Instagram	487	75 ^b	243	428	223	335	1075 ^a	2866
	16.99%	2.62%	8.48%	14.93%	7.78%	11.69%	37.51%	100 %
Panoramio	3790 ^a	603	642	1303	580 ^b	1571	1828	10317
	36.74%	5.84%	6.22%	12.63%	5.62%	15.23%	17.72%	100 %
Total	6166	1200^b	1762	3630	1221	2751	6575^a	23305
	26.46%	5.15 %	7.56%	15.58%	5.24%	11.80%	28.21 %	100 %

^a Most tagged category for a given social network

^b Least tagged category for a given social network

Source: Authors

The video results, similar to the photos analysis, were collated and the mentions per type of attractions were counted. As mentioned above, the same 7 categories were created to tag the videos. The results of the video tagging in Table 6 show that 'People' is clearly the most favored category with more than 50% of tags, while 'Religious Architecture' is the least favored, with 3.8% of tags.

Table 6. Combined results summing up each category's tags across the different video social networks used.

Total video tags (combined social networks and type of attraction)								
	Civil Archit	Religious Archit	Public Spaces	Monu-ments	Hotels	Beaches	People	Number of TAGS
Absolute #	5591	1611 ^b	2904	3623	2141	4437	22101 ^a	42408
Percentage	13.18%	3.80%	6.85%	8.54%	5.05%	10.46%	52.12%	100%

^a Most tagged category

^b Least tagged category

Source: Authors' field work

The rankings of the listed types of attractions for photos (Table 5) and videos (Table 6) are highly correlated (Spearman's rank correlation coefficient = 0.965), showing a high level of congruence across these information sources. Comparisons between videos and photos also show that the results for certain categories are quite disparate: for the case of videos the category 'People' obtains 52.1% of the video tags whereas for the photo tags this category represents a 28.2%. 'Religious architecture' is the least tagged category for both photos and videos, receiving 3.8 % of video tags and a 5.1% of the photo tags. In short, video accentuates differences between categories.

Finally, Table 7 shows the results for text analysis. As stated in the previous section, the output types of tourism categories were grouped into 'niche' and 'general' to make it possible to conduct a comparison with the photos and videos. The table presents the identified types of tourism in Cartagena, alongside their mentions on social media and their classification into 'general' or 'niche'.

Table 7. Text mentions related to their tourism typology.

	Tourism typologies and number of text mentions			
	Absolute #	%	General	Niche
Culture	111399	31%	--	X
Sun and Sand	46716	13%	X	--
Night Leisure	39529	11%	X	--
Food Tourism	35935	10%	--	X
Families	35935	10%	X	--
Active Tourism	32342	9%	--	X
Shopping	25155	7%	X	--
Natural Tourism	17968	5%	--	X
Wellness	14374	4%	--	X
Total	359350	100%	41%	59%

Source: Authors' field work

7. Discussion and implications

This section discusses the data in an incremental way, i.e., pitching first the pictures of the four different networks against each other, followed by a discussion of stills vs video, and finally it discusses image vs text.

- a) Cross-comparing the pictures: a longitudinal view. The authors use longitudinal methodology to make comparisons between different social media platforms, rendered possible by the large time span of the collected data. First, it is interesting to see that for users of the extinct Panoramio, 'Civil Architecture' is by far the winning category (37%) plus a very high share of 'Beaches', the highest among the four social networks (15%). Panoramio has the oldest set of pictures on average and became extinct some years ago, so it shows the typical behavior of tourists to the city in the first half of the 2010s, as 'Civil Architecture' was by far the largest tourist-puller to the destination, followed by 'People' and 'Beaches'. Flickr, with pictures from a larger time span, shows a reversal of this trend but still balances intangibles and tangibles (People 29%, Civil Architecture 26%). The most recent sets of

1 pictures on Facebook and Instagram clearly show 'People' as the dominant category, and
2 thus come closer to the results of the video data set (Video 52%, Facebook 47%, Instagram
3 38%), demonstrating how, in the course of the last decade, tourist motivations have
4 substantially shifted. Interestingly, on Flickr, Facebook and Instagram, 'Civil Architecture'
5 comes before 'Beaches', so the current rankings of attractions in today's Cartagena is (1)
6 People, (2) Civil Architecture and (3) Sun and Sand. These findings present interesting
7 managerial conclusions and also show that the place's dynamics are correctly explained by
8 Richards (2018).
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11 b) Pictures vs. Video. These two types of UGC are the most easily compared of the three, as
12 the tags and categories were created for both by the authors following FONTUR and Mincit
13 (2014). In fact, pictures and video show a highly correlated ranking order for their categories:
14 'People' is the dominating category, followed by 'Civil Architecture', while 'Religious
15 Tourism' is the loser in both pictures and videos. However, 'People' has a much larger share
16 of tags in videos than in pictures (more than twice as much). The explanation here might be
17 that videographers interact much more with 'moving' motives like people, than with static
18 motives. The category of 'Religious Tourism' was introduced in the tables because, some
19 years ago, the local DMO started promoting this type of tourism. This was a bit of a
20 contradictory move, taking into account the large share of visitors interested in beaches and
21 leisure (Table 3). However, the present research confirms that the strong cultural and sun-
22 and-sand image of this destination cannot be changed easily by just 'adding' yet another
23 product: if this product is not adequate to the destination, it will fail, as has happened with
24 religious tourism in Cartagena. This finding is in line with the widely-accepted literature that
25 indicates that the overall image of a destination evolves very slowly, rendering short-term
26 changes difficult (Berrozpe et al. 2017).
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33 In both sets, another losing category is 'Hotels', which means that, notwithstanding the high
34 standard of some of the city's accommodation facilities, visitors give much more importance
35 to the destination's attractions than to the superstructure of the place, regardless of how
36 nice or well-built it is. This is a crucial finding full of implications in terms of place
37 management and business strategy.
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40 Also, in both stills and video, 'Civil Architecture' (the one including some of the most
41 renowned cultural landmarks in the city) comes second. Cartagena is (still) perceived as a
42 destination that has lots of built architecture to offer as tourist attractions. The DMO have
43 consistently pushed for these attractions to be the city's 'main' ones and to a large extent
44 they have succeeded, so the scores reached by 'Civil Architecture' seem logical when taking
45 into account the city's promotion efforts. However, if with Richards (2018), we posit an
46 evolution scenario in maturing destinations with local attractions going from basic to
47 tangible cultural attractions then to intangible cultural attractions, we can see that this shift
48 is taking place slowly but surely in Cartagena: in both pictures and videos, 'People' is the
49 dominating category and 'Civil Architecture' is the second one. Note that 'Beaches' are
50 behind intangibles and tangibles: at around a combined 11% in both sets, it is a very low
51 source of interest to the city's tourists, thus confirming the general pattern of the evolution
52 of attractions in a destination, from basic sun-and-sand to tangible attractions and then
53 intangible attractions.
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1 c) Image vs. Text. Comparing both pictures and videos with text is more difficult as the latter
2 data differs quite a lot from the other two data sets (see above). The data set is much larger
3 (359K text mention) than picture tags (23K) or video tags (42K), so it is worth trying to adjust
4 it to make a relevant comparison. To do this, the categories of photos and videos were
5 grouped into two overarching typologies: niche tourism and general tourism (Table 7). As it
6 has been said, the 9 categories output by the text analysis system were matched to the 7
7 categories created for photos and videos by generating the two overarching categories
8 'general tourism' and 'niche tourism' (see subsection 5.1). Grouped in this way, the photo
9 data set comes to 60% 'niche' pictures vs 40% 'general' type pictures. As for the video tags,
10 69% come under the 'niche' category and 31% under the 'general' category. An analysis of
11 the text tags indicates 59% of the text mentions in the 'niche' typology, whereas 41% belong
12 to 'general tourism'. Again, we see this destination nowadays attracting visitors mainly
13 because of its tangible and intangible cultural resources rather than its basic attractions.
14 Richard's evolutionary vision is thus more than confirmed for this case study.
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19 In short, we found that the three sets of data strongly correlate with each other in their ranked
20 preferences (with video showing a stronger bias towards 'People'), and the basic patterns and
21 rankings repeat themselves across the three different types of content. This shows a high
22 similarity in the tourists' perception of the destination, from which a high congruence in the
23 DMO's communication of the destination is inferred.
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28 **8. Conclusions, limitations and further research**

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30 This research finds an overall congruence among the three different types of UGC studied. A
31 different matter is whether the results correlate with the image that Cartagena's DMO has
32 pushed/projected over the last decade (see Section 4). It is worth underscoring that the DMO is
33 still promoting tangible heritage as the main product, demonstrating the office's lag in
34 responding to the preferences of visitors from recent years, as the emerging trend of visitors'
35 preferences points towards intangible heritage (see last paragraph in previous section).
36 Furthermore, the destinations' attractions have shifted forward in the context of Richards'
37 framework (2018). Therefore, if Cartagena wants to remain as a competitive destination, it must
38 push much more for 'People' as a product, which means promoting food, music, encounters
39 with locals, etc. The authors feel that if the DMO does not respond to these trends, the city's
40 communications will lose touch with visitors. This serves to caution DMOs to closely monitor
41 their visitors' UGC so as to be able to offer them the relevant attractions they are looking for in
42 the destination.
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48 It is also important to underscore the correlation between the main attractions for foreign
49 tourists visiting Cartagena on Table 2 and this paper's field work. Although Table 2 is only
50 partially applicable by our standards, as the category 'culture' therein does not differentiate
51 between people (i.e., intangibles) and cultural goods (tangibles), it also refers to 'niche' tourism
52 motivations, and particularly correlates with the text mentions table (Table 7). It is therefore
53 interesting to note this same result among online data collection methods and the more
54 traditional methods such as standard questionnaires.
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59 There are several limitations to the present research, notably the different dates among the
60 three different types of data collected, as stated above. The fact that video and text never
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1 overlap in dates might pose a limitation. Another issue is the origins of the visitors producing
2 UGC: Cartagena's foreign arrivals are some 10% to 12% of the total arrivals to the destination,
3 so the vast majority of its visitors are nationals. Even the most optimistic estimates based on the
4 recent years of the tourism boom in the city do not estimate the foreigners' share above 20%.
5 However, 60% of the text mentions collected stem from nationals, while about 40% are from
6 foreigners. Also, in the photo and video datasets, the presence of foreigners is much more
7 significant than their share of arrivals to the destination. Apart from the fact that foreigners
8 engage much more with social media than nationals, it also seems plausible that foreigners look
9 for more "added-value" products than beaches, whereas nationals use Cartagena more as a
10 relaxation destination. These facts might have introduced some biases into the data.
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13 Another possible bias regards 'People' as the absolute winning category. More detail was
14 needed to clearly ascertain what is inside this category, because there is a qualitative difference
15 if a tourist engages with locals or with other tourists, possibly from his/her own traveling group.
16 So, we had the 'People' images tagged in a second round to obtain more details and understand
17 what this category stands for. Here it was found that pictures and videos show mainly tourists
18 (65%) versus locals (35%). This moderates our assumption that 'People' is related to intangible
19 culture. However, it still is to a significant degree and looking into each social network helps
20 clarify this: in Panoramio and Flickr, the most pictured people are locals, whereas in Facebook,
21 Instagram and videos the absolute majority of pictured/recorded people are tourists. Therefore,
22 the different user profiles in each social media network also explain this different type of
23 engagement with the people encountered in the destination. Also, some visitors are deterred
24 from picturing/recording locals in Cartagena because some disguised locals ask for a tip when
25 pictured, or others show certain resistance towards being pictured. All these factors may have
26 introduced some kind of bias to the processed data.
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33 As for the field work, it is worth noticing that, in recent years, social media providers have
34 revealed the trend towards hiding relevant picture information (geolocation, date, hour...) and
35 closing their APIs. As providers seem more and more reluctant to share their information,
36 working with social media in the future will be more cumbersome and harder than it was for this
37 study.
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40 In any case, the usefulness of cross-studies like this one is confirmed, as is the usefulness of
41 longitudinal studies regarding these issues. Looking into multiple-source UGC may yield
42 interesting visions of the destination, which can benefit all the stakeholders. Open or unclear
43 questions on this paper might be further researched with more case studies like this one,
44 possibly from similar Latin American destinations, which may eventually confirm the validity of
45 the proposed methodology and the results as well as the possible generalizations of this case.
46 And finally, given the current pandemic context affecting tourism worldwide, a very interesting
47 research work to do in the future will be to check whether the post-COVID-19 UGC is similar or
48 differs from the pre-COVID-19 UGC. This would be a highly interesting contribution towards the
49 current discussion on COVID-19 and its impact on tourism, specifically on destination image.
50 However, this will be possible only in the mid-term once international tourism has resumed in
51 Cartagena.
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