Tourism Destination Image

With the rise of user-generated content (UGC) and deep learning technology, more and more researchers construct and measure the tourism destination image (TDI) through online travelogues.

1. Introduction

Since the 1970s, many scholars have focused their research on image formation [1], the influencing factors [2], and market research [3] on TDIs. Furthermore, all these analyses need to be based on scientifically rigorous measurement methods. Pike reviewed 142 papers from 1973 to 2000 about TDIs and found that 144 papers used structured techniques, while 63 papers used qualitative methods to operationalize the TDI construct [4]. In contrast, Echtner and Ritchie advocate for a combination of quantitative and qualitative approaches [5][6]. At present, the measurement methods of TDIs mainly focus on questionnaire surveying [7][8][9] and web text mining [10][11][12].

Among the existing studies, there is an increasing number of studies on the construction of tourism images of destinations based on tourism texts or images. Athena [13] explored the differences between "perceptual images" and "projected images" in eastern Taiwan through the analysis of image content, photographic materials, and textual materials. Marine-Roig et al. [14] compared the "projected image" of tourism administration documents and tourist guides with UGC on the Internet, using Catalonia as an example. Other scholars, such as Hunter [15], used semiotic analysis to explore the tourism photos and texts that represent tourists' perceptual images.

2. Tourism Destination Image and Marketing Communication

The construction of local brands can contribute to the development of tourism and a regional economy. Additionally, the role of the brand and regional image shaping in the target population has also been fully confirmed [16]. Ashworth and Voogt [17] described the destination product as predominantly "a bundle" of services and experiences. Similar to most product and service brands, before having actual consumption, tourists develop a brand image of a destination [18] which can evoke their idea, belief, feeling, or attitude [19]. According to Reynolds [20], the brand image is constructed through significant details. To ensure the effectiveness of marketing communications, marketers must fully understand the inner structure of the image because the brand image of a destination, as perceived by tourists, influences their choice of destination and their willingness to travel [21]; interested parties in tourist places will use appropriate brand communication tools to promote and improve their brand image, thus attracting more visitors [22].

Brand communication plays a role in the marketing of a brand to convey value [23]. Gunn [24] believes that "destination brand image is the totality of what a person already knows or perceives about that destination from newspapers, radio and TV news, documentaries, periodicals, dramas, novels, and non-fictional books and classes on geography and history". With the development of the times, communication methods have been gradually enriched, and destination marketing methods have evolved from traditional paper-based promotion to multimedia promotion. With the development of new media, represented by self-media, the mechanism of forming the image of a destination has become more complex [25].

In the field of marketing communication, semiotics is an important element. The use of symbols to communicate information is very important. It is not a perfect copy of the displayed object but a symbolic expression of important features that establish a connection with the territory [26]. The "consumer", as a recipient of important information, obtains the destination image through the process of decoding, selecting, and, respectively, addition [27]. Using semiotics will allow the deconstructing of photos and texts in a reasonable way. For a region or city, the most common iconic symbols of the brand are, in some ways, important elements of the area, such as buildings, bridges, architecture, rivers, lakes, etc., which will be described or shown in text and photos. These symbols are an important source of information for the image perception of tourist places.

3. Conceptualizing Tourism Destination Image Formation

Signs and symbols play an important role in communication by helping humans convey meaning and understand the world. In the field of tourism studies, the symbols refer to an advertisement, while the interpreters are the potential tourists [28]. Generally speaking, the signs and symbols convey information and can be translated into natural language so that they can be mined by related texts. Song and Jeon [29] evaluated the slogans in terms of the semantic and morphological aspects of the texts to understand the construction of local governments in Korea. Meanwhile, according to Tresidder [30], photographs posted by marketers are received by members of the community, each interpreting, negotiating, and finding meaning in their personal sphere. Thus, the semiotic analysis of photographs displays what travel to a certain destination should look like [15]. Above all, starting from the notion of semiotics, identifying the unique content of textual and photographic aspects of a travelogue can reflect how a destination is constructed by not only marketers but also tourists based on their actual travel experiences [31].

The formation of an image has been described by Reynolds [20] as the development of a mental construct based on a few impressions chosen from a flood of information. Tourism promotion, as part of the image-building process, is not isolated; rather, it is interdependent with many other available sources of information that are often perceived as biased in nature [32], and also, it is dynamic [33]. Therefore, it is valuable to study TDIs from an information theory perspective. The mechanism of brand image formation is not a one-size-fits-all approach and is relatively complex. For example, destinations with a long history and cultural heritage are often more likely to have a positive destination brand image [24]. Morgan et al. [34] argue that brands have functional and symbolic image attributes, and these attributes are partly derived from the visitor's imagination of the destination. Studies on tourism destination image formation from the perceptive of tourists can be summarized as the following two aspects.

On the one hand, scholars focus on the factors affecting TDI formation. According to the general theoretical model of image-formation factors by Baloglu and McCleary [1], these factors can be summarized as stimulus factors (information sources, previous experience, and distribution) and personal factors (psychological and social) in the absence of actual visitation or previous experience. For example, Charkbarty and Sadhukhan's [35] study of the Tibetan region of Mount Gang Rinpoche reveals that believers from different backgrounds conceal their own spiritual narratives in the destination image, and the study highlights the role of sacred elements and geographical features in the image of the destination. Tasci et al. [36][37] demonstrate that in addition to age, gender, income, and other basic characteristics of tourists, familiarity through a previous visitation, ad exposure, media, and travel context are also important influencing factors.

On the other hand, scholars have investigated the process of TDI formation. From an information theory perspective, due to the limited breadth of absolute human judgment and immediate memory, there is a limit to the amount of information researchers can receive, process, and remember [38]. Tourists are also limited in their perception of the image of tourist places and have biases in information processing [39]. Gunn conceptualizes it as the seven steps of the travel experience: "accumulation, modification, decision, travel to destination, participation, return travel, and new accumulation." According to whether the source is non-commercial information, TDIs are classified as "organic" and "induced" images [40].

The studies of the influencing factors and processes of TDI formation provide important implications for strategic image management, thus helping in designing and implementing marketing programs for creating and enhancing TDIs [41]. Understanding the formation process of the TDI provides a solid theoretical basis for a better understanding of the role of text and pictures in information transmission.

4. Travelogues in TDI Research

Travelogues, in the form of textual and visual information, are "Covert Induced" tourism destination image-formation agents [42]. The content of numerous travelogues on the same destination could reflect tourists' overall preference and experience, thus serving as a scientific and important data source for TDI research [43]. Photographs, conveying the theme and story of a place, are the main carrier of visual information in a travelogue [44][45]. As for textual information, not only can it tap into richer travel-related topics and specific locations through text mining technologies, but it also covers abstract aspects, such as history and culture. That is to say, textual information supports more comprehensive descriptions of destinations than visual ones [42].

With the rise of social media that strongly influences the channels where people acquire tourism information today, tourists are increasingly involved in constructing the TDI and adding content based on their experience through social media options, such as sharing, commenting, and recommending places and activities to do [10]. For example, Wise and Farzin [11] showed that user-generated content (UGC) on the Facebook page "See you in Iran" has positively affected the

willingness to visit Iran. Lin et al. [12] compared social media analytics and intercept surveys in TDIs. The results indicated that the survey data and social media data shared major similarities in the identified key photography phrases; however, the social media data revealed more diverse and specific aspects of the destination. In other words, in the Web 2.0 era, TDI research, based on the textual and visual information contained in UGC, is scientific and reliable and has become the mainstream method of TDI research today.

5. Research on Photograph-Based TDIs

Photographs, used as visual materials that convey the theme and story of a place [41][43], are an important source of data in tourism-related studies, which can motivate visitors to a destination. The research on the relationship between photography and tourism has always been a hot topic in academia. According to Urry [46], the practice of photography is closely related to the conditions of being a tourist and constitutes a self-reinforcing "closed circle of representation" in which travel photographs reflect and convey the TDI. Some scholars applied content analysis to the photographs from tourists and confirmed the existence of Urry's circle of representation [44][45][47]. Ryan and Cave [48] believe that values and emotions are given by humans in pictures. In this sense, photographs can be understood as a compression of the TDI [49], as their effect on people's memories and attitudes is more pronounced than other forms of information, such as texts and sounds [50]. Originally, visitor-employed photography (VEP), first used as a practical research technique in the early 1970s by Cherem and Traweek [51] and developed by Cherem and Driver [52] and Chenoweth [53], was one of the most common ways to capture photographs in tourism research, and it is used in the analysis of outdoor experiences and landscape preferences [54][55].

In the Web 2.0 era, the "Travel 2.0" phenomenon is catalyzed [56]. Online photographs have become one of the main information carriers of UGC and an important medium for tourists to perceive the topographical images of tourist destinations [57]. Tourists have the right to freely take photographs and upload them to the Internet [58]. The content of the photographs is exposed to the travel experience, such as landscapes, events, people, etc.; that is, the concretization and visualization of the tourist gaze, and can both reflect and inform the destination images [46]. In other words, an online photograph is an important carrier of tourist gaze in the Web 2.0 era and can be used as a data source for today's TDI research, thus offering larger sample sizes with greater objectivity at a lower cost.

At present, the analysis of photograph-based TDI research can be divided into two categories: the analysis of photograph information only, such as geographic analysis and metadata, to analyze tourists' temporal-spatial behavior; a comprehensive analysis combined with text content.

For the analysis of photo information only, scholars usually use maps [59] or photo-sharing sites as the object, such as Flickr [60] and Instagram [43][61], to analyze the spatial-temporal behavior of tourists through geographic location information, shooting time information, etc., and then summarize the tourists' perceived images of tourist destinations. Flickr's application programming interface (API), which provides user profile information, including the user's permanent location, is one of the primary data sources in photograph-based TDI research. Deng et al. [62] proposed a novel TDI measurement method based on a photo's metadata. They used large-scale metadata of user-generated photos to retrieve the TDIs of inbound tourists in Shanghai as an example based on a photo-metadata set from Flickr. This method has the advantages of easy access to data and uniform data formats but ignores the text information that contains visitors' emotions.

With the maturation of deep learning algorithms, such as the convolutional neural network (CNN) and recurrent neural network (RNN), image content can be analyzed efficiently and accurately, attracting more and more scholars to conduct text-and-photograph-based TDI research. Huang et al. [63] obtained pictorial data from the OTA, including Ctrip, Mafengwo, etc., and adopted exploratory research methods, such as image analysis, text analysis, and the IPA model to explore the representation and construction process of tourists' images of health tourism in Bama. Xiao et al. [64] identified the content of the tourist photographs by CNN and showed that it is possible for photographs to understand the TDI and to reveal the temporal and spatial heterogeneity of the image. This analysis method combines photograph data with text-based TDI research to address the shortcomings of small sample sizes in some niche destinations.

Overall, the perception analysis of the TDI by using photographs as a data source enriches the data dimension and measurement method of TDI research; however, the differences between the text-based and photograph-based analyses in TDI studies, how to use them in combination and the advantages of each, have rarely been analyzed by scholars.

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