



Projected and Perceived Destination Image of Tyrol on Instagram

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Abstract. Alpine tourism destinations are highly dependent on their destination image. On Social Media, this perceived image relies heavily on user-generated content (UGC), which cannot be completely controlled by Destination Marketing Organizations (DMOs). Potential tourists prefer informing themselves about travel destinations online, as UGC provides an unbiased resource reflecting a tourist's perception. On Instagram, DMOs focus mainly on visual materials for projecting the intended destination image, affecting users' perceptions, attitudes as well as travel behaviour, thus, alignment between the projected and perceived destination image is beneficial. This study compares photos collected from Instagram adopting a comparative content analysis approach together with Chi-square tests and Co-occurrence analysis, in order to identify differences of the projected and perceived destination image between posts by the Tyrol Tourist Board and actual tourists with the *visittyrol* hashtag. Findings are visualized via aggregated destination image maps. Results identify Nature & Landscapes, People, Plants, Architecture & Buildings and Residents' Lives as the five predominant attributes of the projected Tyrolean destination image. However, tourists tend to be more interested in capturing nature, vegetation, leisure activities and domesticated animals, rather than lives of locals and their traditions. Similarities are found in illustrations of outdoor sports, other leisure activities and architecture.

Keywords: Destination image · Comparative visual content analysis · Destination image maps · Instagram

1 Introduction

Alpine tourism destinations are highly dependent on their destination image. This formed image relies on many attributes, which cannot be controlled completely by Destination Marketing Organizations (DMOs) and therefore leads to constrained alignments of their promoted attributes [1]. One important factor in modern destination image creation is user-generated content (UGC), which is only manageable to a limited degree, as tourists' perceptions and actions are not within the direct control of DMOs. Tourists share data, text and media of destinations voluntarily, because they want to earn recognition for their contributions within their personal circle, which makes this content especially useful to others, as they get access to an unbiased information source, which is perceived as more meaningful and trustworthy. Platforms focused on

UGC have been increasing over the last decade, thereby extending the information available to potential visitors [2]. The experience-based nature of tourism products sees the overall image of a destination as a construct of various integrated elements that are highly dependent on tourists' perceptions and not necessarily on the attributes themselves [3]. Stepchenkova and Zhan [4] see photographic content of a destination, distributed either by DMOs or by travellers, as a means of image communication to form and reform tourists' perceptions about a place. Naturally, tourism is regarded as a particularly visual field, focusing mainly on pictorial material for promoting the intended destination image [5]. When such visual material is combined with Social Media, enormous potential can be found in easy access, convenient search options, interactive real-time communication and convenient updating of content, thus, enhancing the effect of pictorial content on destination image formation [6]. Especially when tourists and their expectations are involved, DMOs realized that more authentic and real photographs result in a better congruence between expectation and reality, subsequently increasing re-visit intentions [7, 8]. Therefore, DMOs are confronted with the challenge to find the perfect balance between visually appealing and authentic photographs to promote their destinations, while considering a great variety of motives. Consequently, research on destination image in regard to visual Social Media channels (e.g., Instagram) is needed to establish a distinct framework for the evaluation of projected and perceived destination image [2, 9].

This study aims to build on the existing body of literature on visual destination image regarding the comparability of projected and perceived destination image, thereby, extending the influence of the field. Our objectives are (1) to determine the predominant attributes of the Tyrolean destination image on Instagram and (2) to confirm congruency between the pictorial material projected by the Tirol Tourist Board as a central destination marketing organization (cDMO) and UGC. Because of the scarce literature available in the field of destination image distributed on visual Social Media channels and the lack of an established framework for the evaluation, the study design is in line with a study by Stepchenkova and Zhan [4], applying a comparative visual content analysis. The following research questions are proposed:

- What are the predominant attributes representing the destination image of Tyrol deduced from Instagram as an image-sharing Social Media?
- What are the major differences between the holistic destination image projected by the Tirol Tourist Board and the destination image perceived by tourists?

2 Related Work

Destination image is one of the most researched fields in tourism [9]. The term *image* is defined as a combination of meanings “*by which an object is known and through which people describe, remember and relate to it. That is, an image is the net result of the interaction of a person's beliefs, ideas, feelings, expectations and impressions about an object*” [10]. Beerli and Martín [11] describe the term image as an idea that is constructed by a person's interpretation as an emotional and reasoned inference of perceptive-cognitive evaluations, meaning the consumer's personal knowledge and

beliefs of an object including also the appraisal of all perceived attributes, as well as affective assessments concerning a consumer's feelings about the object. Gartner [3] sees the image of a product as a construct composed of several integrated elements including brand image and attribute perceptions of individuals, subsequently forming the overall image. Because the destination as a product of tourism is experience-based, it is more dependent on attribute perceptions than on the actual attributes. Therefore, *destination image* is an aggregation of impressions that is mentally condensed and can be used for efficient decision-making. Destination image, understood as an individual's mental destination representation, is deeply rooted in research done by or for the tourism industry, and has major implications for tourism marketing [12–14].

Xiang and Gretzel [15] understand Social Media websites as online applications that hold UGC, containing media content made by consumers about unique experiences, which are subsequently shared online to be accessed openly by interested readers. Social Media is mainly used for information search in travel planning, but trustworthiness is needed for the information to be actually used. Tourists are enormously active on Social Media, spreading their experiences and knowledge about travel-related topics. Actual tourists' experiences are trusted more by followers than official sources [16], thereby affecting destination-related travel decisions [17].

Perceived and projected image share a blurry relationship [4]. The projected image, also referred to as transferred image, defines an image created by various sources, ranging from promotional activities within the tourism industry, including also promotional activities of DMOs, to news about the destination. It illustrates the image that the tourism industry wants to establish in the minds of visitors. In tourist motivation research, the concept of push and pull factors is generally accepted, which states that travel behaviour is influenced by those forces [18, 19]. Push factors are socio-psychological motivations, which bring the potential tourist to travel. Once the decision to travel has been made, the pull factors attract the potential tourist to a certain destination [20]. The image can be transferred by several types of communication, ranging from DMOs promotional channels to the local and regional tourism boards and even to all available media channels. Consequently, the push element can be attributed to the perceived image, as it includes a tourist's needs, expectations, and the motivations behind the travel [19]. Several studies define perceived image as the image formed in the minds of potential tourists [21, 22]. Hu and Ritchie [1] argue that the perceived image can be viewed as a concept affected by previous familiarity and knowledge, perception of the image at the destination, and the subsequent existing preference of that information. Moreover, the perceived image is formed by information received through indirect sources and experiences at the destination; it represents the image a tourist forms in reality [23]. Nevertheless, there is no agreement on the precise factors that should be considered [11]. Hunt [24] assumes that consumers prefer destinations that evoke and reinforce their own self-image, whereby the actual and perceived destination image are not necessarily identical. Influential attributes are defined as landscape, climate, population and the perceived impressiveness of tourist attractions and tourist activities available. Urry [25] proposes the concept of the *tourist gaze*, arguing that the tourism industry is creating a certain imagery for a selected destination. This imagery is then forced on visitors as a distinct sort of view, resulting in a dependence between tourism as a producing force and photography as a tourist activity.

Kim and Stepchenkova [26] identify a photograph consisting of *manifest* and *latent* content, which are entirely different. Manifest content includes all types of signs depicted in the image (e.g. features of nature, people or buildings), whereas latent content is not tangible and deals with wider image implications that are not shown by the appearances alone. Because of the high subjectivity involved in deriving latent content, manifest content is more suitable to be interpreted quantitatively as done in surveys, such as proposed by Nixon, Popova, and Önder [27] to evaluate the most effective types of photos on Instagram for influencing the previous destination image, or content analysis. More recent publications used an image annotation approach as content analysis to distinguish the projected destination image focusing more on pictorial online sources, such as Instagram [25]. Quantitative visual content analysis is performed objectively and quantifies recorded visual representations using reliable and explicitly defined categories. Such an approach is used in order to identify representations of attributes like people, events, and situations. However, the selected scope of visual material needs to be set before the actual analysis starts, including a sample size and the exact domain. Thus, emerging questions about the possibility of generalizing the results should be posed and it must be emphasized that visual content analysis does not examine individual images, but the entire representation [27].

3 Methodology

This study builds on the existing literature of visual destination image regarding the comparability of projected and perceived destination image, to extend the influence of the field. The approach of comparative content analysis proposed by Stepchenkova and Zhan [4] is exploratively applied to Tyrol as a tourism destination. The objective is to compare images of Tyrol collected from the official Instagram account of the Tirol Tourist Board **visittirol** and from tourists' private accounts, under the hashtag *visit-tyrol*, in order to identify differences in pre-defined categories. Moreover, methodological limitations, which have been criticized before, were taken into consideration, such as the proposition to include a key performance indicator measuring awareness in the data collection process. Because of the persuasive power of photographs other people have already liked or commented on, only posts with more than 1000 likes were selected for the cDMO sample. Subsequently an overview of the various empirical research aims and the corresponding selected approaches is provided:

1. *What are the predominant attributes representing the destination image of Tyrol deduced from visual content on the Instagram account of the Tirol Tourist Board and from visual content on tourists' private accounts?*

Based on published studies, a comparative content analysis methodology is adopted, to examine the collected visual samples of Tyrol. To establish congruity of the two visual samples, Chi-square tests are executed on the attribute frequency data.

2. *How does the aggregated image of Tyrol as an alpine tourism destination look constructed from the visual sample of the Tirol Tourist Board in contrast to the one constructed from the visual sample generated by tourists?*

Both image maps are constructed by building on statistical frequency and Co-occurrence analysis of destination attributes to construct those image maps [28].

3. *What are the major differences between the destination image projected by the Tirol Tourist Board and the destination image perceived and transferred by tourists? What destination attributes are likely to occur together on photographs?*

We compare the aggregated image maps of Tyrol, including attribute frequency data as well as co-occurrences of certain categories, in order to find major differences within the two visual samples.

3.1 Data Collection and Category Development

The projected image of the alpine destination Tyrol, Austria was examined by utilizing photographs posted on the official Instagram account of the Tirol Tourist Board **visittirol**. The account covers a collection of 1250 posts, ranging thematically from nature in all seasons, architecture, people and sports to food, and has around 116.000 followers. Here, 333 photographs were selected and downloaded within one year, starting from April 1, 2018. For the perceived image of Tyrol, the visual content posted by tourists on Instagram with the hashtag *visittyrol* was utilized. This hashtag indicates that the posts were made by visitors of Tyrol instead of local residents. Overall, 11768 posts were collected, and 8007 images were chosen, posted also within a year, starting from April 1, 2018, in order to ensure consistency. Those visual posts were weighted according to monthly numbers and subsequently, two samples of 300 images each were randomly selected for analysis.

Pictures with less than 1000 likes were excluded as well as pictures from users, in which it seemed evident that they are company-related, promotional or from residents. The data collection was conducted on a single day. Starting from 20 categories developed for the features of Peru's destination image [4], 5% of the images were evaluated to establish major destination features illustrated on the photographs [29]. Hence, the categories *Tour*, *Other* and *Archeological Sites* were omitted, and the categories *Tourism Facilities* renamed to *Tourism Offers & Facilities*, *Way of Life to Residents' Lives* as well as *Food* to *Food & Drinks*, and the category *Historical Sites* added.

3.2 Data Coding and Reliability

Each single image and not each single feature was seen as a distinct unit of sample. However, Stepchenkova and Zhan [4] argue that especially photographs are complex structures, where it is not possible to simply reduce the content into reliable pieces as single units of analysis. Therefore, one of the authors coded each image into one up to four categories. Calculating raw agreement is understood as the simplest form of coding reliability, and therefor criticized, as coders might agree by mere coincidence. Still, we chose to verify reliability of the deduced categories by instructing another human coder to process a part of the content (300 images). The percentage of agreement was calculated by counting identical coding decisions in every category and dividing them by the overall image count [30]. For our sample, agreement percentage

was above 94%, thus, each deviating image was discussed, and adaptations were made to the guidelines, in order to increase an unambiguous understanding.

3.3 Destination Image Maps

Li and Stepchenkova [28] state that the “*purpose of constructing perceptual maps is to visualize the links between images in respondents’ collective mind*” (p. 253). As previously mentioned, each photographic unit within the selected sample was coded into four different categories. An aggregated image map is then constructed, in order to gain a better understanding for the tendencies of photographs to illustrate specific attributes together. These destination image maps aim at creating a meaningful visual summary of the content. By analysing the co-occurrence value for co-existing pairs of features within the photographic content, the existence of a true linkage between those categories can be uncovered. Hence, the probability of any destination attribute to occur in the image projected by the DMO or the UGC image was calculated. This can be assessed as the ratio of the attribute frequency and the corresponding size of the sample.

The probability p_X of the attribute X and the probability p_Y of the attribute Y to occur in a photograph have been approximated as f_X/N and f_Y/N with $N = 300$. However, the probability p_{XY} of two attributes appearing in the same photograph is not known, while the number of $X - Y$ co-occurrences for the random variable f_{XY} , has the probability p_{XY} . Therefore, with defined expectation as $E = N p_{XY}$ and variance $Var = N p_{XY} (1 - p_{XY})$ the random variable f_{XY} is binomially distributed. For better understanding, if attributes X and Y are independent, then the following formulas are valid under the assumption of independence: $p_{XY} = p_X p_Y$, $E = N p_X p_Y$, $Var = N p_X p_Y (1 - p_X p_Y)$. To examine the existence of a significant difference between the actual co-occurrence value f_{XY} , which is counted within the data set, and the expected score received by assuming attribute independence, the formula $z = (f_{XY} - E)/\sqrt{Var}$ is applied.

4 Results

4.1 Predominant Attributes: Frequencies

All attribute frequencies were counted and coded, whereby the category *Nature & Landscapes* was represented most often (74%), followed by *People* (30.2%), and *Plants* (27%). The full list can be found in Table 1. Then congruence between the projected and perceived image of all categories was analysed. For categories of both samples, cDMO and UGC, a Chi-square test was performed with statistical differences in 12 out of 20 categories (see Table 1).

In general, cDMO photos tend to illustrate more *Residents’ Lives, Food & Drinks, Architecture and Buildings, Traditional Clothing and People*, while tourists on Instagram posted more within *Nature & Landscapes, Leisure Activities, Festivals & Rituals, Plants, Country Landscapes, Domesticated Animals* and *Urban Landscapes*. Tourists are predominantly interested in all sorts of landscapes and the prevailing

Table 1. Attribute frequencies and Chi-Square Analysis (compiled by authors)

Categories	cDMO	cDMO (%)	UGC	UGC (%)	Total	Total (%)	p-value ^a
Nature & Landscapes	202	67.3	242	80.7	444	74.0	0.0002
People	101	33.7	80	26.7	181	30.2	0.0618
Plants	68	22.7	94	31.3	162	27.0	0.0168
Architecture & Buildings	94	31.3	58	19.3	152	25.3	0.0007
Residents' Lives	99	33.0	35	11.7	134	22.3	0.0000
Outdoor & Adventure	52	17.3	46	15.3	98	16.3	
Tourism Offers & Facilities	47	15.7	39	13.0	86	14.3	
Food & Drinks	57	19.0	12	4.0	69	11.5	0.0000
Country Landscapes	24	8.0	40	13.3	64	10.7	0.0343
Leisure Activities	14	4.7	35	11.7	49	8.2	0.0017
Transport & Infrastructure	19	6.3	27	9.0	46	7.7	
Urban Landscapes	11	3.7	21	7.0	32	5.3	0.0692
Art Objects	10	3.3	17	5.7	27	4.5	
Domesticated Animals	6	2.0	14	4.7	20	3.3	0.0688
Festivals & Rituals	4	1.3	14	4.7	18	3.0	0.0167
Wild Life	2	0.7	5	1.7	7	1.2	
Traditional Clothing	4	1.3	0	0.0	4	0.7	0.0448
Historical Sites	2	0.7	1	0.3	3	0.5	

^ashown at significance level 0.1

vegetation together with leisure activities and domesticated animals, whereas they seem to be not so interested in the lives of people living at the destination. However, the cDMO illustrates primarily nature and landscapes, local people and their lives, the architecture of Tyrol, food and outdoor activities, which are not necessarily of interest by tourists.

4.2 Aggregated Image Maps: Co-occurrences and Differences

The aim of creating a perceptual map lies in visualizing the links between photographs in the viewer's mind. The aggregated image map of Tyrol constructed with the cDMO sample is presented in Fig. 1. Only categories with co-occurrence of two percent or higher are illustrated. The four destination attributes with the highest frequencies are illustrated with bold ellipses, while the other categories are represented by lighter ellipses. Occurrence frequencies are indicated within the ellipses. Solid, bold lines indicate a statistically significant co-occurrence of 10 or higher, solid lighter lines a co-occurrence smaller than 10 (z-score is positive and above 1.96). Dashed lines indicate a statistically significant, negative link. For example, *People* and *Outdoor & Adventure Activities* are shown together in 51 photographs of the cDMO sample with a z-score of 8.25. Hence, these two attributes tend to be presented together in images posted by the cDMO. In our sample, there are no positive, direct links between the four largest

attributes, implying that there are no positive statistical associations between the attributes *Nature & Landscapes*, *People*, *Residents' Lives*, and *Architecture & Buildings*. Consequently, it is less likely to identify those attributes together in a cDMO photograph.

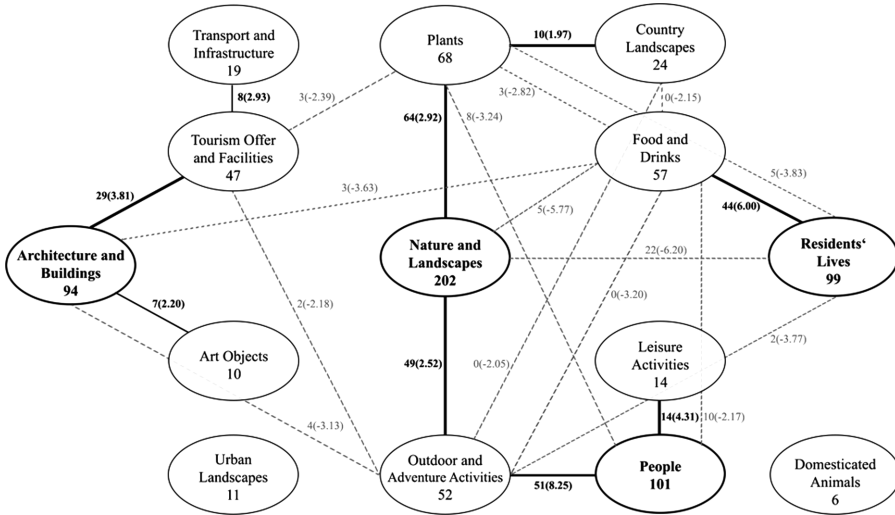


Fig. 1. Destination image map constructed from cDMO-generated photography (compiled by authors)

Furthermore, the map indicates the existence of three independent clusters. The largest cluster being *Nature & Landscapes*, linked through *Outdoor and Adventure Activities* to *People* (with *People* linked to *Leisure Activities*, *Nature & Landscapes* linked via *Plants* to *Country Landscapes*). Tyrol’s landscape tends not to be illustrated alone but has either trees and flowers or people doing adventurous outdoor activities as a second focus. Furthermore, the cDMO tends to connect leisure with activities done by people; photographed villages and countryside tend to include plants. The second cluster comprises of *Architecture & Buildings* as the main category, loosely linked to *Art Objects* and *Tourism Offer & Facilities*, further loosely connected to *Transport & Infrastructure*. The cDMO tends to picture buildings that have an art component (e.g., the funicular stations of the Hungerburgbahn) with touristic components and tourism offers (e.g., mountain lodges, ski huts). The third cluster is formed by the category of *Residents' Lives*, which is only linked to *Food & Drinks*. Residents’ lives tend to be photographed with traditional food and the associated preparation.

The aggregated image map constructed with UGC images is shown in Fig. 2. Its complexity shows that tourists create and share their photographs without an aligned strategy. The image map illustrates the 15 most frequent destination attributes with frequencies above two percent. The four destination attributes with the highest frequencies are *Nature & Landscapes*, *Plants*, *People*, and *Architecture & Buildings*. The

four most frequent attributes are also not directly linked, but two negative associations can be identified; First, between *Nature & Landscapes* and *Architecture & Buildings* (z-score -2.35 , expected and actual co-occurrences 49.79 and 32), and secondly, between *Plants* and *People* (z-score -2.52 , expected and actual co-occurrence 25.10 and 13). Tourists tend to separate those categories when taking a photograph and it may be assumed that it is less likely to see those attribute pairs illustrated together than one would expect.

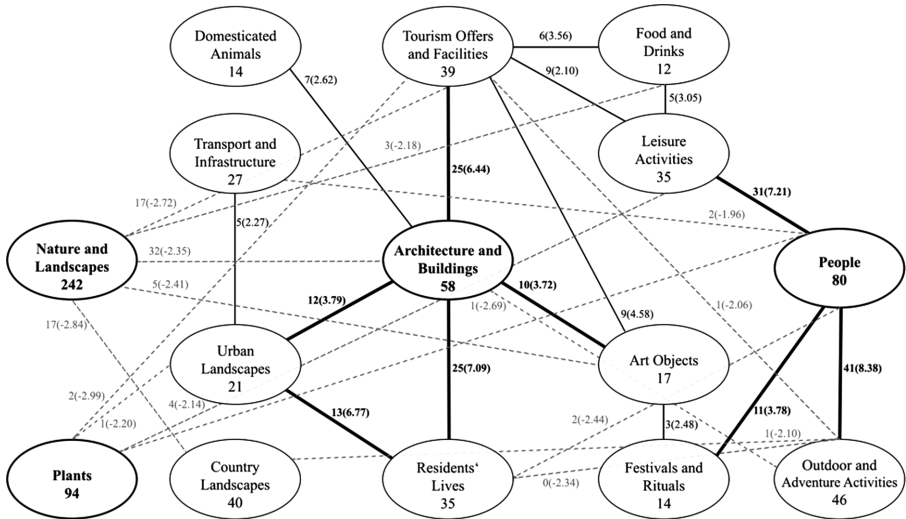


Fig. 2. Destination image map constructed from UGC (compiled by authors)

The UGC map cannot be distinguished into several clusters, as nearly all attributes seem to be linked indirectly. The category *Architecture & Buildings* is most widely connected, indicating that tourists photograph houses in urban settings as well as tourism facilities, which can also be viewed as art objects. Furthermore, houses are represented in UGC that show how residents are living, including domesticated animals like cows, sheep or dogs. The category *Urban Landscapes* itself has a strong link to *Residents' Lives* as well as a loose connection to *Transport & Infrastructure*, meaning that visitors of Tyrol tend to photograph how city people live including traffic and streets. The category *Tourism Offers & Facilities* incorporates three weak links to *Food & Drinks*, *Leisure Activities*, and *Art Objects*, indicating that pictures taken from obvious tourism activities are relatively scarce disregarding buildings like mountain lodges, huts, and others. *Food & Drinks* is loosely linked to *Leisure Activities*, meaning that tourists tend to take pictures of brunches or shared drinks. *People*, as one of the most frequent categories, is connected to *Leisure Activities* and *Outdoor & Adventure Activities*, which means that *People* can be positively associated with both activities and neither is preferred by tourists. The category of *People* is linked with *Festivals & Rituals*, indicating that tourists tend to take photographs including visitors at essential

events (e.g., selfies at ski races or wedding pictures with the bridal couple). *Festivals & Rituals* has a weak link to *Art Objects*, showing that tourists tend to take pictures of decorative objects and art on festivities mainly on Christmas markets. *Nature & Landscapes* (co-occurrence of 242) does not have a significant link to any of the other categories, which means tourists tend to photograph Tyrol's unique landscape alone.

5 Conclusion

The five predominant attributes of the Tyrolean destination image, considering both the cDMO and the UGC frequency counts, were *Nature & Landscapes*, *People*, *Plants*, *Architecture & Buildings*, and *Residents' Lives*. In all predominant categories, we found a statistical difference in respect to the frequencies of those attributes, meaning the distribution of occurrences was significantly different between the samples (see Table 1). Tourists tend to be more interested in capturing all sorts of nature and landscapes including the prevailing plants, leisure activities and their domesticated animals, whereas they tend not to share the lives of locals and their traditions like food and clothing. In particular, the UGC map shows that tourists tend to capture pictures with the attribute *Nature & Landscape* alone, while the cDMO links this attribute with plants, and outdoor sports. This aligns Tirol Tourist Board's aim to project a broader image of the destination, placing emphasis on including people in most photographs to foster a certain thought process by viewing a photograph on Social Media¹. For example, the impressive iconic photograph of lakes surrounded by mountains including no other category was illustrated in both the UGC (34 pictures) and the cDMO (13 pictures) sample. This can be explained with frameworks of destination image formation, that a tourist's perceived image of a destination is highly affected by the projected imagery induced by the Tirol Tourist Board and psychological characteristics of individual visitors, such as the motivation to prove to others that they have been to a location [11, 31]. Some pictures of specific locations (e.g., Seebensee) are even shot from the same angles, in order to succeed in retaking established promotional shots, thereby confirming similar findings of Stepchenkova and Zhan [4].

Secondly, tourists tended to photograph mountains without any other element of nature (31 pictures) nearly as often as the combination of lakes in front of mountains, whereas the cDMO numbers are lower (23 pictures). Furthermore, neither *Nature & Landscape* and *Architecture & Buildings*, nor *Plants* and *People* share a positive relationship in the UGC map. They are negatively linked and therefore, tourists do not tend to illustrate those pairs as pictorial foci together. The category *People*, as one of the predominant attributes, is pictured together with *Outdoor & Adventure Activities* as well as *Leisure Activities* in both samples. Outdoor sports in general has a higher co-occurrence frequency, with 51 cDMO pictures and 41 UGC pictures, therefore, it can be regarded as an iconic photograph, whereas the leisure activities have a lower co-occurrence frequency, but tend to be illustrated more on photographs of tourists (31

¹ Interview with Eckard Speckbacher, Head of Digital Communication, Tirol Tourist Board, on June 3, 2019.

pictures) than in the cDMO sample (14 pictures). Thus, it could be speculated, that it is not the single aim of tourists to include outdoor sports activities into their holidays, as indicated by promotional materials. Tourists value and enjoy their leisure time nearly as much, doing more relaxed activities (e.g., having brunch, visiting the spa), which is also linked to the attribute of *People* (11 co-occurring pictures in the UGC sample).

The adopted research methodology is highly dependent on the pictorial material chosen for examination; therefore, the permanently content-producing nature of Social Media together with the constrained usability of the platform itself limited the time-frame taken into consideration. Additionally, the chosen hashtag had an immense influence on the research outcome [3]. Other limitations are the compromise between reliable and accurate frequency data and the required manpower to execute the analysis, the subjectivity involved in the category development and coding, as well as the constrained comparison to already existing literature [5, 29].

Overall, the Tirol Tourist Board tends to project a strategically thought through destination image of Tyrol by illustrating beautiful landscapes, as well as Tyrolean architecture, outdoor sports, traditional food and impressive characters shown in their natural habitat. This study provides insights into the tourist perspective, which needs to be considered in a strategic destination image projection. Therefore, practical implications for DMOs could be to emphasize the unique Tyrolean landscape focusing on the attributes of nature alone, reducing the illustrations of locals in combination with their traditions, such as food and clothing, as well as including more representations of people doing leisure activities instead of outdoor sports.

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