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Retraction

Retracted: Inbound Tourists' Perception of Tourist Destination Image Classified by UGC Picture Computer Program

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] X. Fu, F. Wan, and Y. Wu, "Inbound Tourists' Perception of Tourist Destination Image Classified by UGC Picture Computer Program," *Journal of Electrical and Computer Engineering*, vol. 2022, Article ID 3100892, 13 pages, 2022.

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Research Article

Inbound Tourists' Perception of Tourist Destination Image Classified by UGC Picture Computer Program

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Travel has become a way of life for more and more people. The rapid development of technologies such as the Internet and 5G brings convenience to life, so recording one's travel through social media has become the main way of sharing. Based on the classification of UGC pictures by computer program, this paper studies the perception of tourist destination image by inbound tourists from different regions so as to find the factors that potentially affect tourists' decision-making. This study collects a large number of UGC pictures and classifies them according to computer programs. It conducts UGC data picture research through two different aspects of cognitive image and emotional image and finally analyzes the specific image perception of Shanghai tourism. The research results show that, in the analysis of specific inbound tourists' perception of tourist destination image, in the eyes of Western inbound tourists, Shanghai is a very modern cultural city with very distinctive architectural features; inbound tourists from East Asia are more and more interested in the cultural landscape and natural scenery of Shanghai. In the eyes of inbound tourists from East Asia, Shanghai is a city full of vitality. Among them, the Huangpu River is the place that receives the most tourists. 21.5% of inbound tourists will visit, and 13.7% of inbound tourists choose to visit Lujiazui.

1. Introduction

With the continuous improvement of people's economic level, people's consumption level is also rising, among which tourism is one of the biggest expenditures of people every year. The perception of tourism purpose is one of the main researches on inbound tourists by researchers at home and abroad, and it is also a very popular field now. It can effectively change the types and methods of attractions in the destination according to the perception of inbound tourists on the purpose of tourism, which is a very effective marketing method. With the rapid development of the Internet and social media, more and more tourists will publish their own travel content on social media such as Moments and Douyin to share while traveling. This kind of user-generated content can also be called UGC (user-generated content) and has very important research value. Nowadays, the pace of people's life is accelerating, and tourism has become an effective way for people to slow down the pace of life. Therefore, more and more scholars have begun to use UGC social media data to conduct tourism-related research, and many breakthroughs have also been made. The pictures of their destinations that they publish via UGC also have some influence on potential travelers' decision-making. Despite the explosive growth in the use of big data and the growing amount of user-generated electronic content (UGC), the use of big data in tourism research is still underused, which is now the direction of research in different tourism destinations.

The traditional questionnaire method is used to study the perception analysis of inbound tourists on the image of the tourist destination, but with the development of the times, this method has been abandoned by the times. In addition, most of the previous photo-based TDI studies mainly use artificial content or semantic analysis, and it is difficult to collect a large amount of image information for research and analysis. The number of samples it analyzes is limited, and more automated analysis methods are needed to improve efficiency in the face of large-scale UGC photo collections. The deep learning theory of computer science and computer

image classification are introduced into TDI. It uses pictures posted by tourists in different regions as research samples and uses machines to analyze millions of destination-related photos to represent the content and build correspondence between destination cognitive and emotional images. When Chinese tourists travel across provinces, most tourists are interested in local cultural relics, entertainment activities, and food; however, British tourists pay more attention to facilities and the urban environment, and Canadian tourists pay more attention to the development of cities. In terms of emotional image, "excitement" and "pleasure" are the most significant emotional elements of inbound tourists. Visitors from Hong Kong, Macau, Taiwan, and the United States showed some signs of sleepiness, while British tourists showed more signs of distress. Therefore, according to the different situations of different inbound tourists, tourist destinations need to carry out targeted marketing for the main inbound tourist source markets. For tourists from Hong Kong, Macao, and Taiwan, it is essential to increase the cultural connotation of the tourist destination and enrich the catering and entertainment activities. For British tourists, well-established facilities, diverse urban environments, and distinctive architectural features are key marketing elements. Natural beauty and people's life are important symbols to attract American tourists. Therefore, using a large number of UGC pictures to conduct research on the perception analysis of destination image for inbound tourists based on the collected picture data is of great significance for the development of China's tourism industry and product marketing.

Since entering the era of big data and artificial intelligence, with the rapid development of technologies such as the Internet and the Internet of Things, more and more tourists have begun to use social media to share their travel experiences. Therefore, user-generated content (UGC) has become an important source of information for potential tourists, influencing their perception of tourist destination image (TDI) and travel decisions. As one of the carriers of UGC, photos are an important tool for the cross-cultural communication of TDI. Deng uses computer deep learning methods to analyze large-scale photo datasets, converting pictures to text to extract cognitive and affective images [1]. The gap between the projection and perception of the image of a tourist destination has important implications for the development of the destination. Meng et al. proposed a new big data analysis method. They combined the "cognitive-emotional" model with projected and perceived destination image gap analysis to explore Sanya's destination image gap [2]. The Swaziland government has identified tourism as one of the country's priority sectors with the greatest potential to stimulate economic growth through job creation, poverty alleviation, and increased foreign income. Mashwama used SPSS 24 and Amos 24 for data analysis. His research also shows that satisfaction has a positive effect on tourists' trust in the destination and their attitude towards the destination [3]. The frame of reference for the paper is tourism marketing, which assesses the image of the target tourism destination from a gender perspective. For emerging destinations in Southeast Europe like Serbia, the potential link between destination image and gender is therefore particularly worth exploring. Beric assessed the association between the gender of ITB tourists and their impressions of Serbia, combining it with their sociodemographic characteristics, annual travel expenditures, sources of information, associations, and perceptions of Serbia [4]. His paper aims to identify the relationship between value perception, destination image, and satisfaction in order to realize tourists' revisit intention. Permana analyzed the collected data using Structural Equation Modeling via Smart PLS. The study found that value perception has a positive and significant impact on satisfaction, and satisfaction also has a positive and significant impact on revisit intention [5]. Beijing is emerging as one of the world's most popular destinations, but the number of international tourists visiting the city has been declining recently. Liu employs an online deductive approach and uses Leximancer software to analyze the content of reviews and identify potential relationships. This provides practical significance for improving the experience of international tourists in Beijing, increasing their satisfaction and willingness to revisit [6]. While multidestination travel has been increasing, examining the nature of multidestination travel from a spatial perspective is a recent development. The raw data were converted into matrix data and analyzed using UCINET 6.0 software. Lee identified three different network "ages" (20–29, 30–39, and 40–49) based on Chinese FITs. The findings show that there is a difference in density between the three networks [7]. However, many researchers at home and abroad in recent years have carried out a detailed analysis of inbound tourists' perception of tourist destination image and have carried out relevant data information through a large number of experiments. In addition, by summarizing tourist attractions in different parts of the world, they are classifying statistics and conducting research according to the actual situation; however, it has not conducted further research on the methods of big data and artificial intelligence and has not used the popular technical methods to explain, which will have certain deficiencies in terms of fitting the actual situation and life.

This paper uses the UGC image computer program classification method to research and analyze the image perception of inbound tourists to the tourist destination. This paper analyzes the composition and some constituent elements of target images in UGC images and focuses on image metadata and related image reviews based on structural theory, and it simply describes the image title, label, description, and other pieces of information contained in the UGC image metadata according to the main factors of the "cognitive-emotional" structure in the destination image. The content of the image reflects the body of knowledge, the destination image, the information, the viewpoint of the image, and the reader's feeling when reading the image. And emotional adjectives can be regarded as the embodiment of the emotional image of the destination to a certain extent. It is worth noting that the method used in this paper finally obtains the target image based on the UGC network image,

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which is also the main research method of related researchers at home and abroad for the perception of tourist destination image.

2. UGC Picture Computer Program Classification Method and Inbound Tourists' Perception Analysis Method of Tourist Destination Image

2.1. UGC Image Computer Program Classification Method. User-generated content is referred to as UGC. With the development of the Internet, the concept of big data and artificial intelligence in Internet technology continues to grow. At this time, users not only are network content users but also can refer to network content producers and user-generated content. UGC refers to text, images, audio, and video in any format [8]. The concept of UGC pictures was proposed in the early twenty-first century, but there was no unified definition at the beginning of the discovery. And there was no single definition generally accepted by the academic community at that time, it was difficult to be recognized by most people in practice, and different regional definitions would change accordingly [9]. After several years of development, the Department of Global Economic Development has come up with a widely accepted definition of innovative random content created by nonprofit organizations and made available to the public on the Internet. The most important content in this sense is published on the Internet; the content is innovative and created by non-professionals or companies, which is how UGC was initially widely accepted by most people, as shown in Figure 1.

UGC mainly represents a specific behavior of user U marking an item with a tag b, and it can also label the same item with different behaviors, the simplest of which is to use the UGC tag using an algorithm [10].

$$P(u,i) = \sum_b n_{u,b} n_{b,i}, \tag{1}$$

where $n_{u,b}$ is the specific number of times the user u has hit the tag b and $n_{b,i}$ is the number of times the item i has been tagged with the tag b.

Use IF-IDF to make corresponding improvements:

$$P(u,i) = \sum_b \frac{n_{u,b}}{\log\left(1 + n_{b,i}\right)},$$

$$P(u,i) = \sum_b \frac{n_{u,b}}{\log\left(1 + n_b\right)} n_{b,i}, \tag{2}$$

$$T(u,i) = \frac{n_{b,i}}{\log\left(1 + n_{u,b}\right)}.$$

$$\mathrm{sim}\left(b, b'\right) = \frac{\sum_i N(b) \cap N\left(b'\right)}{\sqrt{\sum_i N(b) \bigcup N\left(b'\right)}}. \tag{3}$$

According to the specific UGC picture recommendation, we can know

$$P\left(\frac{i}{u}\right) = \sum_b P\left(\frac{i}{b}\right) P\left(\frac{b}{u}\right). \tag{4}$$

An important step in the computer program classification algorithm is to calculate the learning rate of different training sets. Assuming that the initial learning rate of the training phase is L, then

$$X = i \times \frac{L}{m}. \tag{5}$$

There are many residual blocks, and the parameters of each residual block are initialized to 0, which is expressed by the following formula:

$$y = \gamma x^{+} \times \beta. \tag{6}$$

When adjusting parameters for model training, the decay strategy of the learning rate is generally carried out by using the cosine function. The formula of this function is

$$\alpha_t = \frac{1}{2} \times \left(1 + \cos\left(\frac{t\pi}{T}\right)\right). \tag{7}$$

Assuming that the first layer is a convolutional layer, the calculation formula of the entire first layer is

$$x_j^l = f\left(\sum_{i \in M_j} x_i^{l-1} * k_{\mathrm{ij}}^l + b_j^l\right). \tag{8}$$

When the residual block is calculated, the calculation process is very simple. The residual calculation formula of the first layer is

$$\delta_j^l = \beta_j^{l+1}\left(f'\left(u_j^l\right) + \mathrm{up}\left(\delta_j^{l+1}\right)\right). \tag{9}$$

When calculating the gradient, the specific formula is

$$\frac{\partial E}{\partial b_j} = \sum_{u,v} \left(\delta_j^l\right)_{uv}. \tag{10}$$

The specific derivation process of the gradient calculation formula is as follows:

$$\frac{\partial J}{\partial b_j^l} = \sum_{u,v} \left(\delta_j^l\right)_{jl}. \tag{11}$$

The derivative of the bias parameter k is

$$\frac{\partial E}{\partial k_{ij}^l} = \sum_{u,v} \left(\delta_j^l\right)_{jl} \left(P_i^{l-1}\right)_{uv}. \tag{12}$$

The specific formula derivation is as follows:

$$\frac{\partial J}{\partial k_{ij}^l} = \sum_{i=1} \frac{\partial J}{\partial z_{jt}^l} * \frac{\partial I}{\partial z_{ij}^l}. \tag{13}$$

Assuming that layer I is a subsampling layer and layer $i-1$ is a convolutional layer, the calculation formula is

$$x_j^l = f\left(\beta_j^l \mathrm{down}\left(x_j^{l-1}\right) + b_j^l\right). \tag{14}$$

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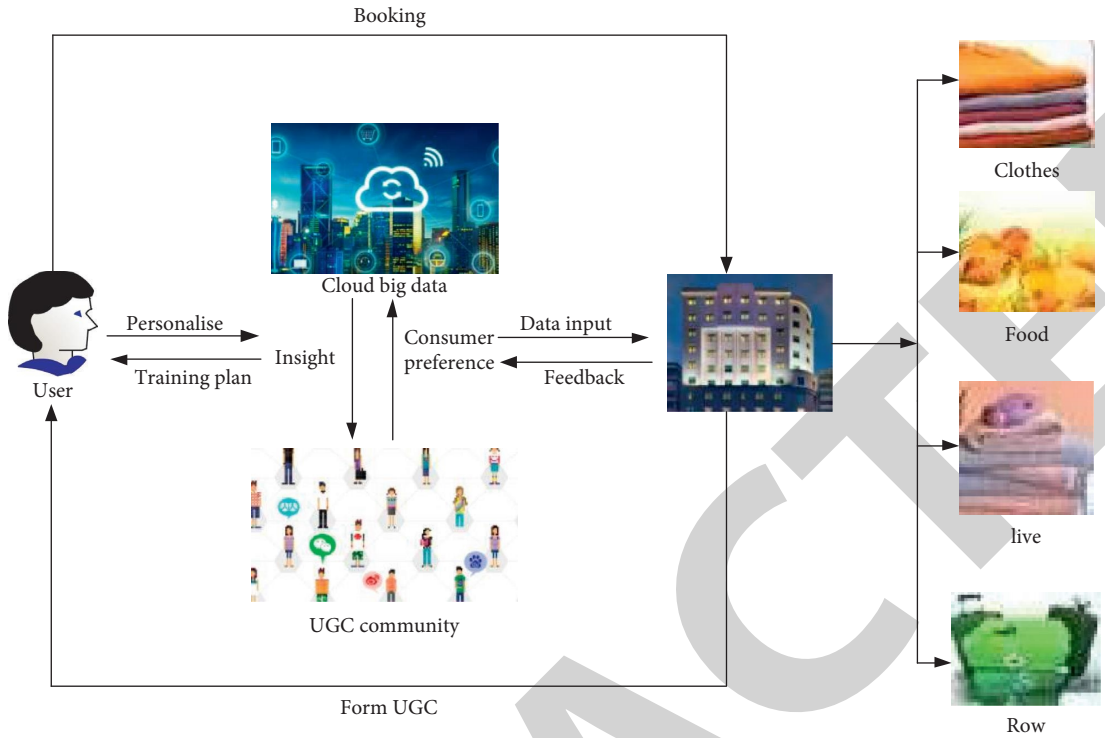

Figure 1: The specific process of UGC community image sharing.

Using label smoothing, the corresponding multiples between the probabilities of the true class and the mean of the probabilities of the other classes are reduced by a certain amount:

$$q_i = \begin{cases} 1-\varepsilon, & \text{if } i = y, \\ \dfrac{\varepsilon}{(K-1)}, & \text{otherwise.} \end{cases} \tag{15}$$

There will be a certain deviation during the calculation. The overall loss function is a specific combination of the original loss function and the distillation loss function, as shown in the following formula:

$$Y = l\left(p, \text{soft max}(z) + T^2 l\left(\text{soft max}\left(\frac{r}{T}\right), \text{soft max}\left(\frac{z}{T}\right)\right)\right). \tag{16}$$

In the specific calculation, the data enhancement method of Mixup is also introduced, which can increase the number of sheets for each input picture to be calculated and can greatly increase the corresponding calculation degree.

$$\begin{aligned} \hat{x} &= \lambda x_i + (1-\lambda)x_j, \\ \hat{y} &= \lambda y_i + (1-\lambda)y_j. \end{aligned} \tag{17}$$

With the rapid development of various technologies, more and more travelers have begun to publish original content such as photos taken during travel, uploading life VOLGs during business trips, signing travel journals on social media, and valuable information that different travelers can use to share the lifestyle they want and share it with different people [11]. After comparing major social networking sites, different social media UGC image metadata sets are basically consistent with the research content of this experiment [12]. More and more social media offer platforms that allow users to upload various images. And it can also classify uploaded pictures and add functions such as tags, titles, and descriptions [13, 14]. Other users can also perform functions such as comments and picture search, which include uploading and saving images and categorizing them. It can also add tags, titles, descriptions, and so on to pictures and can also perform functions such as comments and picture search [15]. Image datasets are used in academic research, and computer programs are used for corresponding classification, as shown in Figure 2.

2.2. Method of Cognitive Image Perception of Tourist Destination. Since the 2010s, people's lives have undergone tremendous changes. It brings people's attention to spiritual life, and tourism is a very important part of it. Inbound tourists from different regions of the world have different perceptions of the cognitive image of the tourist destination, and there will be a specific analysis of the corresponding different image perceptions [16, 17]. As early as 1979, scholars at home and abroad defined the destination image as the sum of each traveler's knowledge, thoughts, and impressions of the destination, which is also a person's beliefs, feelings, and overall perception of the destination. All these definitions emphasize the dual qualities of destination image and subjective factors of inbound tourists, including personalization and overall impression [18].

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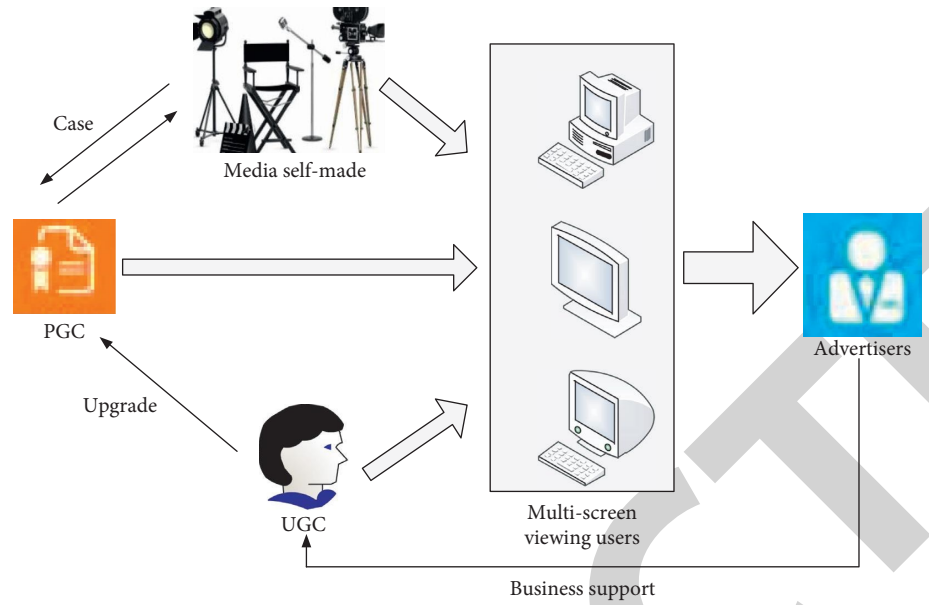

Figure 2: UGC user content ecosystem.

With the continuous development of the times, more and more scholars have further proposed that the destination image includes not only the perception of the characteristics of tourists but also the perception of tourists and the overall cognition of the destination [19]. This paper proposes a specific concept of three-dimensional structure to describe the perception of destination. Different users' overall perception of the destination, which will affect the user's choice of travel destination, also means that the individual's perception of the destination depends on behavior. Among them, the psychological characteristics refer to the fact that tourists can roughly evaluate the image of the destination according to the popularity of the destination [20, 21]. The target image consists of three levels of interrelated elements, including the perceptual image, the emotional image and the emotional image, and the expected image. Cognitive vision refers to tourists' beliefs and knowledge about the destination; emotional image refers to individual tourists' perception of the destination based on this knowledge; and emotional image refers to the behavior of tourists based on cognitive and emotional imagery [22]. A destination image classified according to a computer program can be defined as the sum of beliefs, knowledge, thoughts, feelings, and overall impressions of an online destination, as shown in Figure 3.

With the continuous development of the times and the proliferation of various social sharing platforms, a large number of applications, including Moments and Douyin, can share users' feelings in real time. Travelers create and share UGC content on various social media sites, which can effectively promote different tourist destinations [23]. Establishing a positive image of attractions has always been the focus of destination marketing. Previously, travelers' perception of attractions images often came from the acquisition of various information. In terms of destination images, there is a difference between tourists' perceived images and projected images of computer pictures [24]. With the rapid development of today's network information technology, various tourism information channels have shifted from traditional media to information-rich social networking platforms. And search data also tends to record trips, photos, and destination reviews uploaded by travelers [25]. With the continuous development of the times, more and more social media are flooding the society. And with the increasing power of marketing, more and more people can easily get the information they want on the Internet. During this process, the destination map seen by potential tourists will be influenced by the information uploaded by other travelers [26]. On social media, destination picture documentation mainly studies the electronic perception of images of inbound attractions and studies the cognitive differences between Eastern and Western tourists, which is crucial for precision marketing in domestic destinations. The future research and application of big data images on travel social media is the foundation, in which inbound tourists from Western countries and inbound tourists from East Asian countries take different types of photos and share them in China, as shown in Figure 4.

2.3. Method of Inbound Tourists' Emotional Image of Tourist Destination. From the adjectives and comments of a large number of UGC pictures, it can be seen that the adjectives matched with the pictures can well reflect the user's mental state. While comments from pictures reflect readers' feelings about the content of the pictures, different adjectives usually contain expressing emotions. These adjectives are the emotional feedback conveyed by the image, which can well convey the psychological activities of most people [27, 28]. The frequency of words and the polarization of adjectives in visual reviews can reflect the

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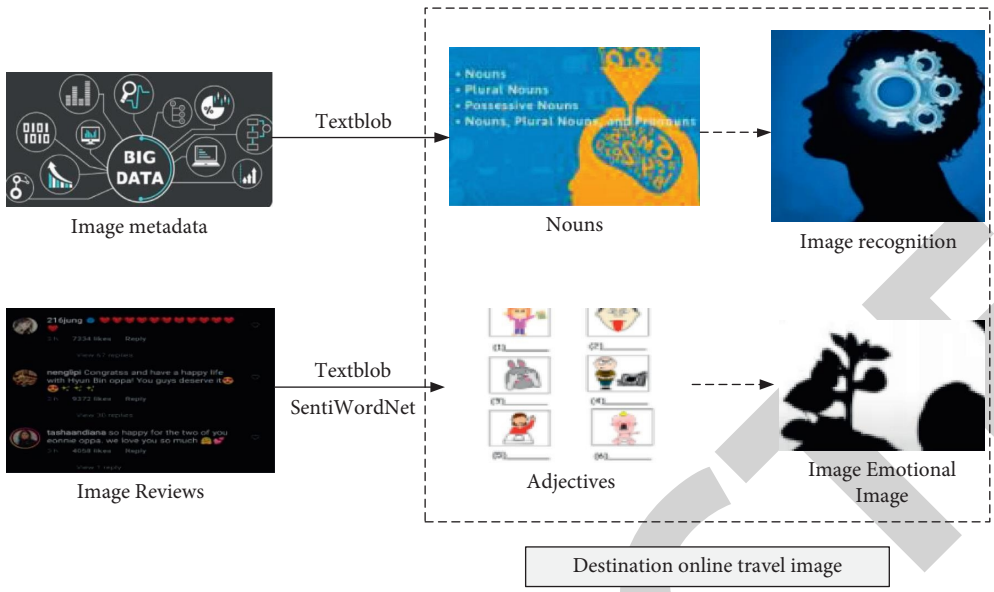

Figure 3: The illustration of the online destination image based on UGC photos' metadata.

Figure 4: Comparison of photos taken by Western and East Asian inbound tourists. (a) Photos taken by inbound tourists from the West. (b) Photos taken by inbound tourists from East Asia.

emotions conveyed by vision and obtain images that express the emotions generated by the visual content. In this study, a computer program was written to record feedback data for a given image, and UGC images of different inbound tourists were collected for classification and analysis [29]. Adjectives with more than one occurrence frequency and high emotional intensity in reviews were excluded and analyzed, and the polarity of each emotional adjective was calculated using SentiWordNet semantic analysis software [30]. In addition, the collected UGC pictures are sorted by the word frequency in the image reviews, and then the image content is manually analyzed, which analyzes the correlation of sentiment tendency, image content, image content, and photography technique, as shown in Figure 5.

3. Experiment of Inbound Tourists' Perception of Tourist Destination Image

3.1. Number of Inbound Tourists. According to the actual situation of inbound tourists, this study selects Shanghai as the experimental research site. Shanghai is one of the municipalities directly under the Central Government in China, with a total area of 6,340 square kilometers. Shanghai's GDP consistently ranks among the top in China, and it also ranks among the top 10 cities in Asia. Moreover, Shanghai is a world-famous financial center and an international metropolis. It is one of the most populous cities in the world and is very suitable for people to live or develop. Located on the banks of the Yangtze River, Shanghai is one of the six largest urban settlements in the world and a financial center.

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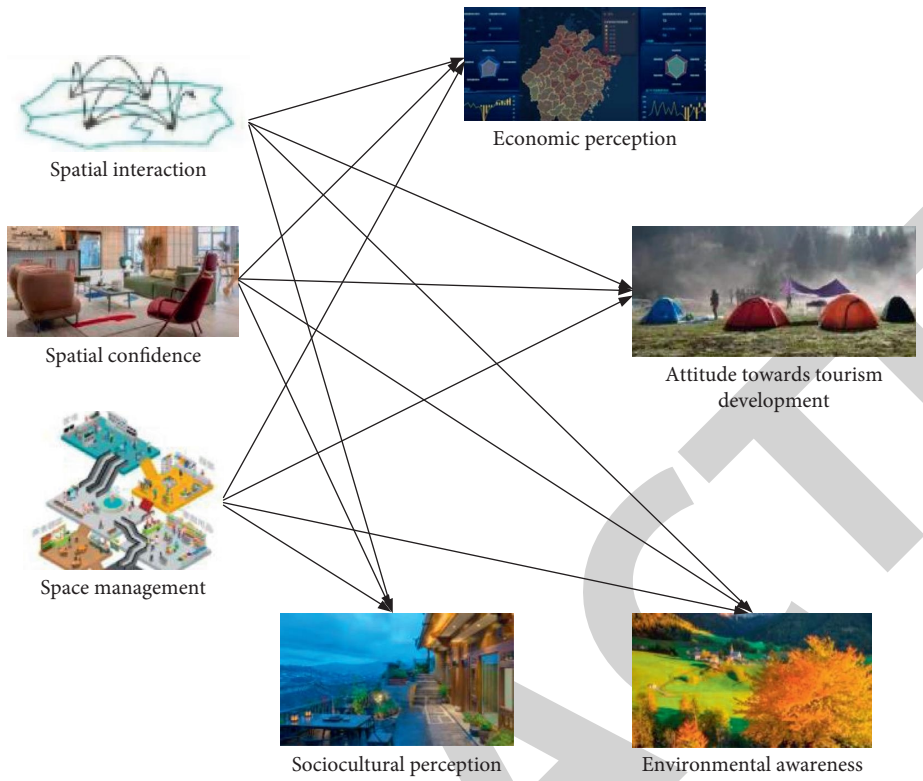

Figure 5: Different attitudes of inbound tourists in different regions determine their shooting styles.

At the same time, Shanghai is also one of the earliest international ports. Shanghai has always aimed to create a world-famous tourist city. Shanghai has successfully held large-scale events such as the World Expo, and Shanghai Pudong Airport and Shanghai Hongqiao Airport receive nearly 100 million passengers every year. In addition, the development of Shanghai's tourism industry has promoted cooperation with regions such as the Yangtze River Delta region and Hong Kong, Macao, and Taiwan. Shanghai has a subtropical humid monsoon climate with four distinct seasons, abundant sunshine, and long winters. Shanghai has always been one of China's inbound tourism destinations, and the number of inbound tourists is increasing year by year. According to the China Tourism Cities Attractiveness Ranking released by the China Tourism Academy, Shanghai ranks second in mainland China. Therefore, the study chooses Shanghai as an opportunity to analyze the relationship between inbound tourism, which is very representative, and it can also be a good research on the analysis of inbound tourists' perception of tourism destination image. Table 1 shows the POI statistics of Shanghai inbound tourists.

According to the classification of computer programs, different interfaces are used for operation, and different UGC image data are collected and sorted accordingly. Through the difference of each UGC image uploading platform, the user-specific information of each UGC image can be effectively collected. The last part is the specific distribution and corresponding statistical data of foreign tourists who have entered Chinese cities in recent years.

Table 1: POI statistics of inbound tourists in Shanghai.

POI	Frequency	Proportion (%)
Huangpu River	1105	21.5
Mud City Bridge	929	18
Lujiazui	703	13.7
Lujia Crossing	597	11.6
Old West Gate	476	9.2
Xuhui District	281	5.5
Dinan	204	4.0
Sinan Mansions	195	3.8
Jingan Temple	182	3.5
Dapu Bridge Station	175	3.4
Harbour	152	3.0
The House Cross	139	2.7

Table 2: Main sources of inbound tourists in Shanghai.

Source	Number of people	Proportion (%)
America	214	31.8
England	95	14.1
Australia	75	11.2
Canada	51	7.6
Germany	45	6.7
Taiwan, China	42	6.3
France	35	5.2
Japan	35	5.2
Spain	25	3.7
Italy	21	3.1
Singapore	19	2.8
Hong Kong	15	2.2

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Among them, the vast majority of inbound tourists from abroad come from more than 60 countries around the world, and the number is still increasing year by year. The specific situation is shown in Table 2.

Shanghai is the trade center of various foreign countries in China. In recent years, it has been among the major cities in the world. It maintains friendly trade relations with Western countries and plays a pivotal role. According to the specific data from a large number of experiments, the main sources of Chinese inbound tourists in the past 10 years include Western countries, including the United States, the United Kingdom, and Canada. In addition, it has close ties with China in daily trade exchanges and has very good cooperation in many industries such as metal and fabric. Figure 6 shows the top five sources of inbound tourists in recent years. Its specific data shows that Chinese inbound tourists are mainly affected by many aspects, including major global events in China. Related trade exchanges with other countries in the Asia-Pacific region, as well as with the improvement of the world economic situation, are the reasons for the increase in Chinese inbound tourists in recent years. However, with the global outbreak of the new crown epidemic, the proportion of Chinese inbound tourists in the past two years has been affected to a certain extent, which is a great decline compared to before.

3.2. Cognitive Image Perception Experiment. Nowadays, most foreign inbound tourists choose their destination from their own actual situation and then decide their travel destination through cognitive image perception. In addition, it includes cognition of the image of the destination and research on the emotional image of the destination. The former is a detailed understanding and cognition of the destination of inbound tourists, while the latter is the specific emotional fetters of the tourist destination. In this study, after statistics and analysis of the data information of UGC pictures, some unimportant information in the original collected data was deleted, and the final statistical results were some words most commonly used by inbound tourists. In this experiment, high-frequency words are summarized for the data in UGC pictures. And according to different types of words to make a certain summary and through the corresponding computer program to extract the summary of high-frequency words, the results are shown in Table 3. In the high-frequency words extracted by the computer program, words that appear repeatedly, such as China, Beijing, and Shanghai, are found, and most of the other high-frequency words collected are nouns. And the UGC photo content compiled according to the computer program tends to be related to the location, the scene introduction, and the mental state of the publisher.

This experiment will study the vocabulary of different frequencies at different latitudes, mainly collect UGC pictures through computer programs, and then classify them according to different types. It then summarizes the most advanced words according to the actual situation, namely, Urban landscape, Nature, Activity, Building facilities, Culture, Site, and Mission, which is the result of long-term tracking of the highest frequency words of Chinese inbound tourists. The details are shown in Table 4. Among them, Site is the word with the highest proportion, accounting for more than 35% of all high-frequency words, while Nature is the word with the smallest proportion, accounting for 5% of all words. All the data can show that inbound tourists in Shanghai love the city of Shanghai, which is a modern

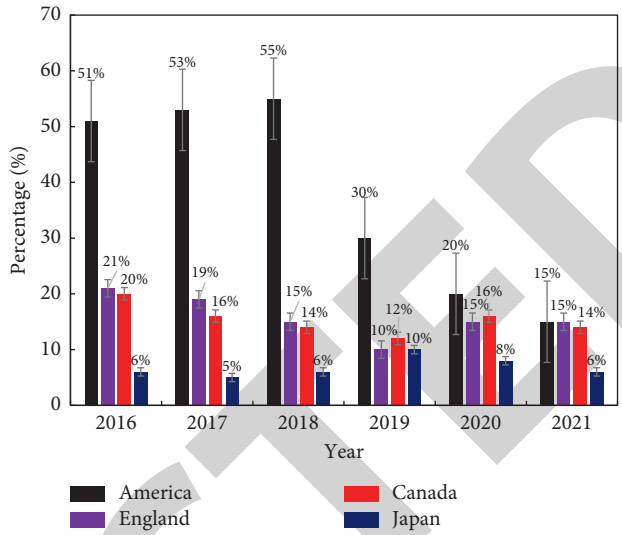

Figure 6: Proportion of inbound tourists in Shanghai from 2016 to 2020.

Table 3: Overall cognitive image perception of inbound tourists in Shanghai.

Noun word	Frequency
Building	1352
World Expo	1254
People's square	1120
Street	975
Museum	912
Exhibition area	905
Theater	854
Night scene	842
Yu garden	782
Skyscraper	754
Shanghai square	712
Model	698
Pudong	652
Huangpu River	574

Table 4: Overall image ratio of inbound tourists in Shanghai.

Number	Kind	Word frequency	Proportion (%)
1	Urban landscape	2085	8.7
2	Nature	1204	5.0
3	Activity	2571	10.7
4	Building facilities	3587	15.0
5	Culture	3971	16.6
6	Site	8410	35.1
7	Mission	2137	8.9

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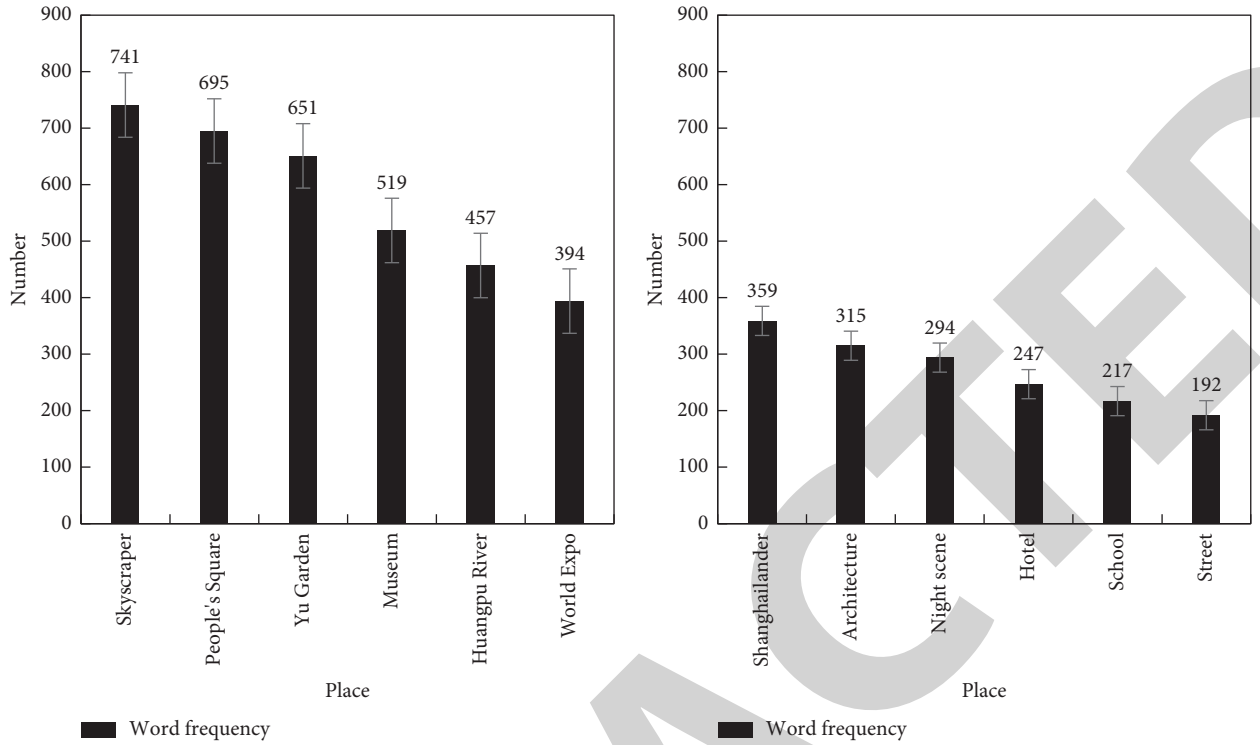

Figure 7: High-frequency words of cognitive image of Western inbound tourists.

metropolis that integrates traditional Chinese culture and modern technology.

Through computer program statistics on Chinese inbound tourists over a period of time, it is found that most of China's inbound tourists are from Western countries such as the United States, Canada, and Australia. However, there are certain differences between its cultural background and China, and the inherent image of China may bring a certain prejudice, which will affect the number of inbound tourists in China. Although Shanghai is an international metropolis, it is, after all, a key city in China's traditional culture. It is based on the integration of foreign cultures and also contains the historical and cultural heritage of China for thousands of years, so there will be a certain deviation from the cognition of Western inbound tourists. This is an unavoidable actual situation. The specific situation is shown in Figure 7.

In addition, there are also inbound tourists from various countries in East Asia who travel to China, including Japan, South Korea, North Korea, and other countries. Although these countries have certain differences in language with China, they are not far from China, and this diplomatic relationship has existed since ancient times. They are closely related to China and have been influenced by China's history and culture for many years. The differences in relevant cultural and historical backgrounds are not as large as those of Western countries. Shanghai has always been one of the largest cities in East Asia; compared to international cities such as Seoul and Tokyo, it has great advantages in many aspects. Therefore, in recent years, people from several neighboring countries will enter Shanghai for tourism or settlement, but it is inevitable that there will be some cognitive differences. The specific situation is shown in Figure 8.

3.3. Emotional Image Analysis Experiment. A large number of UGC pictures are collected and sorted through computer programs and processed through the background database. Then, it can get the emotional image of the tourist destination of the social pictures posted by people for analysis and finally get the experimental conclusion. The experimental conclusion shows that people's emotional adjectives in UGC pictures can effectively reflect the user's specific inner feelings when traveling, thus reflecting the actual situation of the tourist destination. In addition, the emotional adjectives in people's comments after UGC pictures are released can effectively reflect the potential emotional tendencies of users who have not traveled and can harvest some potential inbound tourists for the tourist destination. All of the above can reflect the user's emotional image analysis of the tourist destination, as shown in Table 5.

In this experiment, a computer program is used to collect and analyze the user's UGC pictures. It analyzes the emotional image of inbound tourists to the tourist destination through the actual situation of tourism in China from various Western countries. It is found that users in Western countries are more interested in Chinese architecture, food, customs, and so on, and the pictures of this content also have more emotional adjectives. UGC pictures containing these are also more likely to attract other people's comments, which will attract other tourists to enter China for tourism. Shanghai's architecture and traditional Chinese culture have also been attracting foreign tourists, as shown in Figure 9.

Based on computer programs to collect UGC pictures for research and analysis, the actual situation of inbound tourists from various countries in East Asia was found. It discusses inbound tourists' emotional image analysis of

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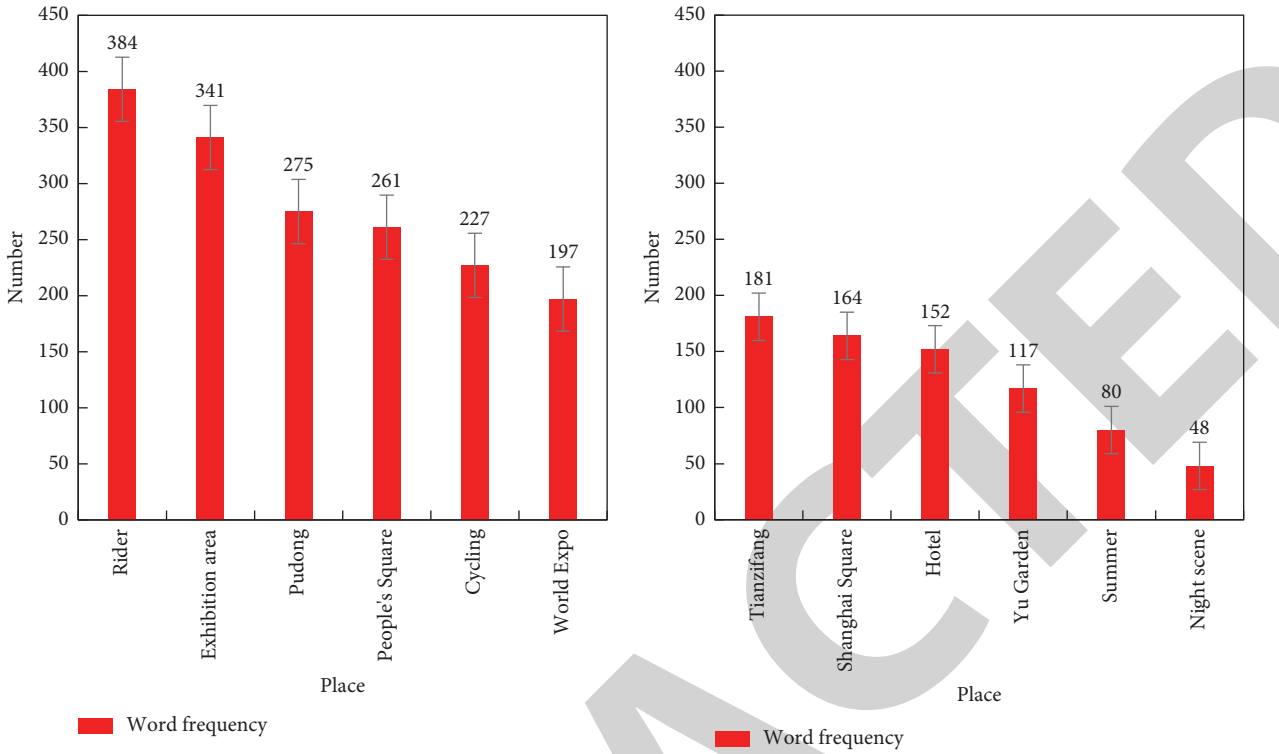

Figure 8: High-frequency words of cognitive image of inbound tourists in East Asia.

Table 5: Emotional high-frequency words of inbound tourists obtained through UGC picture analysis.

Number	Adjective	Word frequency	Proportion (%)
1	Great	187	25.6
2	Beautiful	143	19.6
3	Amazing	118	16.1
4	Awesome	94	12.9
5	Interesting	88	12.0
6	Fantastic	61	8.3
7	Wonderful	40	5.5

tourist destinations and finds that users from East Asian countries are more interested in China's natural conditions, social conditions, and so on. This is mainly because of China's leadership in Asia and has helped other countries develop for many years. And there is no big difference in customs and traditions between countries in East Asia, which is one of the main reasons why the emotional vocabulary of inbound tourists in East Asia is not as good as that of inbound tourists in the West. Since modern times, Shanghai has also been well-known in the East Asian region, attracting tourists from many countries in the East Asian region to come to Shanghai for sightseeing. The specific situation is shown in Figure 10.

4. Discussion

In the experiment of inbound tourists' perception analysis of tourist destination image, the above experiment uses computer programs to classify UGC pictures and then conduct research and analysis through certain investigations. Title, description, user tags, and so on are found for perceiving target images by exporting high-frequency nouns to image titles, descriptions, user tags, and so on. Inbound tourists to Shanghai will get a certain image perception so as to conduct further research on the perception analysis of inbound tourists. The exported images will be annotated, and the UGC pictures of Shanghai inbound tourists will be obtained through the collection of high-frequency adjectives. In the eyes of all inbound tourists, Shanghai is a city with a modern commercial atmosphere and historical and cultural heritage. However, due to different cultural backgrounds, inbound tourists from different regions pay different attention to Shanghai's image, among which Western tourists mainly pay attention to Shanghai architecture and famous Shanghai attractions. In the eyes of inbound Western tourists, Shanghai is a very modern cultural city with very distinctive architectural features; inbound tourists from East Asia are more and more interested in the cultural landscape and natural scenery of Shanghai. In the eyes of inbound tourists from East Asia, Shanghai is a city full of vitality. Due to different cultural backgrounds, the emotional cognition of tourists from East and West is also different. Among them, Western inbound tourists have a positive impression of Shanghai, and they use strong emotional adjectives to express their emotions. "Beautiful" and "excellent" are the two most important words in emotional perception; inbound tourists from East Asia come to travel because of their more restrained mood, and the use of adjectives is relatively less abundant than that of Western tourists. For Western tourists, the most important word in

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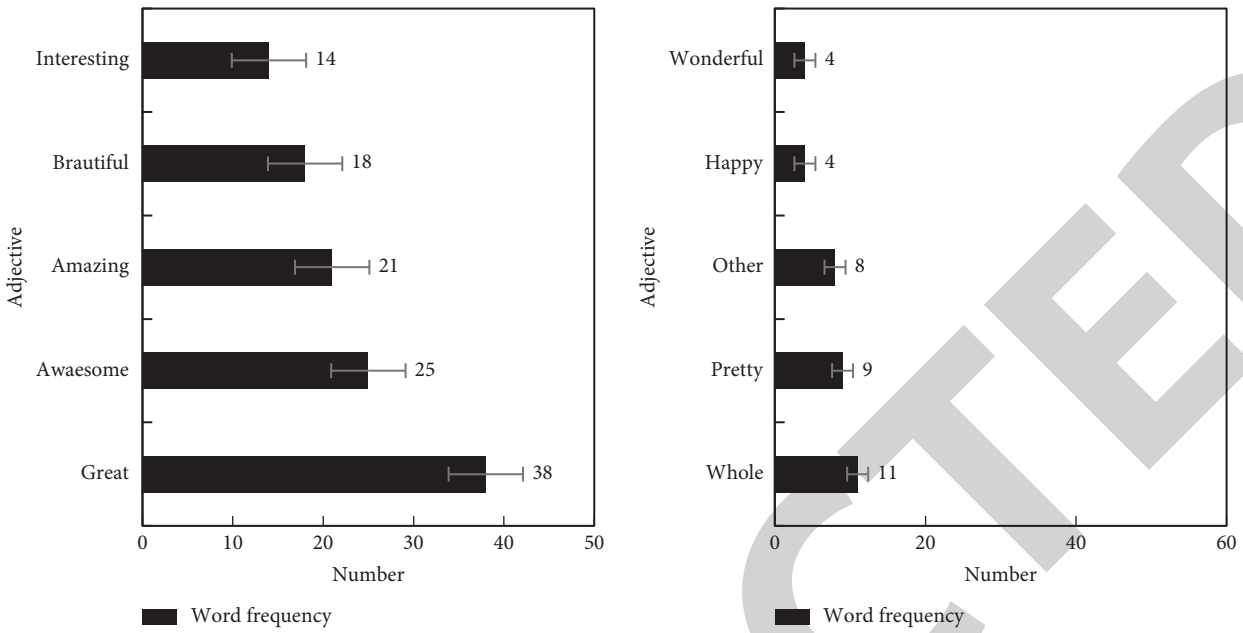

Figure 9: The emotional high-frequency words of Western inbound tourists to Shanghai.

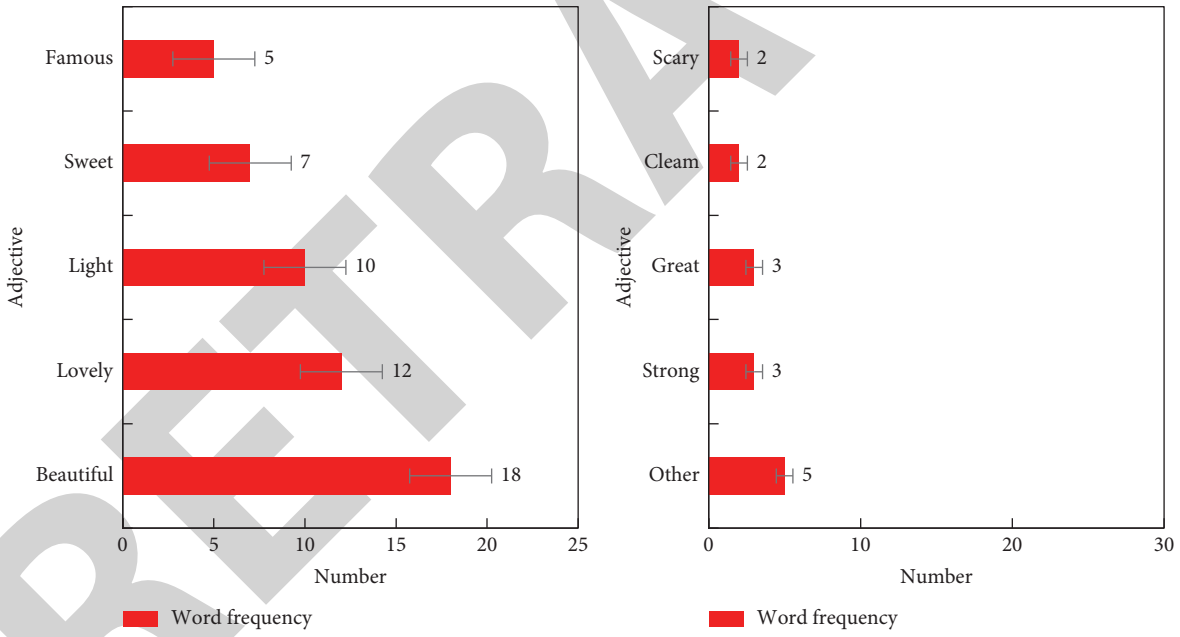

Figure 10: High-frequency words of East Asian inbound tourists' emotion towards Shanghai's image.

Shanghai image emotional perception is "beautiful," followed by "excellent" and "beautiful" emotional perception; inbound tourists from East Asian countries come to Shanghai to visit the natural landscape and feel the atmosphere of photography, which can stimulate the emotional perception of Shanghai to a certain extent. The most important word for inbound tourists from East Asian countries is "beautiful," and promotions to oriental tourists may focus on city life. Therefore, the external marketing of domestic destinations should adopt different marketing strategies according to different marketing objects to achieve better publicity effects.

5. Conclusions

This paper is classified based on computer programs. It collects and studies the collected UGC pictures and finally explores the image perception analysis of inbound tourists from different regions to the tourist destination. Among them, through the metadata of UGC pictures and related image comments in different social media suites, finally, this paper takes Shanghai, an international metropolis, as an example to study the difference in perception of destination image between inbound tourists from Western countries and inbound tourists from East Asia. By

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analyzing the metadata sources of UGC images, it is found that, in terms of inbound tourism to Shanghai, most of the Western inbound tourists are from the United States, the United Kingdom, and other regions. On the other hand, from a different background, Shanghai is deeply affected by factors such as economic and trade exchanges and regional relations, and a large part of it is affected by major festivals, which has led inbound tourists from many regions to choose Shanghai as their first choice for inbound tourism. At the same time, the short-term instability caused by various factors, such as political relations between different countries and the large cultural differences between the East and the West, is also one of the reasons for the above research results. To sum up, compared with traditional research methods, big data research methods that use computer programs for classification have obvious advantages in terms of data availability and objectivity. According to the details of UGC image data collected by different information websites, a comprehensive survey of inbound tourism destinations in different countries is carried out, which provides new materials and new approaches for the tourism research of this paper and utilizes the innovation of tourism research theory and practice. This experiment uses the image of inbound tourism destinations that directly affects the overseas marketing of domestic tourism destinations to conduct research, and the final research results provide new analysis dimensions and conclusions for tourism. However, the experiments still have certain limitations because the academic community has no common dimension in terms of destination image classification and affective perception, and the validity of visual and affective terms in specific experiments needs to be further investigated. The correlation between them is slightly insufficient, and the correlation between different words is slightly insufficient. Therefore, the amount of emotional image analysis data of oriental inbound tourists in the experiment is relatively low, but analyzing the emotional image differences of tourists from different sources has important practical significance for the passage of the destination.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that there are no conflicts of interest with any financial organizations regarding the material reported in this paper.

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