buildings

MDPI

Article

Built Heritage Perception and Spatial Patterns of Tourist Affect in Dali Bai Autonomous Prefecture, China: A Social Media–Based Assessment

Qiqi He [1,2], Ruiying Zhang [1,*] and Jiayi Liu [1]

[1] School of Architecture and Urban Planning, Huazhong University of Science and Technology, Wuhan 430074, China
[2] Pan Tianshou College of Architecture and Art Design, Ningbo University, Ningbo 315800, China
* Correspondence: d202581911@hust.edu.cn

Abstract

Against the backdrop of the concurrent processes of tourism development, spatial commercialisation, and architectural heritage conservation, identifying tourists' cognitive images of destinations and differences in textual valence provides an important basis for evaluating the quality of tourism built environments and implementing fine-grained spatial governance. Taking Dali Bai Autonomous Prefecture in Yunnan Province as the study area, this study analyses 32,992 Ctrip attraction reviews using high-frequency term identification, two-level theoretical coding, a semantic co-occurrence network, and affective analysis to construct an attraction-level image-affect analytical framework. The results show that, under a theory-guided codebook, review content can be organised into four dimensions: natural landscapes, built heritage, ethnic culture, and services and accessibility. Natural mountain–lake scenery has the broadest review coverage, while strong semantic associations among architectural character, Bai vernacular dwellings, and Bai culture indicate that built heritage is an important spatial representation through which tourists recognise local culture. Textual valence is predominantly positive: positive, neutral, and negative affective terms account for 71.87%, 22.65%, and 5.48%, respectively. Positively coded propositions mainly concern natural and ecological landscapes, accounting for 44.12%, whereas 71.92% of negatively coded propositions concern services and accessibility, particularly prices and commercialisation, crowding and order, transport routes, and staff service. The complete corpus covers 228 attractions, five of which lack classifiable valence text. Using 43.49% for high-attention text and 88.44% for high-valence text as internal benchmarks, the remaining 223 attractions are classified as high-attention-high-valence, high-attention-low-valence, low-attention-high-valence, and low-attention-low-valence, accounting for 37.67%, 26.01%, 21.52%, and 14.80%, respectively. These categories reflect relative textual focus and textual valence rather than absolute levels of tourist satisfaction. The study identifies an asymmetric distribution between positive resource-related expressions and negative issues associated with the visiting process, providing a basis for architectural heritage conservation, tourism-service improvement, commercial-development regulation, and subsequent stratified on-site verification at representative places.

Keywords: user-generated content; semantic co-occurrence network; aspect-based sentiment analysis; Bai traditional settlements; heritage tourism governance; attention-affect quadrants

Check for updates

Academic Editors: Kourosh Ahmadi and SeyedMohammad Kahangi Shahreza

Received: 6 August 2026
Revised: 31 August 2026
Accepted: 14 September 2026
Published: 16 September 2026

Copyright: © 2026 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license.

1. Introduction

Tourism destination image (TDI) refers to tourists' overall cognitive and affective evaluations formed from the attributes of a destination and is an important determinant of destination choice and subsequent behaviour. Classic research defines it as the sum of an individual's beliefs, ideas, and impressions about a particular destination [1] and further emphasises its complex, dynamic, and multidimensional nature [2]. Cognitive, affective, and overall images form a progressive relationship, with cognitive evaluations providing the basis for affective responses [3]. Recent big-data studies have incorporated popularity, affect, time, and place into composite measures [4]. Related research has expanded from the destination scale to the attraction scale and suggests that the relationship between projected–perceived image congruence and experience evaluation may be contextual and nonlinear [5,6]. The theory of city image explains spatial legibility through paths, edges, districts, nodes, and landmarks, providing a foundational framework for research on perceptions of the built environment [7]. However, complex destinations in which nature, settlements, culture, and tourism activities are closely intertwined remain difficult to capture solely through predefined physical elements.

Landscape perception theory explains the relationship between tourists and the environment from the perspective of human–place interaction. Environmental cognition is not passively received but actively constructed through visual experience, cultural background, personal experience, and spatial behaviour [8]. Related studies commonly distinguish three paradigms: expert assessment, psychophysics, and cognition [9]. In the context of Chinese heritage places, previous research has examined the materials, colours, decoration, landmarks, openness, scale, and layout of historic districts [10], social media images and spatial optimisation in traditional villages [11], and the complex experiential structure of living heritage in rural areas [12]. Research on Bai settlements in Dali further indicates enduring relationships between the spatial continuity of traditional courtyards, sociocultural practices, and the natural environment [13]. Review-based and on-site research in Xizhou Ancient Town likewise places Bai courtyards, traditional streets and lanes, and perceptions of architecture and ethnic culture within the same cultural-landscape framework [14]. These studies situate the Laomendong historic district as a specific case within research on heritage perception in China rather than as an example detached from the theoretical discussion. Tourists' evaluations of heritage places therefore concern not only architectural form and settlement space but also place meaning, spatial order, authenticity, and visiting comfort; authenticity itself encompasses interrelated dimensions of the built environment and psychosocial experience [15].

Social media platforms provide tourism research with large-scale user-generated content (UGC). Online reviews are naturalistic, timely, and broad in coverage and can identify image content beyond questionnaires predefined by researchers [16,17]. Related studies have expanded TDI measurement through projected–perceived image gaps [18], thematic structures and social perceptions [19], mixed analyses of cross-cultural UGC and survey data [20], and the evolutionary effects of reviews on cognitive, affective, and conative images [21]. In the Chinese tourism context, online reviews can support sentiment analysis of destination image [22], while text mining and social network analysis can reveal structural relationships among terms [23]. Combining social media big data with small data from surveys, experts, and stakeholders can also provide complementary evidence for historic district renewal [24]. However, representations of tourism places and their spatial distributions across different media sources may overlap only partially [25]. Methodological debates also remain regarding platform-user composition, the contextual adaptation of domain lexicons, and the correspondence between online expression and surveys or on-site

environments [26–28]. A large sample therefore does not automatically eliminate concerns about representativeness or interpretive boundaries.

Despite the rich existing literature, three limitations remain. First, big-data studies of TDI have focused mainly on destinations as a whole or on attribute-level analysis. A reproducible classification tool for joint differences between textual focus and textual valence at the attraction scale is still lacking, and the robustness and transferability of dataset-specific thresholds require clarification. Second, built heritage is often subsumed under general historical and cultural resources. Although semantic associations among architectural form, settlement pattern, and local culture have received attention [29,30], co-occurrence relationships are still readily extended into claims about mechanisms. Third, tourism sentiment analysis continues to face challenges involving domain-lexicon adaptation, aspect-level attribution, interpretation of low-frequency categories, platform bias, and temporal heterogeneity [26–28]. A quasi-experimental study based on Ctrip data also shows that public health events and associated policy phases may alter online-review behaviour and emotional expression [31]. It is therefore necessary to distinguish semantic association, textual valence, and actual satisfaction within a unified textual framework and to delimit interpretation through coding agreement, a transparent data-screening process, and subsequent stratified on-site verification.

To address these issues, this study uses Dali Bai Autonomous Prefecture, China, as the study area and constructs a destination-image-tourist-affect analytical framework based on 32,992 valid Ctrip attraction reviews. It seeks to answer three questions: (1) Which dimensions constitute tourists' cognitive image of Dali as a tourism destination, and what structural relationships exist among these dimensions? (2) How are the polarity and intensity of tourists' affective expressions distributed, and what specific factors generate positive and negative affect, respectively? (3) At the attraction level, what differentiated types emerge from combinations of review-content attention and affective valence, and what are their spatial distributions and governance implications?

The contributions of this study are threefold. First, at the theoretical level, it combines TDI theory with a landscape-perception perspective and proposes a four-dimensional relational structure comprising natural landscapes, built heritage, ethnic culture, and services and accessibility. Second, at the methodological level, it integrates high-frequency term identification, theoretical coding, a semantic co-occurrence network, and dual-level affective measurement. Theoretical coding follows the basic principles of constant comparison and codebook iteration [32,33], while Chinese affective-term identification draws on lexicon construction and domain-specific revision [34]. On this basis, the study proposes an exploratory two-dimensional attention-affect typology and uses prefecture-wide weighted proportions as internal comparative benchmarks for identifying attraction-level differences. Third, at the practical level, it proposes a pathway from social media screening to subsequent stratified on-site verification without presenting such verification as an empirical step completed in this study. Similar studies of historic towns have compared review analysis with participatory observation [24,35,36], providing complementary evidence for heritage conservation, service improvement, commercial regulation, and visitor-flow management.

2. Materials and Methods

2.1. Study Area

Dali Bai Autonomous Prefecture is located in west-central Yunnan Province, at the convergence of the western Central Yunnan Plateau and the southern end of the Hengduan Mountains, and is an important component of the urban agglomeration in western Yunnan (Figure 1). The prefecture administers Dali City; eight counties, namely Xiangyun, Binchuan, Midu, Yongping, Yunlong, Eryuan, Jianchuan, and Heqing; and three

autonomous counties, namely Yangbi, Nanjian, and Weishan [37]. The natural landscape centres on the integrated Cangshan–Erhai mountain–lake ecosystem. The Cangshan–Erhai National Nature Reserve comprises the Cangshan and Erhai sections and extends across Dali City, Yangbi County, and Eryuan County [38]. The history of the Nanzhao and Dali Kingdoms and Bai culture has shaped multilayered heritage, including ancient cities and towns, Bai vernacular dwellings, religious architecture, and intangible cultural heritage crafts [39]. Dali Prefecture continues to promote the conservation and use of historic cultural cities, traditional villages, and intangible cultural heritage [40]. While these rich resources have supported tourism development, they have also made attraction appeal, transport, facilities, and spatial organisation priorities for governance [41].

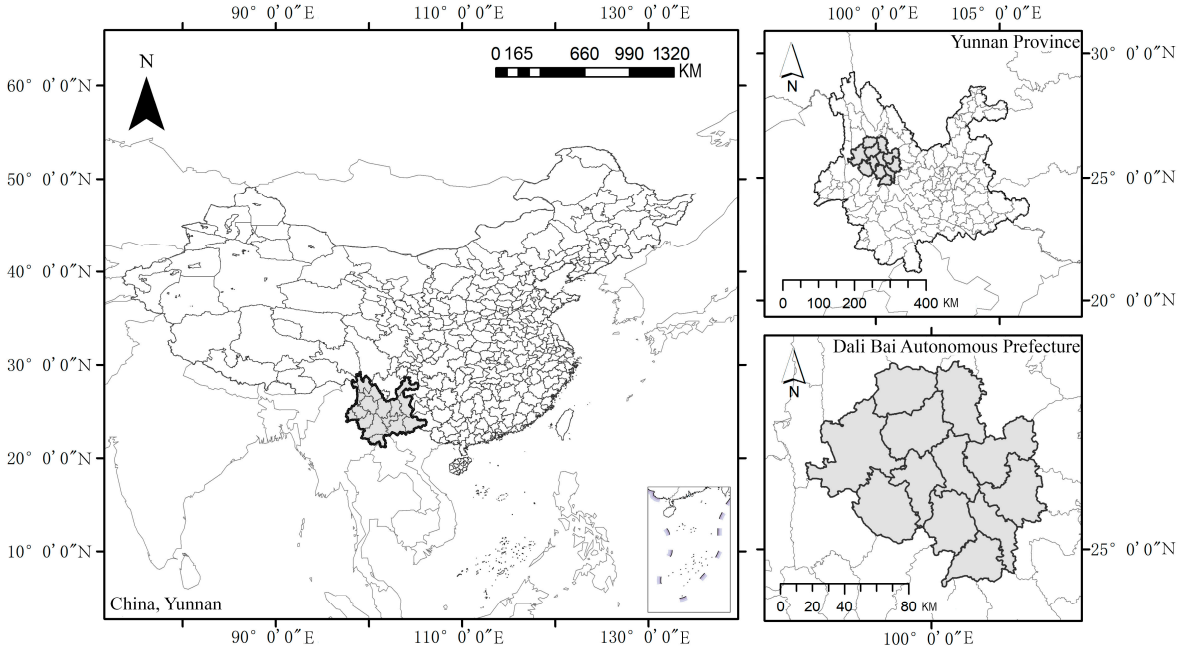

Figure 1. Study area.

Dali Prefecture was selected because it brings together the Cangshan–Erhai natural landscape, Bai traditional settlements, historic cultural cities, religious architecture, and intangible cultural heritage within one prefecture, producing strong interrelationships among the natural environment, built heritage, and ethnic culture. In addition, tourism in Dali has expanded from conventional sightseeing to leisure holidays, cultural experiences, and longer-stay consumption, while tourism commercialisation, visitor concentration, and heritage conservation have proceeded concurrently. Multi-source spatiotemporal research has confirmed significant differences in attraction appeal [41], and commercialisation at cultural heritage places may coincide with changes in experiential value and perceived authenticity [42]. These characteristics make Dali suitable for attraction-scale comparisons of image and textual valence.

Dali Prefecture also exhibits pronounced internal spatial differences. Core tourism areas such as Dali Ancient City, Erhai Lake, and Cangshan Mountain attract substantial tourism activity, whereas Jianchuan, Weishan, Yunlong, and Binchuan contain ancient cities and towns, religious heritage, traditional villages, and mountain landscapes. Previous research in Dali indicates spatial differences in attraction perception associated with transport accessibility and tourism development levels [43]. Finally, the Ctrip platform covers 228 attractions, and cleaning yielded 32,992 valid texts, supporting county-level aggregation and place classification. Dali thus combines the characteristics of a heritage-oriented tourism destination with the data conditions needed for intraprefectural comparison.

2.2. Data Sources

This study selected attraction reviews from the Ctrip app as the primary analytical corpus. During data collection, the destination was set to "Dali Bai Autonomous Prefecture, Yunnan Province"; the "Attractions" category was selected, and the list was retrieved by popularity. Attractions with zero reviews were skipped, and a maximum of 3000 reviews was collected for each attraction, resulting in 228 tourist attractions. The collected fields included attraction ID, attraction name, administrative area, address, commercial area, longitude and latitude, review ID, review time, tourist rating, and review text. These fields are the actual records collected for this study and are not replaced by descriptions from external literature.

The raw data comprised 33,339 reviews, covering the period from 22 January 2019 to 26 July 2026. During data processing, text encoding and punctuation formats were first standardised, and records with missing values, no substantive content, or too few Chinese characters were removed. Synonyms were then merged, stop words were removed, and duplicate texts were identified; for longer reviews that were completely identical, only the first record was retained. Information related to user identity was excluded from the analysis. After cleaning and deduplication, 32,992 valid reviews remained, containing 436,552 valid content tokens.

To improve the accuracy of topic identification and affective analysis, reviews were segmented at punctuation marks such as periods, question marks, exclamation marks, semicolons, and commas, producing 169,216 evaluative clauses. The smallest complete evaluative proposition was used as the unit of theoretical coding. On this basis, 73,991 aspect instances with explicit evaluation objects or attributes were identified. Review texts were used primarily for high-frequency term identification, cognitive-dimension analysis, and affective-orientation analysis. Evaluative clauses and aspect instances were used for second-order thematic coding and the identification of affective factors. Attraction IDs and longitude–latitude coordinates were used for attraction aggregation, matching with county-level administrative units, and subsequent analysis of spatial differences.

2.3. Framework

This study constructed a research framework comprising data quality control, image semantics, dual-level affect, spatial classification, and interpretive boundaries (Figure 2). First, Ctrip reviews were standardised, screened for validity, precisely deduplicated, tokenised, and segmented into minimal evaluative propositions. Second, high-frequency content terms were identified by combining document frequency, normalised term frequency, and review coverage; proposition-level theoretical coding was then completed, and a semantic network was constructed. Third, attention intensity was measured through the degree of textual focus on the target attraction. A four-quadrant model was established using the shares of high-attention and high-valence texts, and coding reliability was examined through stratified manual agreement validation. On-site verification at representative places is specified as a subsequent validation pathway for examining correspondence between online expression and the actual built environment; it is not a completed result of this study.

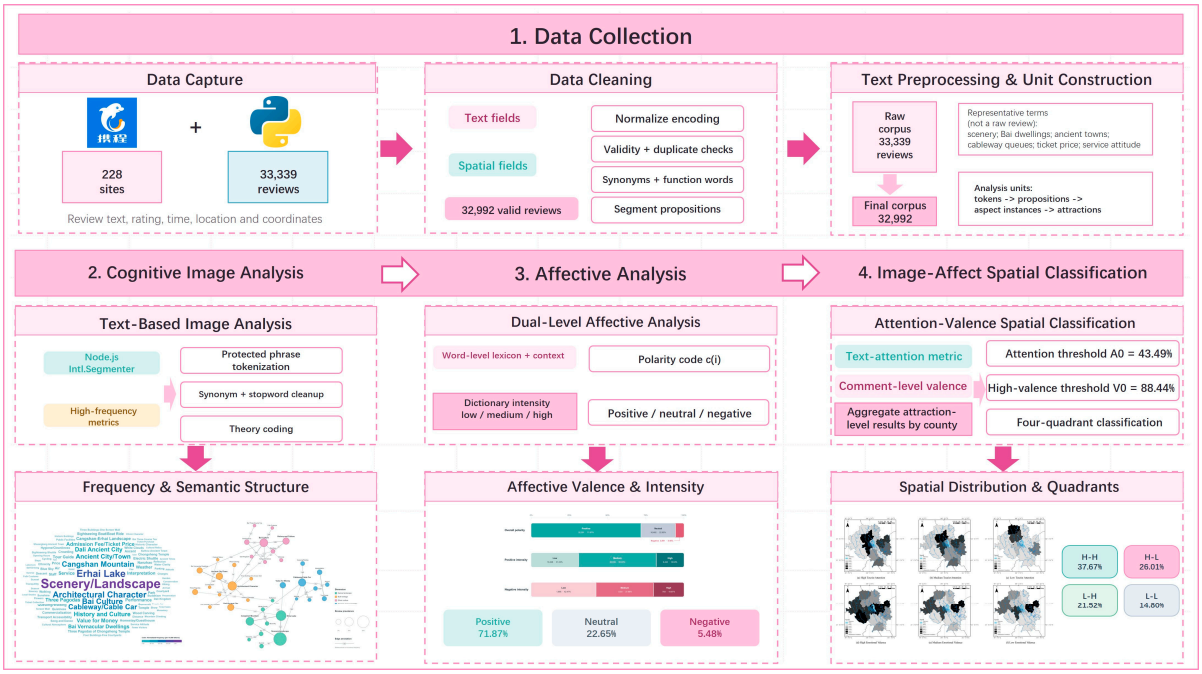

Figure 2. Research framework.

2.4. Methods

(1) Data quality control, analytical units, and reproducibility identifiers

The raw data contained 33,339 reviews. To make sample screening reproducible, the review text was first subjected to HTML-entity decoding and Unicode NFKC normalisation. URLs, HTML tags, zero-width characters, and bidirectional control characters were removed, and consecutive whitespace was collapsed. Texts containing fewer than two Chinese characters were treated as semantically invalid (147 records). Among normalised texts that were identical and contained at least 20 Chinese characters, only the first occurrence according to the source row number was retained (200 records); short generic reviews and their duplicates were retained. This yielded 32,992 valid reviews.

Text was tokenised with Node.js Intl.Segmenter (zh-CN, word granularity). Before tokenisation, attraction names, codebook keywords, and Dali-specific compound phrases were protected using a longest-match-first rule. Synonyms were then merged; function words, purely numeric tokens, tokens containing no Chinese characters, and tokens shorter than two characters were removed, yielding 436,552 valid content tokens. The complete protected-phrase list, synonym mappings, and stop-word list are preserved with the reproducibility materials. Proposition segmentation first converted conjunctions such as 'however', 'nevertheless', 'moreover', 'at the same time', 'in addition', and 'instead' into boundaries, then split text at periods, question marks, exclamation marks, semicolons, commas, and line breaks. Only segments containing at least four Chinese characters were retained, yielding 169,216 clauses or minimal evaluative propositions.

(2) High-frequency term measurement and theoretical coding

Let N denote the number of valid reviews, T the total number of valid content tokens, and f_t and df_t the number of occurrences of term t and the number of reviews mentioning that term, respectively. We report the raw term frequency, the normalised frequency per 10,000 tokens SF_t, and the review coverage C_t. The high-frequency table is sorted in descending order of df_t; ties are then ordered by f_t and the term.

$$\mathrm{SF}_t = \frac{f_t}{T} \times 10^4, C_t = \frac{\mathrm{df}_t}{N} \times 100\%$$

The 95% confidence intervals for proportions were calculated using the Wilson interval with $z = 1.96$. Topic identification used the formal codebook frozen before batch analysis, comprising four first-level dimensions, namely built heritage, natural landscapes, ethnic culture, and services and accessibility, and 21 s level themes. Each theme retained its definition, inclusion criteria, exclusion criteria, and keywords. Keyword-matching scores S_{sk} were calculated for proposition s and theme k, with keyword weights q of 1.0, 1.5, 2.0, and 2.5 for keywords of two, three, four to five, and at least six characters, respectively. Codebook development and revision followed the constant-comparison and theoretical-coding principles of grounded theory [32,33].

To clarify the theory-guided and open-correction process used to develop the codebook, this study combined directed content analysis with open coding. Tourism destination image, landscape perception, and heritage tourism theories provided four first-level dimensions: built heritage, natural landscapes, ethnic culture, and services and accessibility. On this basis, an initial codebook containing 21 candidate second-level themes was developed. During pilot coding, the four first-level dimensions served only as sensitising concepts rather than an immutable final structure; each candidate theme was specified by a definition, inclusion criteria, exclusion criteria, and boundary cases.

Before formal batch coding, two coders independently conducted pilot coding using the minimal complete evaluative proposition as the unit of analysis. The first round used a stratified sample of 600 propositions, the second used a further independent sample of 400 propositions, and subsequent saturation checks used independent batches of 200 propositions until two consecutive batches produced no new dimension or theme with clear boundaries and stability across cases. Pilot coding retained three unmatched outcomes: 'other candidate theme', 'insufficient semantics', and 'factual description'. Theme definitions, inclusion and exclusion criteria, and boundary cases were revised through open coding and constant comparison, with codebook versions and a change log retained. The unmatched propositions mainly represented semantic extensions of existing themes, insufficient context, or non-evaluative content and did not form a stable independent conceptual cluster. The four first-level dimensions were therefore retained, and the formal codebook of 21 s level themes was frozen after adjustment of the second-level themes and coding boundaries, before full-corpus statistics were calculated.

$$S_{sk} = \sum_{w \in D_k} q(|w|) I(w \in s)$$

Each proposition retained only the highest-scoring primary code. In ties, the longer matched keyword was selected first, followed by the smaller theme number. Conflicts involving material form and cultural meaning or spatial form and movement experience were resolved according to the codebook exclusion rules. A review could cover multiple themes; therefore, the sum of review-coverage rates could exceed 100%, whereas the share of aspect instances used the unique primary code as the denominator and summed to 100%. In total, 73,991 aspect instances were identified, and the composition ratio of theme k was calculated as follows.

Of the 169,216 clauses or minimal evaluative propositions, 73,991 (43.73%) met the thematic-anchor and inclusion rules and received an explicit primary code; the remaining 95,225 (56.27%) did not meet the corresponding conditions and were not forced into the four-dimensional framework. This unmatched rate indicates the proposition-level coverage of the formal codebook and cannot be interpreted as evidence of a stable fifth dimension. This treatment allows the theoretical dimensions to serve an organising function without

equating the predefined dimensions with categories that emerged independently from the data.

$$P_k = \frac{a_k}{\sum_{r=1}^{K} a_r} \times 100\%$$

(3) Semantic structure network of high-frequency terms

The semantic network used the minimal evaluative proposition, rather than a fixed word-distance window, to define co-occurrence. Nodes were limited to the 100 theoretical content terms with the highest document frequencies. If term i and term j co-occurred at least once in proposition c, an undirected edge was formed, with edge weight w_{ij} equal to the number of propositions in which they co-occurred. Node strength s_i was the sum of adjacent edge weights, and node contribution NC_i was normalised by the total node strength of the network. This procedure draws on core–periphery analysis in destination-image social networks and research on tourism semantic relationships [23,44,45].

$$w_{ij} = \sum_{c=1}^{M} I(i \in c \wedge j \in c), s_i = \sum_{j} w_{ij}, \mathrm{NC}_i = \frac{s_i}{\sum_r s_r}$$

The 200 highest-weight relationships were retained for audit. To avoid an overly dense figure, the visualisation was first constructed from the 50 highest-weight candidate relationships after ranking: the maximum spanning forest for each first-level dimension was extracted, one strongest non-tree internal edge was added to each dimension, and the eight strongest cross-dimensional links were then added. Node size represents review coverage, node colour represents first-level dimension, and edge width represents co-occurrence weight. The layout was initialised with a fixed golden-angle arrangement and 950 deterministic force-relaxation iterations, without random numbers; geometric distance in the figure serves readability only and is not interpreted as semantic similarity. Frequency robustness was evaluated by a deterministic split based on the parity of the record ID and by the Spearman rank correlation of the top 100 terms.

(4) Term-level affective polarity, lexicon intensity, and affective-factor coding

Polarity codes 0, 1, and 2 were mapped to neutral, positive, and negative, respectively. After tokenisation, longest contiguous phrase matching was performed from the start of each token sequence, with a maximum length of six tokens. Only the longest match at each position was counted, and tokens already used were not counted again. The affective resources were based on the DUTIR affective lexicon ontology [46] and supplemented by the semi-automatic expansion method for Chinese online affective lexicons [34]. If a negator occurred an odd number of times among the first three tokens within a sentence, positive and negative polarities were reversed while neutral polarity remained unchanged. The basis for contextual polarity reversal came from phrase-level polarity research [47], but the three-token window was a parameter frozen in this study. Expressions equivalent to 'not only', 'not merely', 'have no choice but to', 'cannot but', 'there is no one who does not', and 'not without' were not treated as negation. Degree adverbs were retained as audit markers and did not change inherent lexicon intensity. Domain revision and manual validation followed recommendations for contextual adaptation in tourism sentiment analysis [26,48].

$$\pi_c = \frac{n_c}{\sum_{k \in \{P,Z,N\}} n_k} \times 100\%, \pi_{cb} = \frac{n_{cb}}{\sum_{h \in \{L,M,H\}} n_{ch}} \times 100\%$$

Here, n_c is the number of hits for polarity c. Lexicon intensity s was classified as low, medium, or high for values of 1–3, 4–6, and 7–9, respectively. Within positive or negative terms, the intensity proportion used all hits of that polarity as the denominator. This

indicator therefore reflects the composition of affective terms and their inherent lexicon intensity and should not be interpreted as review satisfaction.

$$B(s) = \begin{cases} L & \text{if } 1 \le s \le 3 \\ M & \text{if } 4 \le s \le 6 \\ H & \text{if } 7 \le s \le 9 \end{cases}$$

The third-level factor coding used as input the 73,991 propositions that had received a primary thematic code. The program further segmented text at ordinary punctuation and transition markers equivalent to 'however', 'but', 'nevertheless', 'yet', 'only', 'unfortunately', and 'regrettably'. A segment was retained only when the affective marker and thematic anchor occurred in the same local fragment; fragments containing ordinary positive and negative markers simultaneously and lacking a protection rule were classified as polarity-unstable and removed. Mixed propositions involving services, ticketing, transport, or prices followed the predefined priority routes; other propositions inherited the upstream primary code. The coding system comprised four first-level dimensions, 15 s level themes, and 90 potential third-level proposition types. Duplicates were removed using review ID x second-level theme x polarity x third-level proposition as the key, retaining the shorter fragment when duplicates occurred. This step represents aspect-level affect attribution and is consistent with the analytical logic of linking affective direction to specific evaluation objects in tourism UGC [49]. The proportion of dimension or theme d under polarity c used all deduplicated propositions of that polarity as the denominator.

Among the 73,991 propositions that received a primary thematic code, 14,682 deduplicated propositions entered the positive-factor table and 1346 entered the negative-factor table. The remaining 57,963 did not enter Tables 2 and 3 because they did not yield a directionally explicit positive or negative attribution with local co-occurrence, or because they were removed during polarity-instability and duplicate-key processing. Because the filtering conditions may overlap, the reasons are not reported as mutually exclusive counts. Third-level categories with frequencies below five are reported only as sparse signals and are not interpreted as stable patterns.

$$\theta_{cd} = \frac{M_{cd}}{\sum_j M_{cj}} \times 100\%$$

(5) Review-level textual valence

Spatial analysis used an independent review-level valence pipeline. This pipeline collapsed the lexicon only by term direction: polarities 1 and 2 were mapped to positive and negative, respectively; polarity 0 was then mapped according to affective category, with PA, PB, PD, PE, PG, PH, and PK classified as positive, PC as neutral, and the remaining prespecified negative categories as negative. Only directionally conflicting terms were removed. Fixed revisions were applied to the Chinese expressions equivalent to 'shocking', 'stimulating', and 'not as good as' in the tourism context, and 23 high-frequency non-evaluative terms were excluded, producing a 26,871-term valence lexicon. Matching again used the longest phrase of up to six tokens and the odd-negation rule over the first three tokens in the same clause; star ratings were not included. This pipeline measures textual valence only, consistent with online-review sentiment analysis that treats textual evidence and platform ratings separately [22,50].

For review r, positive, neutral, and negative hits P_r, Z_r, and N_r were counted, and net valence v_r was calculated. If their sum was zero, the review was recorded as 'unmatched'; otherwise, $P_r > N_r$, $P_r = N_r$, and $P_r < N_r$ defined high, medium, and low valence, respectively. Neutral terms entered only the denominator of net valence and the unmatched

determination and did not determine direction. The proportions of high, medium, and low valence all used classifiable reviews as the denominator. This classification expresses relative valence direction and is not equivalent to lexicon intensity.

$$v_r = \frac{P_r - N_r}{P_r + Z_r + N_r}$$

(6) Attraction attention intensity

The attention-intensity pipeline used the complete review as the common analysis unit and independently segmented propositions at periods, question marks, exclamation marks, semicolons, commas, and line breaks. Segments containing at least one Chinese character were retained; the four-character filter used in theoretical coding was not applied. This indicator represents the degree to which a review focuses textually on the target attraction of the page on which it was posted. Each proposition received a target weight: 1 when only the target attraction appeared; 0 when only another attraction appeared without a spatial-relation expression; 0.75 when another attraction appeared with an expression such as 'near', 'looking toward', 'overlooking', or 'opposite'; and, when the target and other attractions appeared together, the proportion of target-attraction hits among all attraction hits, subject to a minimum weight of 0.75 when a spatial-relation expression was present. For a proposition without an explicit attraction entity, the weight of the preceding adjacent explicit proposition was inherited; if none existed, the weight of the following adjacent explicit proposition was inherited only when it was at least 0.5; otherwise, the page context of the review's attraction assigned a weight of 1. The attention score for a complete review was defined by $R_r = \frac{T_r}{L_r}$, where L_{rj} is the number of Chinese characters in proposition j, $L_r = \sum_j L_{rj}$ is the total number of Chinese characters in the propositions of that review, $w_{rj} \in [0, 1]$ is the target weight of proposition j, $C_r = \sum_j w_{rj}$ is the weighted proposition count, and $T_r = \sum_j (L_{rj} \cdot w_{rj})$ is the weighted character total. Thus, R_r (also denoted by R_r) is a dimensionless weighted character proportion ranging from 0 to 1. Before formal statistics, all parameters were frozen: 0.75 was used for both the lower bound of relation-proposition weights and the lower bound of the high R_r interval; 0.35 was the boundary for low focus; 15, 30, and 50 were thresholds for weighted target characters T_r, and 1.25 and 3 were thresholds for weighted proposition count C_r.

$$T_r = \sum_j (L_{rj} \cdot w_{rj}), C_r = \sum_j w_{rj}, R_r = \frac{T_r}{L_r}$$

Attention levels were classified according to R_r and the extent of target-content coverage: $R_r < 0.35$ indicated low attention; $0.35 \leq R_r < 0.75$ indicated medium attention; when $R_r \geq 0.75$, $T_r \leq 15$, and $C_r \leq 1.25$ held, attention was low; $R_r \geq 0.75 \wedge [T_r \geq 50 \vee (T_r \geq 30 \wedge C_r \geq 3)]$ indicated high attention; all other cases were classified as medium attention. Here, T_r denotes the weighted target-character count and C_r the weighted proposition count. The rule did not use affective terms, rating values, or exclamation marks.

(7) Attention-affect quadrants, candidate ranking, and threshold interpretation

For attraction i, H_i and N_i denote the numbers of high-attention reviews and reviews with valid attention scores, respectively, while P_i and C_i denote the numbers of high-valence reviews and reviews with classifiable valence, respectively; $A_i = \frac{H_i}{N_i}$ and $V_i = \frac{P_i}{C_i}$ are then defined as shown. Here, C_i represents the attraction-level review count and differs from the review-level weighted proposition count C_r defined above. Prefecture-wide weighted proportions were used to define the thresholds:

High-attention threshold $A^* = \frac{\sum_i H_i}{\sum_i N_i} = \frac{14348}{32992} = 0.4348933$;

High-valence threshold $V^* = \frac{\sum_i P_i}{\sum_i C_i} = \frac{22518}{25461} = 0.8844115$.

Accordingly, the condition for the high group was $A_i \geq A^* \wedge V_i \geq V^*$. Recalculation from the consolidated affective-valence quadrant table placed 223 attractions in the four quadrants, with thresholds of 43.49% and 88.44%. Attractions meeting or exceeding both thresholds were classified as high attention-high valence; those meeting or exceeding only the attention threshold as high attention-low valence; those meeting or exceeding only the valence threshold as low attention-high valence; and those below both thresholds as low attention-low valence. Low valence indicates only that the high-valence share is below the prefecture-wide level and does not mean that negative reviews predominate. Attractions without classifiable valence reviews were excluded from the quadrant analysis. The prefecture-wide weighted proportions allow each classifiable review to enter the prefecture-wide benchmark according to its observed count and are suitable for internal comparison within this dataset, but they are not statistically optimal cut-off points. Median, quantile, or fixed-percentage thresholds would shift the cut-off positions, and attractions near a threshold might be reclassified. Because alternative thresholds were not recalculated in this study, no claim is made that the quadrant classification is stable across threshold choices; it is limited to an exploratory screening tool.

$$A_i = \frac{H_i}{N_i}, V_i = \frac{P_i}{C_i}, A^* = \frac{\sum_i H_i}{\sum_i N_i}, V^* = \frac{\sum_i P_i}{\sum_i C_i}$$

To select representative places for each quadrant, N_i and C_i were both required to be at least 10, and places were ranked in descending order by the following quadrant-extreme score; ties were ordered by the smaller of the two sample sizes and then by attraction ID, and the top eight were selected for each class. This score measures the joint extremity of the quadrant direction and is not the Euclidean distance to the threshold lines.

$$Q_{\mathrm{HH}} = \sqrt{A_i V_i}, Q_{\mathrm{HL}} = \sqrt{A_i(1 - V_i)}, Q_{\mathrm{LH}} = \sqrt{(1 - A_i)V_i}, Q_{\mathrm{LL}} = \sqrt{(1 - A_i)(1 - V_i)}$$

Previous research shows that social media, surveys, and on-site environments may agree or may exhibit systematic differences [24,28,35,36]. The statistical analysis and classification in this study use only online text and manual agreement validation; on-site observation was not included as an analytical input. Systematic on-site verification is reserved for subsequent research to explain online–offline differences and identify classification errors, without retroactively altering the original text classifications.

(8) Manual agreement validation and computational audit

After the codebook was frozen, independent samples that did not overlap with the pilot-coding samples were used for dual-coder agreement and automated-coding validity tests. To ensure independent validity of the horizontal axis of the four-quadrant model, manual agreement validation was stratified within the same analytical units. The first layer sampled 1200 affective-theme propositions; the second added 300 complete reviews stratified by county/district and attention category (high, medium, and low) specifically to verify attention intensity. Two coders independently and blindly labelled affective polarity, affective intensity, first- and second-level themes, and complete-review attention intensity; disagreements were adjudicated by a third researcher. We report kappa for affective polarity, weighted kappa for affective intensity, kappa for first-level themes, kappa for second-level themes, macro-F1 for affective and thematic identification, and agreement metrics for attention intensity. Attention-intensity kappa was 0.84, and attention-intensity F1 was 0.82. This design corrected the previous mixing of proposition-level and review-level units and provided an independently verified basis for measuring textual valence on the affective dimension of the attention-affect quadrants.

3. Results

3.1. Composition and Structure of the Cognitive Image

3.1.1. High-Frequency Term Identification

To characterise the basic vocabulary of tourist perception, 32,992 valid reviews were tokenised, synonym-merged, and cleared of stop words. Moreover, 436,552 valid content terms were obtained, and term importance was measured by frequency, normalised frequency, and review coverage (Table 1). Normalised frequency denotes the number of occurrences per 10,000 words, and review coverage denotes the share of reviews mentioning the term. Robustness tests showed a Spearman correlation of 0.959 between the rankings of high-frequency content terms in two half-samples. After the excluded exact duplicate long texts were added back, the rank correlation was 0.9996, indicating that the principal high-frequency terms and their rankings were highly stable across samples and deduplication rules.

'Scenery/landscape' occurred 8980 times, with a normalised frequency of 205.70 per 10,000 words and review coverage of 24.17%, making it the most prominent high-frequency term (Table A1). 'Erhai Lake' and 'Cangshan Mountain' occurred 6711 and 3795 times, respectively, with normalised frequencies of 153.73 and 86.93 per 10,000 words and coverage rates of 13.99% and 8.55%. Terms such as 'Cangshan–Erhai', 'lake water', 'blue sky', 'white clouds', and 'air' were also prominent, indicating that iconic mountain–lake scenery and its visual environment are important spatial references in tourists' descriptions of Dali.

'Architectural character' occurred 5046 times, with a normalised frequency of 115.59 per 10,000 words and coverage of 10.44%. The coverage rates of 'ancient city/old town', 'Dali Ancient City', and 'Bai vernacular dwellings' were 5.84%, 5.35%, and 3.73%, respectively. Terms such as 'Three Pagodas', 'wood carving', 'temple', 'city gate', and 'courtyard' also entered the high-frequency sequence, reflecting strong attention to architectural form, street and settlement spaces, and landmark structures. 'Bai culture' occurred 4643 times, with coverage of 8.75%; 'history and culture' had coverage of 5.47%. Terms such as 'Nanzhao', 'performance', 'song and dance', 'Three-Course Tea', and 'tie-dye' reflected tourists' recognition of local history and ethnic character.

The visiting process was also a major topic in reviews. 'Cable car/gondola' occurred 4303 times, with coverage of 7.54%. Terms such as 'ticket/admission price', 'service', 'interpretation', 'tour guide', 'battery-powered shuttle', and 'transport convenience' indicate attention to transport, ticketing, and reception experiences. 'Value for money', 'queue/waiting', 'crowding/many people', and 'commercialisation' reflect concerns about price, order, and commercial development.

As shown in Figure 3, high-frequency terms consisted mainly of proper nouns and noun phrases, supplemented by visiting activities and evaluative terms. They initially reveal a semantic sequence of spatial objects—local symbols—visiting activities—experiential evaluation, providing a vocabulary basis for extracting perceptual dimensions.

Table 1. Identification of perceptual dimensions.

Code	First-Level Dimension	Second-Level Theme	Review Docs.	Review Coverage	95% CI Lower	95% CI Upper	Aspect n	Aspect Share	Within-Dim. Comp.	Representative Terms
A1	Built heritage 27.96%	Architectural form and Bai character	4260	12.91%	12.55%	13.28%	7469	10.09%	41.48%	architectural character, Bai vernacular dwellings, wood carving, courtyard, three buildings and one screen wall, four-sided courtyard with five open courtyards, screen wall, historic architecture
A2		Street and settlement spaces and spatial pattern	3746	11.35%	11.02%	11.70%	5837	7.89%	32.41%	ancient city/old town, Dali Ancient City, Xizhou Ancient Town, Shuanglang Ancient Town, Shaxi Ancient Town, Weishan Ancient City, square, village
A3		Historic remains and conservation authenticity	1221	3.70%	3.50%	3.91%	928	1.25%	5.15%	relics, conservation, old, historic sites, preservation, well preserved, sense of history, ruins
A4		Structures, religious architecture, and garden spaces	3128	9.48%	9.17%	9.80%	3774	5.10%	20.96%	Three Pagodas, park, Chongsheng Temple, Three Pagodas, pier, garden, scenic area, city gate, main hall
B1	Natural landscapes 45.58%	Mountain–lake landforms and views	13,272	40.23%	39.70%	40.76%	19,116	25.84%	77.16%	scenery/landscape, Erhai Lake, Cangshan Mountain, Cangshan–Erhai, mountaintop, island, lake water, viewpoint
B2		Waterside ecology and environmental quality	1505	4.56%	4.34%	4.79%	834	1.13%	3.37%	clear, seaside, ecology, water quality, ecological corridor, Erhai ecological corridor, lakeside, wetland
B3		Vegetation, biota, and pastoral landscapes	1089	3.30%	3.11%	3.50%	1124	1.52%	4.54%	flowers, seagulls, trees, vegetation, rice fields, sea of flowers, pastoral landscape, old tree
B4		Climate, seasons, and sensory environment	3644	11.05%	10.71%	11.39%	3701	5.00%	14.94%	weather, air, blue sky, white clouds, fresh, sunlight, quiet, sunset
C1	Ethnic culture 23.72%	Bai identity and local culture	3866	11.72%	11.38%	12.07%	3423	4.63%	32.81%	Bai culture, ethnic group, cultural atmosphere, ethnic character, ethnic minority, ethnic customs, ethnic culture, local character
C2		Intangible heritage crafts and participatory experience	292	0.89%	0.79%	0.99%	305	0.41%	2.92%	tie-dye, handicrafts, silverware, intangible heritage, silver ornaments, traditional crafts, hand-making, intangible cultural heritage
C3		History, religion, and cultural narratives	4040	12.25%	11.90%	12.60%	4348	5.88%	41.67%	history and culture, Nanzhao, Chongsheng Temple, temple, Dali Kingdom, Buddhism, monastery, ancient
C4		Folk customs, festivals, and performances	1639	4.97%	4.74%	5.21%	1341	1.81%	12.85%	performance, song and dance, show, folk custom, dance, March Fair, market, custom
C5		Local life and food culture	1001	3.03%	2.85%	3.22%	1017	1.37%	9.75%	Three-Course Tea, snacks, local people, rushan cheese, Xizhou baba, residents, everyday vibrancy

Table 1. *Cont.*

Code	First-Level Dimension	Second-Level Theme	Review Docs.	Review Coverage	95% CI Lower	95% CI Upper	Aspect n	Aspect Share	Within-Dim. Comp.	Representative Terms
D1	Services and accessibility 39.44%	Staff service and cultural interpretation	2974	9.01%	8.71%	9.33%	3262	4.41%	15.70%	service, interpretation, tour guide, staff, service attitude, attitude, interpreter, professional
D2		Public facilities, hygiene, and safety	917	2.78%	2.61%	2.96%	892	1.21%	4.29%	hygiene/cleanliness, public facilities, safety, toilet/restroom, rubbish, seat, rest area, charging
D3		External transport, connections, and parking	1758	5.33%	5.09%	5.58%	1822	2.46%	8.77%	transport convenience, parking, self-driving, arrival, taxi, bus, distance, chartered vehicle
D4		Internal routes and movement experience	5275	15.99%	15.60%	16.39%	6643	8.98%	31.98%	cableway/gondola, battery-powered shuttle, uphill, downhill, cruise/boat, sightseeing vehicle, hiking, walking
D5		Ticketing, opening, and wayfinding information	2312	7.01%	6.74%	7.29%	2065	2.79%	9.94%	admission ticket/price, ticket collection, ticket purchase, ticket sales, reservation, opening, entrance, free admission
D6		Food, accommodation, and reception quality	1158	3.51%	3.32%	3.71%	1072	1.45%	5.16%	homestay/inn, hotel, room, accommodation, attendant, restaurant, eating, catering
D7		Price, consumption, and commercial environment	3513	10.65%	10.32%	10.99%	3705	5.01%	17.83%	value for money, commercialisation, price, charge, consumption, coffee shop, store, bar
D8		Crowding, order, and tourism pressure	1374	4.16%	3.95%	4.39%	1313	1.77%	6.32%	queue/waiting, crowding/many people, few people, low season, peak season, holiday, order, noisy

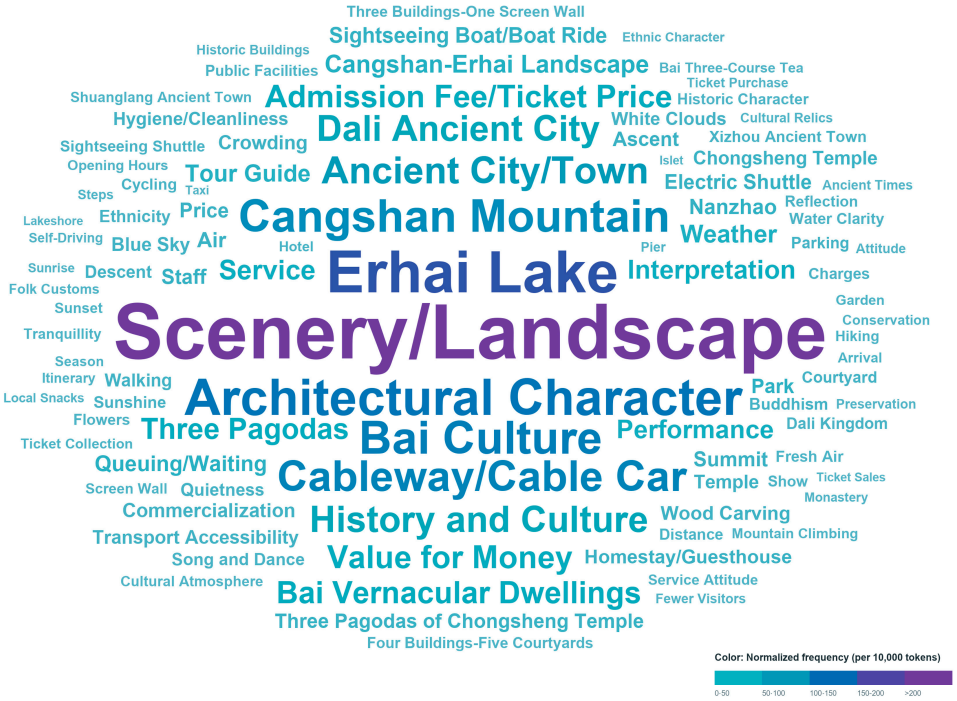

Figure 3. High-frequency term identification.

3.1.2. Identification of Perceptual Dimensions

Building on the high-frequency analysis, the study used the minimal complete evaluative proposition as the coding unit and applied two-level theoretical coding and lexicon-assisted topic identification according to the frozen formal codebook. The coded results were organised into four first-level dimensions: built heritage, natural landscapes, ethnic culture, and services and accessibility (Table 1). Theoretical coding followed the pre-frozen codebook, constant-comparison, and unique-primary-code rules [32,33]. Because a review could involve multiple dimensions, the sum of review-coverage rates could exceed 100%; the composition of aspect instances was calculated from the primary code of each evaluative clause.

Natural landscapes appeared in 15,214 reviews, with coverage of 45.58%; 24,775 aspect instances were identified, accounting for 33.48%, making this the most widely covered dimension. ‘Mountain–lake landforms and views’ accounted for 77.16% and focused mainly on Cangshan Mountain, Erhai Lake, and associated views. Climate and sensory environment accounted for 14.94%, whereas waterside ecology and pastoral vegetation represented smaller shares. This indicates that Dali’s natural image is dominated by the broad mountain–lake configuration of Cangshan and Erhai.

Services and accessibility appeared in 13,012 reviews, with coverage of 39.44%, and accounted for 28.08% of aspect instances. ‘Internal routes and movement experience’ accounted for 31.98%, followed by price, consumption, and commercial environment (17.83%) and staff service and cultural interpretation (15.70%). The remaining aspects involved ticketing and wayfinding, transport connections, crowding and order, food and accommodation, and public facilities, indicating that tourist attention extended from service attitude to the entire visiting process.

Built heritage appeared in 9226 reviews, with coverage of 27.96%, and accounted for 24.34% of aspect instances. Architectural form and Bai character accounted for 41.48%, street and settlement space and spatial pattern for 32.41%, and religious buildings, structures, and garden spaces for 20.96%; conservation authenticity accounted for only 5.15%. Tourists primarily identified local architectural character through Bai vernacular dwellings, ancient

cities and towns, and the Three Pagodas, while attention to heritage-conservation status and restoration authenticity was relatively limited.

Ethnic culture appeared in 7825 reviews, with coverage of 23.72%, and accounted for 14.10% of aspect instances. History, religion, and cultural narratives accounted for 41.67%, and Bai identity and local culture for 32.81%; folk performances, local life, and food represented smaller shares, while intangible cultural heritage crafts and participatory experiences accounted for only 2.92%. This indicates that the ethnic-cultural image is communicated mainly through Nanzhao history, religious narratives, and Bai identity symbols.

Overall, Dali's cognitive image as a tourism destination exhibits a four-dimensional relational structure in the review corpus. Natural mountain–lake scenery has the broadest coverage, built heritage and ethnic culture have strong semantic associations, and services and accessibility primarily represent the visiting process. This structure organises the textual evidence and does not represent a tested causal hierarchy.

3.1.3. Semantic Structure Network

To reveal semantic links among high-frequency terms, theoretical content terms were used as nodes, the co-occurrences of two terms within the same minimal evaluative clause as edges, and co-occurrence frequency as edge weight. The 200 highest-weight relationships were retained for audit, and the semantic network was drawn according to the prespecified rules (Figure 4) [23,44,45].

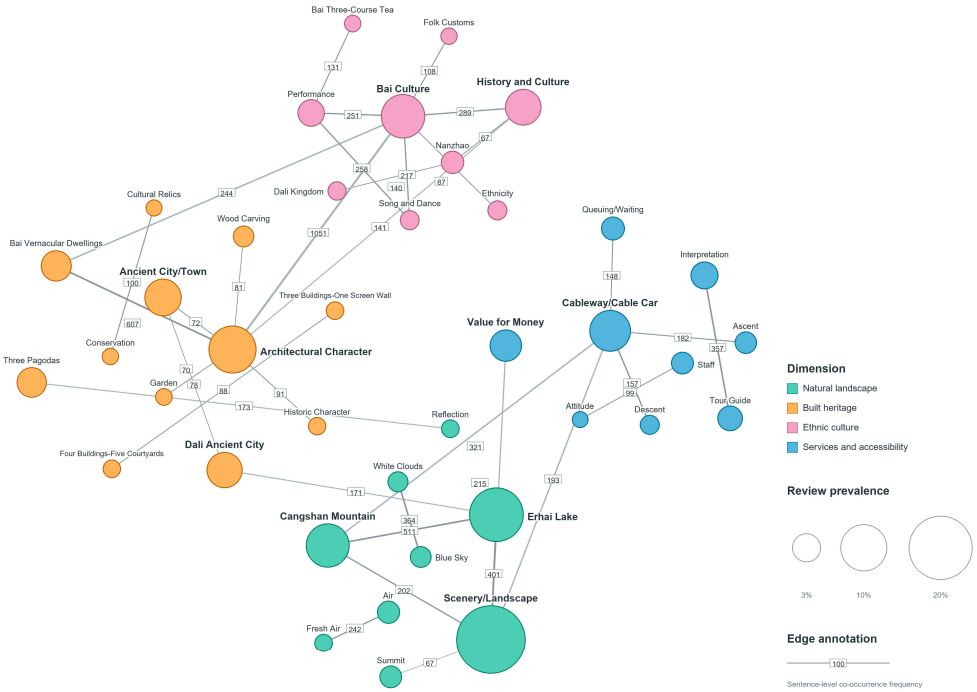

Figure 4. Semantic structure network of high-frequency terms.

The network showed clear cluster relationships and cross-topic connections. 'Bai culture—architectural character' co-occurred 1051 times and was the strongest term relationship; 'Bai vernacular dwellings—architectural character' co-occurred 607 times, and 'Bai vernacular dwellings—Bai culture' 244 times. The close links among architectural form, Bai vernacular dwellings, and ethnic culture indicate that tourists often identify local culture through visible architectural character, making built heritage an important material carrier of Bai cultural expression. 'Bai culture—history and culture' co-occurred 289 times, while 'Bai culture—performance' and 'performance—song and dance' co-occurred 251 and

258 times, respectively, indicating that tourists' understanding of ethnic culture also relies on historical narratives and staged activities.

Natural-landscape terms formed relatively concentrated semantic combinations. 'Cangshan Mountain—Erhai Lake' co-occurred 511 times, 'Erhai Lake—scenery/landscape' 401 times, and 'blue sky—white clouds' 364 times. Tourists primarily organised their perception of natural landscapes around the integrated mountain–lake pattern of Cangshan and Erhai and supplemented it with sensory descriptions such as blue sky, white clouds, and air.

Terms relating to services and visiting activities showed co-occurrence patterns that linked landscape objects with evaluations of the visiting process. 'Tour guide–interpretation' co-occurred 357 times, showing that cultural interpretation was an important component of service evaluation. 'Cangshan Mountain–cable car/gondola' co-occurred 321 times, showing that the mountain landscape and transport facilities frequently appeared within the same evaluative proposition. Overall, the semantic network comprised interconnected clusters of mountain–lake scenery, architecture and culture, and services and visiting activities. These results support associated expressions of material space, cultural meaning, and the visiting process in the reviews but do not constitute tests of mediation or causal mechanisms.

3.2. Spatial Expression of Tourist Affect

3.2.1. Distribution of Affect

Figure 5 shows that positive, neutral, and negative affective terms accounted for 71.87%, 22.65%, and 5.48%, respectively. Overall, textual valence in tourist reviews was dominated by positive expressions, with positive terms outnumbering negative terms by approximately 13.1 to 1. In terms of lexicon intensity, medium-intensity expressions accounted for 50.93% of positive terms, while low- and high-intensity expressions accounted for 31.03% and 18.04%, respectively, indicating that most positive terms had medium lexicon intensity. Among negative terms, low intensity accounted for 42.47%, medium intensity for 37.66%, and high intensity for 19.87%. These proportions describe the direction and inherent lexicon intensity of affective terms and cannot be interpreted directly as tourist satisfaction or overall experience quality.

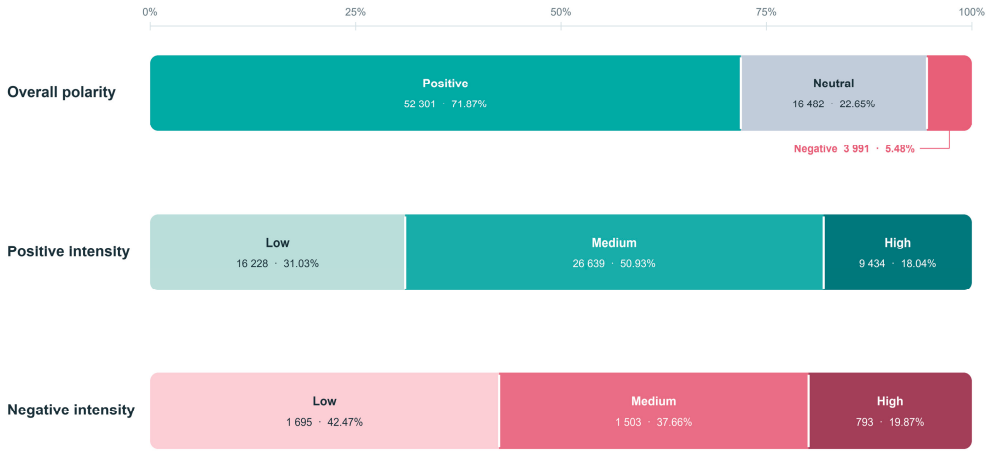

Figure 5. Distribution of affective intensity.

Third-level coding further revealed the content composition of propositions with different valences. Table 2 shows that natural and ecological landscapes accounted for 44.12% of positively coded propositions, of which mountain–lake scenery and viewing experience accounted for 32.80%. Services and accessibility and built heritage and settlement space accounted for 26.60% and 20.17%, respectively, while ethnic culture and living

heritage accounted for 9.11%. In addition to the Cangshan–Erhai landscape, architectural character, service interpretation, transport routes, climatic environment, and reasonable prices frequently co-occurred with positive expressions.

Table 3 shows that services and accessibility accounted for 71.92% of negatively coded propositions, substantially exceeding the other dimensions. Price, commercialisation, and visitor pressure accounted for 32.47%, transport and internal routes for 16.49%, and staff service and cultural interpretation for 12.93%. Natural and ecological landscapes accounted for 22.36%, mainly involving unfavourable weather, sensory discomfort, and landscape experiences below expectations. Negatively coded propositions related to built heritage and ethnic culture accounted for only 3.27% and 2.45%, respectively. Overall, positively coded propositions more often concerned natural landscapes and local spatial character, whereas negatively coded propositions more often concerned issues in the visiting process, such as commercial pressure, crowding and order, transport organisation, and service management.

Table 2. Hierarchical coding of positive affective factors.

First-Level Coding (Frequency)	Secondary Coding	Tertiary Coding
BH1-P1 Distinctive Bai architectural character (n = 350)	BH1 Architectural character and craftsmanship n = 1699 | 11.57%	Dimension A Built heritage and settlement space n = 2962 20.17%
BH1-P2 Refined craftsmanship and decorative detail (n = 216)		
BH1-P3 Attractive and harmonious building aesthetics (n = 1133)		
BH2-P1 Historic streets and settlements create a distinctive atmosphere (n = 679)	BH2 Settlement, street and landmark spaces n = 1125 | 7.66%	
BH2-P2 Landmark, religious and garden spaces are impressive (n = 444)		
BH2-P3 Spatial composition is coherent and distinctive (n = 2)		
BH3-P1 Historic fabric and relics are well preserved (n = 119)	BH3 Authenticity and conservation n = 138 | 0.94%	
BH3-P2 Authenticity and historical age are perceptible (n = 15)		
BH3-P3 Restoration and adaptive reuse are positively perceived (n = 4)		
NL1-P1 Open views and viewpoints support photography (n = 158)	NL1 Mountain–lake scenery and viewing n = 4816 | 32.80%	Dimension B Natural and ecological landscape n = 6478 44.12%
NL1-P2 The Cangshan–Erhai landscape is grand and distinctive (n = 948)		
NL1-P3 Scenery is beautiful and visually impressive (n = 3710)		
NL2-P1 Water and shoreline environments are clean and clear (n = 236)	NL2 Ecological, waterside and pastoral environment n = 380 | 2.59%	
NL2-P2 Vegetation and pastoral scenery are rich (n = 119)		
NL2-P3 Ecological protection and maintenance are effective (n = 25)		
NL3-P1 Air quality and climate are fresh and comfortable (n = 440)	NL3 Climate, season and sensory atmosphere n = 1282 | 8.73%	
NL3-P2 Sunlight, sky and seasonal phenomena are attractive (n = 404)		
NL3-P3 The atmosphere is tranquil, relaxing and restorative (n = 438)		
EC1-P1 Bai and ethnic identity is distinctive (n = 329)	EC1 Bai identity and local cultural character n = 383 | 2.61%	Dimension C Ethnic culture and living heritage n = 1337 9.11%
EC1-P2 Local culture has rich meaning and depth (n = 39)		
EC1-P3 Local cultural character is attractive and memorable (n = 15)		
EC2-P1 Historical narratives have depth and continuity (n = 352)	EC2 History, religion and cultural narratives n = 522 | 3.56%	
EC2-P2 Religious heritage and spiritual settings are positively perceived (n = 170)		
EC3-P1 Folk performances and festivals are engaging (n = 339)	EC3 Living heritage, performance and local life n = 432 | 2.94%	
EC3-P2 Craft and participatory heritage experiences are appealing (n = 49)		
EC3-P3 Everyday local life feels authentic (n = 44)		

Table 2. *Cont.*

First-Level Coding (Frequency)	Secondary Coding	Tertiary Coding
SA1-P1 Staff are warm, patient and attentive (n = 424)	SA1 Staff service and interpretation n = 1125 | 7.66%	Dimension D Tourism services and accessibility n = 3905 26.60%
SA1-P2 Interpretation is professional, clear and informative (n = 353)		
SA1-P3 Service is responsible and efficient (n = 348)		
SA2-P1 Public areas and facilities are clean and hygienic (n = 211)	SA2 Facilities, hygiene and safety n = 334 | 2.27%	
SA2-P2 Facilities are complete, convenient or well designed (n = 116)		
SA2-P3 The visitor environment feels safe and comfortable (n = 7)		
SA3-P1 External access, public transport and parking are convenient (n = 381)	SA3 Access and internal mobility n = 1050 | 7.15%	
SA3-P2 Cable cars, shuttles and cruises improve mobility (n = 603)		
SA3-P3 Walking, cycling and route organisation are pleasant (n = 66)		
SA4-P1 Ticket purchase and collection are convenient (n = 208)	SA4 Ticketing, opening and visitor information n = 218 | 1.48%	
SA4-P2 Wayfinding and visitor information are clear (n = 2)		
SA4-P3 Opening and admission arrangements are favourable (n = 8)		
SA5-P1 Food and local dishes are tasty and varied (n = 108)	SA5 Food, accommodation and hospitality n = 307 | 2.09%	
SA5-P2 Hotels, guesthouses and rooms are comfortable (n = 199)		
SA6-P1 Prices are reasonable, and value for money is high (n = 811)	SA6 Price, commercialisation and visitor pressure n = 871 | 5.93%	
SA6-P2 Commercial vitality and amenities are viewed positively (n = 9)		
SA6-P3 Crowds, queues and visitor order are manageable (n = 51)		

Table 3. Hierarchical coding of negative affective factors.

First-Level Coding (Frequency)	Secondary Coding	Tertiary Coding
BH1-N2 Damaged or poorly maintained architectural details (n = 3)	BH1 Architectural character and craftsmanship n = 3 | 0.22%	Dimension A Built heritage and settlement space n = 44 3.27%
BH2-N1 Street or settlement layout is monotonous or confusing (n = 2)	BH2 Settlement, street and landmark spaces n = 38 | 2.82%	
BH2-N2 Landmark or garden spaces underperform expectations (n = 29)		
BH2-N3 Historic settlement atmosphere is weakened (n = 7)		
BH3-N1 Over-restoration or reconstruction weakens authenticity (n = 1)	BH3 Authenticity and conservation n = 3 | 0.22%	
BH3-N2 Relics are damaged or insufficiently protected (n = 1)		
BH3-N3 Historical authenticity is insufficient (n = 1)		
NL1-N1 Scenery is ordinary or below expectations (n = 41)	NL1 Mountain–lake scenery and viewing n = 116 | 8.62%	Dimension B Natural and ecological landscape n = 301 22.36%
NL1-N2 Views are obstructed or difficult to experience (n = 68)		
NL1-N3 Overall mountain–lake experience is disappointing (n = 7)		
NL2-N1 Water quality or ecological conditions are polluted (n = 18)	NL2 Ecological, waterside and pastoral environment n = 18 | 1.34%	
NL3-N1 Unfavourable or unstable weather disrupts sightseeing (n = 103)	NL3 Climate, season and sensory atmosphere n = 167 | 12.41%	
NL3-N2 Cold, heat, or altitude causes physical discomfort (n = 46)		
NL3-N3 Air, noise, or other sensory discomfort weakens the atmosphere (n = 18)		
EC2-N1 Historical interpretation is insufficient or difficult to understand (n = 2)	EC2 History, religion and cultural narratives n = 2 | 0.15%	Dimension C Ethnic culture and living heritage n = 33 2.45%
EC3-N1 Performances are repetitive, noisy or of poor quality (n = 29)	EC3 Living heritage, performance and local life n = 31 | 2.30%	
EC3-N3 Everyday-life experience is disappointing (n = 2)		

Table 3. *Cont.*

First-Level Coding (Frequency)	Secondary Coding	Tertiary Coding
SA1-N1 Staff attitude is rude, cold, or impatient (n = 65)	SA1 Staff service and interpretation n = 174 | 12.93%	Dimension D Tourism services and accessibility n = 968 71.92%
SA1-N2 Interpretation is inadequate, misleading or sales-oriented (n = 21)		
SA1-N3 Service is disorganised or irresponsible (n = 88)		
SA2-N1 Public areas or toilets are dirty (n = 6)	SA2 Facilities, hygiene and safety n = 58 | 4.31%	
SA2-N2 Facilities are insufficient, outdated or poorly maintained (n = 40)		
SA2-N3 Safety or comfort conditions are inadequate (n = 12)		
SA3-N1 Access, taxi use or parking is difficult (n = 147)	SA3 Access and internal mobility n = 222 | 16.49%	
SA3-N2 Cable-car or shuttle capacity causes delay (n = 60)		
SA3-N3 Routes are tiring, unsafe, confusing or time-consuming (n = 15)		
SA4-N1 Ticket purchase, collection or checking is troublesome (n = 25)	SA4 Ticketing, opening and visitor information n = 59 | 4.38%	
SA4-N2 Signs or visitor information are unclear (n = 12)		
SA4-N3 Opening or admission arrangements are inconsistent (n = 22)		
SA5-N1 Food quality, variety or hygiene is inadequate (n = 1)	SA5 Food, accommodation and hospitality n = 18 | 1.34%	
SA5-N2 Accommodation is uncomfortable, basic or poorly maintained (n = 17)		
SA6-N1 Prices, tickets or additional charges are excessive (n = 108)	SA6 Price, commercialisation and visitor pressure n = 437 | 32.47%	
SA6-N2 Commercialisation and homogenisation are excessive (n = 114)		
SA6-N3 Crowding, queues or disorder reduce the experience (n = 215)		

To test the reliability of affective identification and thematic coding, disproportionate stratified random sampling was conducted by affective polarity and first-level theme. In total, 1200 evaluative propositions were sampled for manual validation, with additional samples from the less frequent negative affect and low-frequency second-level themes. Two coders independently completed the annotations. Agreement for affective polarity, affective intensity, first-level themes, and second-level themes was assessed using Cohen's kappa and weighted kappa [51,52]. The results were Cohen's kappa = 0.89 for affective polarity, weighted kappa = 0.88 for affective intensity, kappa = 0.87 for first-level themes, and kappa = 0.81 for second-level themes. Macro-F1 between automated coding and manual-consensus coding was 0.87 for affective identification and 0.82 for thematic identification [53].

3.2.2. Image-Affect Differences Among Popular Attractions

Based on the popularity ranking in Ctrip's attraction list at the time of data collection, the five highest-ranked attractions were selected for descriptive comparison (Figure 6). This selection illustrates differences in resource type and review structure and is not statistically representative of the prefecture as a whole.

(1) Zhangjia Garden

'Garden-architecture-Bai-culture' formed the main image axis, while 'architecture-Bai-Bai vernacular dwellings' was the strongest co-occurrence, highlighting the combination of Bai vernacular dwellings, courtyards, and garden aesthetics. Positive, neutral, and negative terms accounted for 79.17%, 18.89%, and 1.94%, respectively, and medium intensity accounted for 62.30% of positive terms. These results show that architecture-culture terms were highly concentrated for this attraction and that positive expressions accounted for a relatively high proportion.

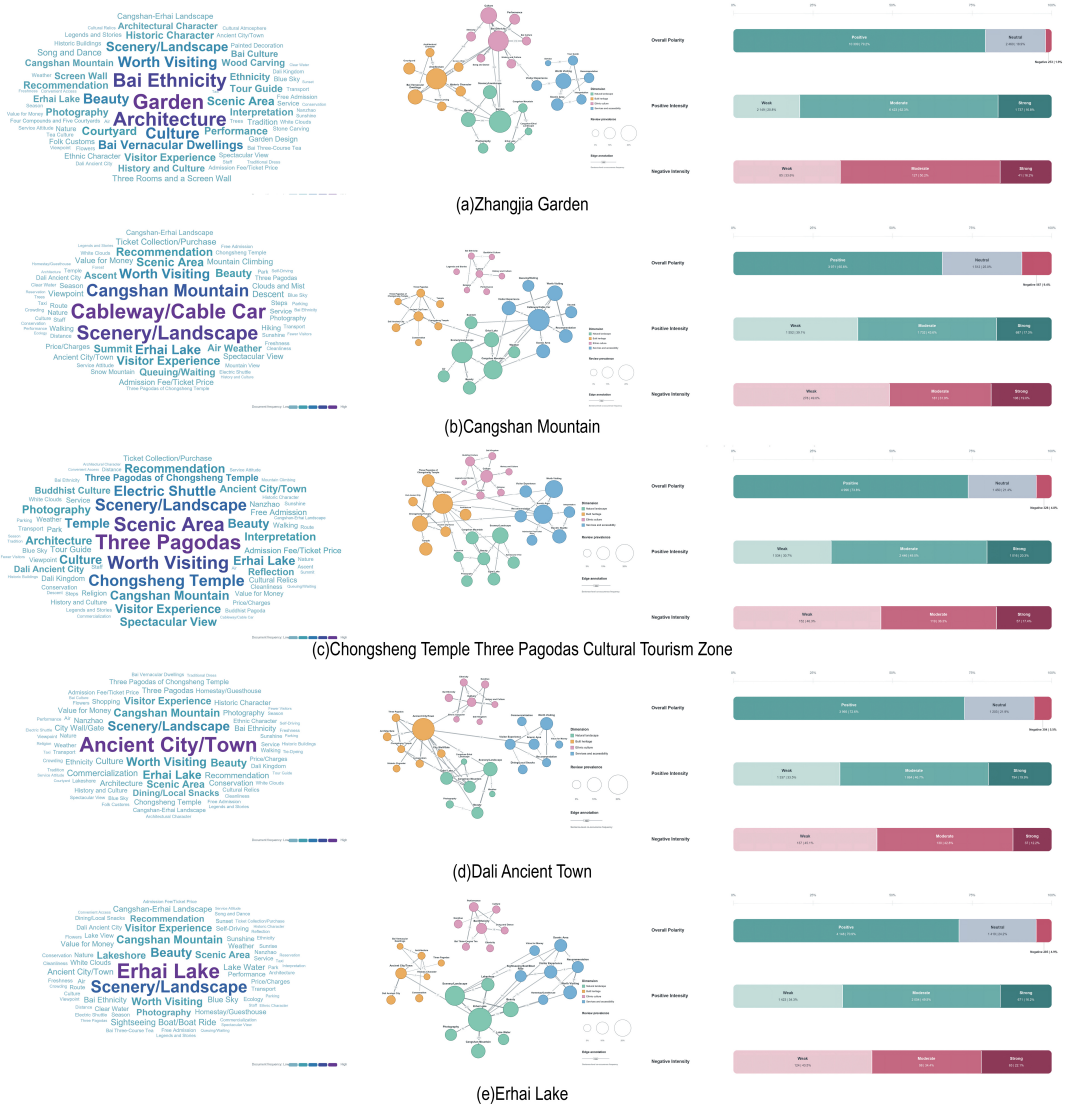

Figure 6. Image-affect differences among the top five attractions.

(2) Cangshan Mountain

Cangshan Mountain showed a dual-core structure of natural landscapes and services and accessibility. 'Cable car/gondola' had the highest frequency and was connected with 'Cangshan Mountain', 'scenery', 'ascending the mountain', and 'queueing', showing that weather, physical exertion, and waiting appeared together in reviews of this attraction. Positive, neutral, and negative terms accounted for 65.64%, 24.99%, and 9.37%, respectively. Low- and medium-intensity terms accounted for 39.08% and 43.62% of positive terms, respectively, and the distribution of textual valence was more dispersed than for the other popular attractions.

(3) Chongsheng Temple Three Pagodas Cultural Tourism Area

Its image centred on the heritage core of the 'Three Pagodas-Chongsheng Temple-temple' and was connected with service terms such as 'scenic area', 'worth visiting', 'battery-powered shuttle', and 'interpretation', reflecting the juxtaposition of historic landmarks, religious culture, and visiting services. Positive, neutral, and negative terms accounted for 73.75%, 21.41%, and 4.84%, respectively. Medium intensity accounted for 48.96% and high intensity for 20.34% of positive terms, indicating that historic landmarks and visual perceptions were prominent in positive expressions.

(4) Dali Ancient City

'Ancient city/old town' was the core image and extended towards 'Cangshan Mountain–Erhai Lake-scenery' and 'history–culture', while food and commercialisation terms were also present. Positive, neutral, and negative terms accounted for 72.61%, 21.86%, and 5.53%, respectively. Medium intensity accounted for 46.66% of positive terms, and the combined share of low- and medium-intensity negative terms was 87.83%. Positive expressions therefore predominated in the reviews, alongside negative content related to commercialisation.

(5) Erhai Lake

Erhai Lake formed a distinct natural-landscape image. 'Erhai Lake-scenery-beautiful-Cangshan Mountain–lakeshore' formed the semantic axis, while terms related to photography and cruises extended the range of leisure activities. Positive, neutral, and negative terms accounted for 70.88%, 24.25%, and 4.87%, respectively, and medium intensity accounted for 49.52% of positive terms. Negative terms accounted for a small proportion, of which 22.11% were high-intensity terms, indicating a comparatively dispersed distribution of lexicon intensity among the limited negative expressions.

Overall, the five popular attractions exhibited different combinations of image terms and textual valence. Architecture-culture terms were most concentrated at Zhangjia Garden. Cangshan Mountain combined many natural-landscape and accessibility terms and had a more dispersed valence distribution. The Three Pagodas were centred on heritage-landmark and religious-culture terms. Dali Ancient City juxtaposed historical-cultural and commercialisation expressions, whereas Erhai Lake was dominated by terms describing natural aesthetics. This comparison provides descriptive evidence of place-specific differences and is not used to infer their formation mechanisms.

3.3. Attention-Affect Spatial Model

3.3.1. Spatial Distribution

Tourist-review attention and textual valence in Dali Prefecture both showed clear spatial heterogeneity (Figure 7). High- and medium-attention texts were concentrated around Erhai Lake, the prefectural tourism core, and the southeastern tourism-connection area, forming a distribution centred on Dali Ancient City, Cangshan Mountain, and Erhai Lake and extending outwards along the main transport corridors. Low-attention texts were more widely distributed in peripheral counties in the north and west and increased towards the margins of the core tourism area. Attention here indicates only the degree to which a review focuses on the attraction concerned; it is not equivalent to visitor volume, prominence, or market importance.

The spatial pattern of textual valence did not fully overlap with attention. In addition to the Erhai tourism core, high-valence texts were prominent in some western and southwestern counties, whereas medium- and low-valence texts were relatively concentrated in the northwest and in some areas east of Erhai Lake. Each subfigure represents the relative spatial intensity of the corresponding text type rather than mutually exclusive zones. Because this section reports results, possible explanations involving ecological conditions, commercialisation, transport connections, and service provision are considered cautiously in the Discussion with reference to previous literature.

Overall, prefecture-wide reviews showed a mismatch in which textual focus was higher but valence more differentiated in core areas, whereas textual focus was lower but valence locally higher in peripheral areas. This pattern provides a descriptive basis for the subsequent identification of attention-affect quadrant types.

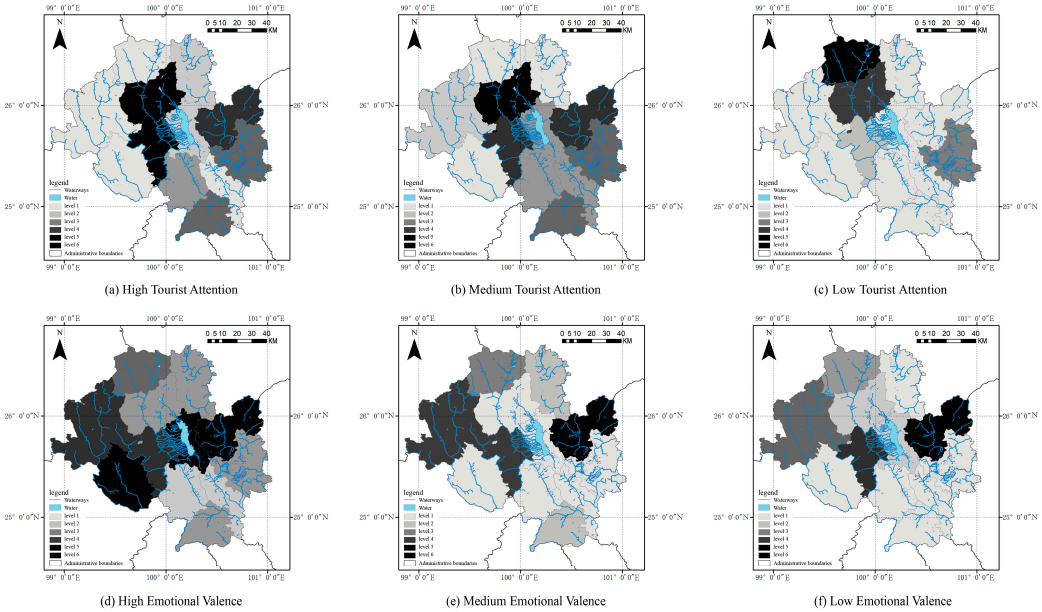

Figure 7. Spatial distribution of attention and affective valence.

3.3.2. Identification of Four-Quadrant Types

Drawing on the cross-classification logic of two-dimensional diagnostic matrices and social media text-based IPA [29,54–56], this study constructed exploratory attention-affect quadrants using the share of high-attention texts and the share of high-valence texts for each attraction. Attention represents textual focus rather than attribute importance in conventional IPA. The affective dimension uses the relative valence of review text as an observable indicator rather than the absolute level of tourist satisfaction or psychological emotion. To avoid a simple 50% cut-off that would ignore the sample distribution, prefecture-wide weighted proportions were used as internal comparative benchmarks, with a high-attention threshold of 43.49% and a high-valence threshold of 88.44%. Of the 228 attractions, five lacked classifiable valence text and were excluded from the quadrants; the remaining 223 were classified.

The high attention-high valence type contained 84 attractions, accounting for 37.67% of classifiable attractions, and was the largest type (Figure 8). Reviews of these attractions both focused comparatively strongly on the attraction concerned and had a share of high-valence text above the prefecture-wide benchmark, indicating the co-occurrence of a clear place image and positive textual expression. Representative places included Zhangjia Garden, Caicun Wetland Park, the Xizhou Bai Ancient Architecture Complex, the Mahavira Hall of Chongsheng Temple, Honglongjing, and Zhusheng Temple at Jizu Mountain, mainly involving cultural presentation, settlement space, and landscape experience. This category is not equivalent to attractions with independently measured high satisfaction.

The high-attention, low-valence type contained 58 attractions, accounting for 26.01% (Figure 9). These attractions had comparatively high textual focus, but their share of high-valence text was below the prefecture-wide benchmark. Representative places included Ideal State, Dali Bedsheet Factory Art District, Huayu Ranch, Fengyangyi Ancient Tea Horse Road, Yujin Bridge, Sideng Street, Wuhua Tower, and Xingjiao Temple in Shaxi. Their lower-valence propositions mainly concerned commercialisation, service facilities, visiting organisation, price, crowding, or heritage authenticity. The result locates textual issues requiring further verification and does not directly demonstrate that these factors caused a decline in experience.

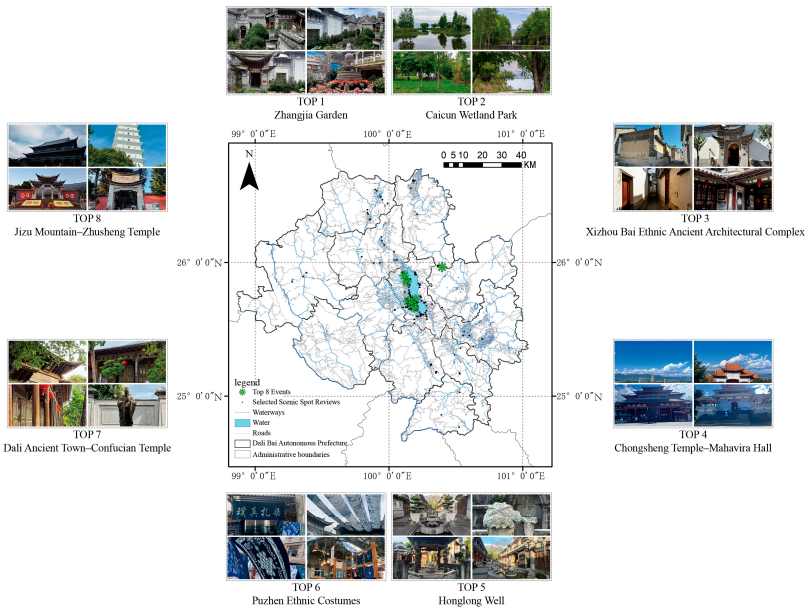

Figure 8. High attention-high valence.

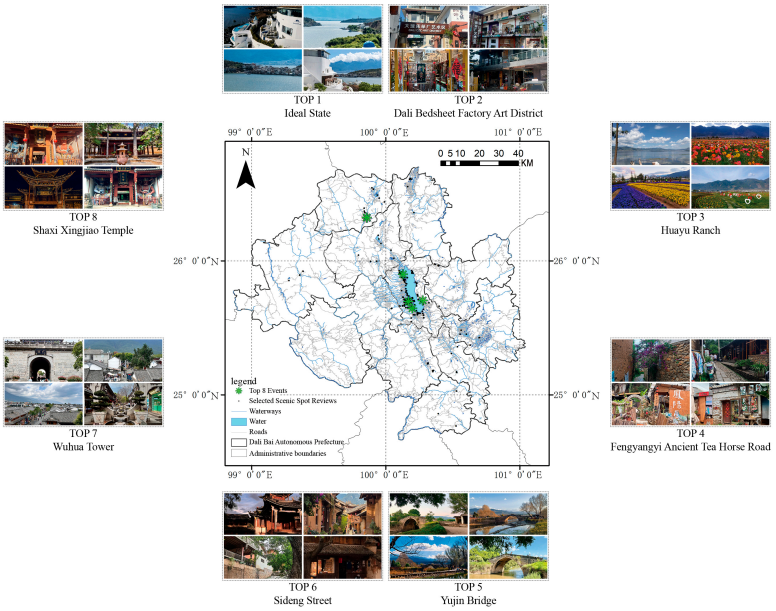

Figure 9. High attention-low valence.

The low attention-high valence type contained 48 attractions, accounting for 21.52% (Figure 10). The share of high-attention text was low for these attractions, while the share of high-valence text was above the prefecture-wide benchmark, indicating the coexistence of limited textual focus and positive valence. Representative places in this category included Shuimushan Cultural Tourism Area, Dajianpang Village, Qinghua Ancient Cave, Yunxiangshan Scenic Area, Jizu Mountain, Zhoucheng Village, and Dali Ocean World. This category suggests candidate samples for subsequent verification of image recognisability and the actual built environment.

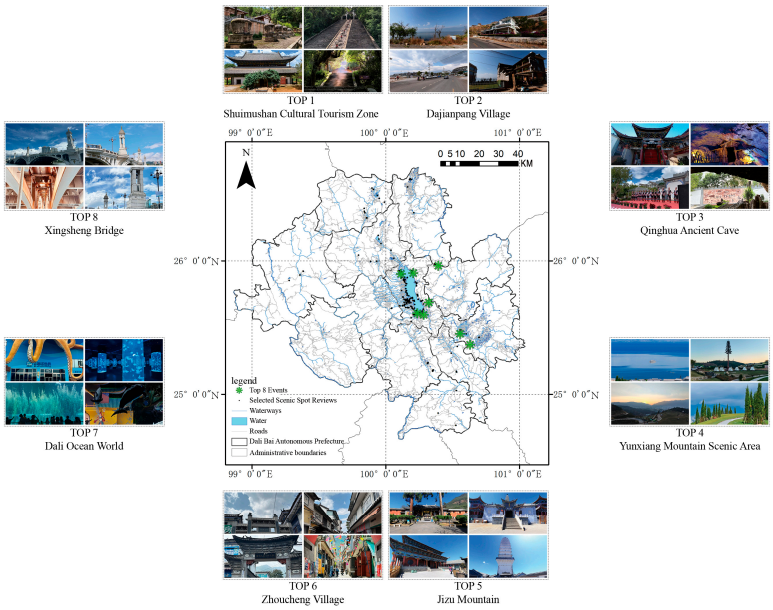

Figure 10. Low attention-high valence.

The low attention-low valence type contained 33 attractions, accounting for 14.80% (Figure 11). Representative places included Qigu Hot Spring, Demi-Gods and Semi-Devils Film City, Erhai Lake cruises, the Erhai sightseeing bus, Yang Liping Grand Theatre, Cangshan Gantong Cableway, and the Xizhou Wheatfield Mini Train. Their textual focus and share of high-valence text were both below the prefecture-wide benchmarks, but this cannot be used directly to judge that these attractions are of poor quality. Specific issues require verification using review content, platform samples, and on-site evidence.

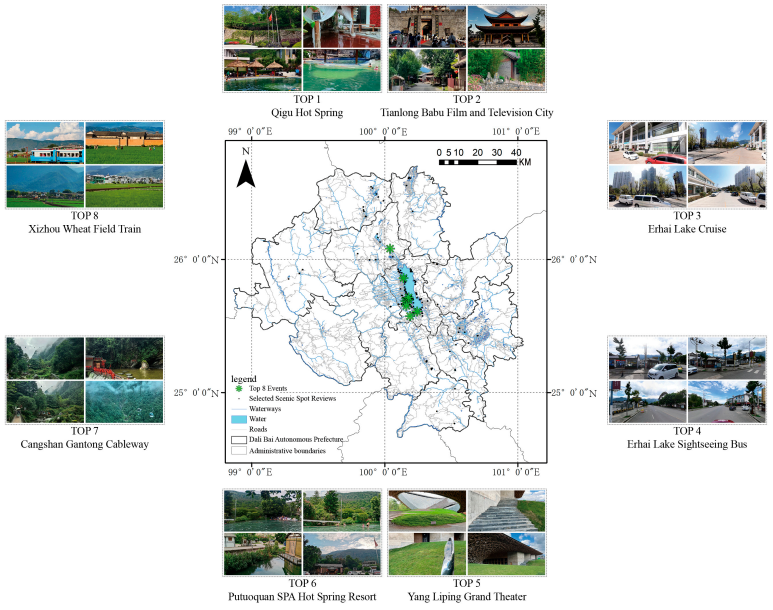

Figure 11. Low attention-low valence.

The attention-affect quadrants combine textual focus with relative positive expression and distinguish states such as high focus with valence below the prefecture-wide benchmark from limited focus with valence above the benchmark. The quadrants serve only as a framework for type screening and subsequent stratified sampling; they are neither a ranking of attraction quality nor a causal diagnosis. Their governance implications are proposed in the Discussion on the basis of textual themes and previous literature.

4. Discussion

4.1. Four-Dimensional Destination-Image Structure and Architecture-Culture Semantic Associations

The results show that Dali's tourism destination image can be organised into four dimensions: natural landscapes, built heritage, ethnic culture, and services and accessibility. Natural mountain–lake scenery has the highest review coverage. Built heritage provides visible local spatial cues and has strong semantic associations with ethnic-cultural terms, while transport, ticketing, services, prices, and crowding primarily represent the visiting process. This result is consistent with the proposition of integrated measurement in big-data TDI research [4] and with findings from studies of rural destinations, traditional villages, and ancient towns that natural, cultural, spatial, and service factors jointly participate in image expression [11,35,57]. The four-dimensional structure organises and compares review content; it does not represent a causal hierarchy from resources to experience.

The semantic network shows high-frequency co-occurrence between terms such as 'Bai culture–architectural character' and 'Bai vernacular dwellings–architectural character'. Tourists' reviews frequently use visible cues, including roofs, screen walls, courtyards, wood carvings, and settlement patterns, to express recognition of Bai culture. Built heritage thus constitutes a spatial representation and semantic connection point for local culture. Research in Xizhou Ancient Town similarly finds that Bai courtyards, traditional streets and lanes, and evaluations of architecture and ethnic culture jointly enter tourists' perceptions of place [14]. The co-occurrence network in this study supports judgements about association strength but does not test mediation effects or pathways of cultural-identity formation. These interpretations can be compared with research on built heritage UGC [29], intangible heritage and sense of place [30], and heritage spatial perception and place identity [58].

These associations can be understood at three scales: courtyard, construction, and settlement. The courtyard scale concerns types such as the 'three rooms and one screen wall' and 'four compounds and five courtyards' and the sequence from lanes to courtyards. The construction scale concerns timber structures, screen walls, white-wall decoration, and associated materials and crafts. The settlement scale concerns street and lane enclosure, street-wall continuity, nodes, and view corridors. Research on Bai courtyards indicates continuing relationships among courtyard form, modes of inhabitation, sociocultural practices, and environmental adaptation [13]. Building conservation review should therefore extend from individual facades to courtyard layouts, street and lane scales, and landmark sightlines; specific control indicators must be determined through on-site survey and statutory conservation planning.

Conservation authenticity accounted for only 5.15% of built heritage instances, and participatory intangible heritage experience for only 2.92% of ethnic-cultural instances, indicating that visual symbols were prominent while conservation processes and participatory experiences remained comparatively implicit in the reviews. This pattern may relate to tourists' knowledge, length of stay, depth of interpretation, platform-specific expression, or the detection boundaries of the lexicon. The current data cannot distinguish among these explanations and do not support judgements about the condition of heritage conservation or the importance tourists assign to authenticity. The relationships among cultural transmission, authenticity, nostalgia, and experience sharing are themselves multidimensional [15,59–61]. Subsequent research should therefore use interviews, on-site records, and multiplatform content to test explanations involving limited cognition, changes in consumption patterns, and platform-specific expression. Third-level categories with frequencies of 1–4 in Tables 2 and 3 are reported only as sparse signals and are not used to generalise stable patterns.

4.2. Asymmetry in the Content Structure of Textual Valence: Resource Representation and Process Friction

Textual valence in tourist reviews was predominantly positive, but the content structures of positively and negatively coded propositions were asymmetric. Natural and ecological landscapes accounted for 44.12% of positively coded propositions, with mountain–lake scenery and viewing experience accounting for 32.80%. Built heritage, local culture, and distinctive spaces also frequently co-occurred with positive expressions. This finding is broadly consistent with research on associations between built environments and positive emotion in traditional villages [62], cross-cultural studies of park-environment perception [63], and research on landscape attributes and positive emotion [64]. In contrast, negatively coded propositions in the Dali corpus were highly concentrated in services and accessibility, while the salience of authenticity and participatory heritage experience was low, indicating contextual differences in the content composition of reviews at a complex heritage destination.

Services and accessibility accounted for 71.92% of negatively coded propositions, with price, commercialisation, and visitor pressure accounting for 32.47%, transport and internal routes for 16.49%, and staff service and cultural interpretation for 12.93%. Terms describing natural and cultural resources more often co-occurred with visit appeal and positive expressions, whereas transport connections, capacity, queueing, price transparency, wayfinding, and service quality more often co-occurred with negative expressions. This distribution represents content associations in UGC and does not establish that these conditions caused changes in satisfaction. Research on attraction satisfaction, crowding perception, tourism carrying capacity, maintenance of monumental buildings, and heritage commercialisation [42,65–69] provides external reference points for interpreting these associations.

The analysis can therefore directly identify frequent negative issues and the types of places in which they occur. Measures concerning holiday capacity management, cable-car and shuttle scheduling, parking and pedestrian systems, price-information disclosure, cultural interpretation, and public health facilities are directions for further examination derived in conjunction with previous research. Their applicability must still be assessed against on-site capacity, operational data, stakeholder interviews, and local policy conditions.

4.3. Context Dependence and Experiential Differences Among Tourism Places

Comparison of popular attractions shows that, although overall reviews were predominantly positive in valence, the combinations of image terms and process evaluations differed among places. Terms describing Bai architecture, courtyards, gardens, and cultural presentation were highly concentrated at Zhangjia Garden. The Chongsheng Temple Three Pagodas Cultural Tourism Area was centred on historic landmarks, religious architecture, and visual perception, while also containing service terms relating to battery-powered shuttles, interpretation, and visiting organisation. This juxtaposition of heritage symbols, spatial experience, and service processes can be compared with findings from built heritage review research [29] and studies of spatial perception and tourism image in ancient towns [35].

Reviews of Cangshan Mountain simultaneously concerned weather, physical exertion, cable-car capacity, waiting time, and ascent-descent organisation. Dali Ancient City juxtaposed historical-cultural atmosphere with commercialisation expressions. Erhai Lake had comparatively moderate overall valence, although local waterside conditions, cruise services, and issues of order also appeared in the reviews. The online-review study listed as reference [70] indicates that sense of place can be represented jointly through spatial elements and activity experiences, while research on Dali attractions also identifies spatial

differences in accessibility and tourism development levels [43]. These place-specific differences show that natural conditions, architectural space, facility systems, and operational management appear in different combinations across review contexts.

4.4. Interpretive Boundaries and Governance Implications of the Four-Quadrant Classification

The attention-affect quadrants distinguish review focus from relatively positive expression. High attention-high valence attractions may prioritise maintaining spatial quality and monitoring capacity. High attention-low valence attractions may place price, transport, queues, facility maintenance, service quality, and commercialisation on an on-site verification checklist. This typological governance draws on the diagnostic logic of social media IPA [56], but attention in this study represents textual focus rather than attribute importance, and valence is not a satisfaction scale. The quadrants therefore establish an order for verification rather than demonstrate the effects of intervention.

For low attention-high valence attractions, subsequent work may examine whether their distinctive features have yet to form stable and sufficiently extensive expressions in reviews and, after assessing reception capacity, consider narrative refinement, sign optimisation, and route connections. Low attention-low valence attractions may first be examined for product renewal, facilities, transport connections, and experiential homogenisation. This pathway is consistent with the zoned and graded intervention logic proposed in social media research on traditional-village images [11], but specific measures must be determined in conjunction with on-site evidence and stakeholder needs.

The four-quadrant classification is more suitable as a screening tool for on-site verification and resource allocation than as a ranking of attraction quality. Its thresholds derive from prefecture-wide weighted proportions in this dataset and must be re-estimated when transferred to other destinations or platforms. Subsequent research could use stratified sampling to select representative places from each category, record building conservation status, view corridors, commercial interfaces, facility capacity, wayfinding systems, queue order, and forms of cultural participation in a standardised manner, and compare classification stability under different thresholds. Research on the correspondence between social media and survey data [27,28], the integration of big and small data in historic districts [24], participatory observation [35], and comparisons between online image and reality [36] all indicate that on-site and multi-source evidence can be used to verify the interpretive scope of online classifications.

4.5. Research Limitations

First, this study uses only Ctrip reviews, and the available data cannot establish the demographic composition or travel patterns of platform users. The platform's ticketing and itinerary-transaction context may increase the salience of transport, ticketing, and service issues, whereas visual aesthetics, lifestyles, food, or night-time activities may receive different weights on other platforms. Previous research shows that spatial representations of tourism across media sources may overlap only partially [25] and that social media and survey results may exhibit systematic differences [27,28]. The conclusions are therefore limited to the Ctrip corpus. Subsequent work should assess their generalisability through cross-platform sampling, topic alignment, and comparison of quadrant classifications.

Second, the reviews cover the period from 22 January 2019 to 26 July 2026, spanning the pre-pandemic period, travel restrictions in 2020–2022, and tourism recovery after 2023. Research based on Ctrip data shows that public health events and policy phases can alter online-review behaviour and emotional expression [31]. This study uses the pooled corpus to describe overall image and valence and does not conduct phased robustness tests using the same attraction sample; it therefore makes no judgement about the stability of patterns

before and after 2023. Subsequent work should stratify the data by period and season and compare thematic shares, net valence, and movements among the quadrants.

Third, the combination of lexicon matching, negation rules, and manual review may still miss irony, sarcasm, ambiguity, context-dependent meanings, and culturally specific expressions. Positive textual valence indicates only the relative use of positive terms in reviews and cannot substitute for measures of satisfaction or experience quality; third-level categories with frequencies below five can likewise serve only as sparse signals. The quadrant thresholds are dataset-specific, and attractions near a boundary may be sensitive to alternative thresholds.

In addition, this study did not conduct systematic on-site validation with standardised place selection, survey timing, observation duration, and observation protocols. Figures 8–11 display representative places rather than results of on-site validation. Subsequent research should apply stratified sampling across the four quadrants and establish standardised records to test the correspondence between online expression and building conservation, street and lane morphology, view corridors, facility capacity, and service order.

5. Conclusions

Using Dali Bai Autonomous Prefecture in Yunnan as the study area and 32,992 valid Ctrip attraction reviews, this study integrated high-frequency term identification, second-order theoretical coding, a semantic co-occurrence network, and affective analysis to construct a tourism destination image-affect framework and identify, at the attraction scale, differences in the combinations of review-content focus and affective valence.

Three findings emerged. First, Dali's cognitive image as a tourism destination exhibits a four-dimensional relational structure in the review corpus, comprising natural landscapes, built heritage, ethnic culture, and services and accessibility. Cangshan–Erhai forms the natural image with the broadest coverage, while Bai vernacular dwellings, ancient cities and towns, and religious architecture are important spatial representations of local culture. Co-occurrence between architecture- and culture-related terms supports judgements of semantic association but does not constitute a test of mediation or causal mechanisms. Second, textual valence in the reviews is predominantly positive: positive, neutral, and negative affective terms account for 71.87%, 22.65%, and 5.48%, respectively. Positively coded propositions mainly concern natural and ecological landscapes, whereas 71.92% of negatively coded propositions concern services and accessibility, particularly prices and commercialisation, crowding and order, transport routes, and staff service. This pattern reveals an asymmetry in the content composition of positive resource-related expressions and negative process-related issues. Third, using a high-attention share of 43.49% and a high-valence share of 88.44% as internal benchmarks, the 223 classifiable attractions are divided into high attention-high valence, high attention-low valence, low attention-high valence, and low attention-low valence types, accounting for 37.67%, 26.01%, 21.52%, and 14.80%, respectively. These types indicate only relative textual focus and valence and are not equivalent to absolute levels of satisfaction or attraction quality.

This study incorporates tourists' online expressions concerning natural environments, architectural spaces, ethnic culture, and the visiting process into a unified framework and provides an exploratory method for identifying image advantages and process-related issues at tourism places. Quality maintenance, service verification, distinctive-feature communication, and facility diagnosis derived from the four quadrants provide management leads for subsequent verification. Because the study uses only Ctrip reviews, covers 2019–2026, and does not include temporal stratification, cross-platform comparison, or systematic on-site validation, its conclusions are limited to this dataset and its textual

expressions. Future research can combine stratified on-site verification, multiplatform data, temporal phases, alternative thresholds, and built environment indicators to further test the stability of the types and their spatial interpretation.

Author Contributions: Conceptualization, Q.H. and R.Z.; methodology, Q.H.; software, Q.H.; validation, Q.H., R.Z. and J.L.; formal analysis, Q.H.; investigation, Q.H.; resources, R.Z.; data curation, Q.H.; writing—original draft preparation, Q.H.; writing—review and editing, R.Z.; visualization, Q.H.; supervision, R.Z.; project administration, R.Z.; funding acquisition, R.Z. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Key Project of the Research Base for Forging a Strong Sense of Community for the Chinese Nation at Huazhong University of Science and Technology, grant number 2025ZLKF011; the Fundamental Research Funds for the Central Universities, grant number 15882026XCZX008; and the National Natural Science Foundation of China, grant number 52078226.

Data Availability Statement: The original contributions presented in this study are included in the article. Further inquiries can be directed to the corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Appendix A

Table A1. Top 100 terms by frequency.

Rank	Normalised Term	POS	Raw Count	Frequency Per 10,000 Tokens	Review Count	Review Coverage	95% CI Lower	95% CI Upper	Equal-Weight POI Coverage
1	scenery/landscape	noun phrase	8980	205.70	7973	24.17%	23.71%	24.63%	22.19%
2	Erhai Lake	proper noun	6711	153.73	4614	13.99%	13.62%	14.36%	14.50%
3	architectural character	noun phrase	5046	115.59	3446	10.44%	10.12%	10.78%	7.80%
4	Bai culture	noun phrase	4643	106.36	2888	8.75%	8.45%	9.06%	6.67%
5	Cangshan Mountain	proper noun	3795	86.93	2820	8.55%	8.25%	8.85%	7.45%
6	cableway/cable car	noun phrase	4303	98.57	2489	7.54%	7.26%	7.83%	3.31%
7	ancient city/town	noun phrase	2916	66.80	1926	5.84%	5.59%	6.10%	8.04%
8	history and culture	noun phrase	2277	52.16	1804	5.47%	5.23%	5.72%	4.84%
9	Dali Ancient City	proper noun	2266	51.91	1764	5.35%	5.11%	5.59%	6.90%
10	value for money	noun	1426	32.67	1344	4.07%	3.87%	4.29%	4.46%
11	admission/ticket price	noun phrase	1453	33.28	1306	3.96%	3.75%	4.17%	4.74%
12	Bai dwellings	noun phrase	1612	36.93	1229	3.73%	3.53%	3.93%	2.87%
13	Three Pagodas	noun	1624	37.20	1147	3.48%	3.28%	3.68%	1.48%
14	service	noun/verb	1086	24.88	993	3.01%	2.83%	3.20%	2.29%
15	interpretation	verb/noun	1070	24.51	926	2.81%	2.63%	2.99%	1.32%
16	performance	noun	1031	23.62	888	2.69%	2.52%	2.87%	1.80%
17	Cangshan–Erhai	proper noun	825	18.90	804	2.44%	2.28%	2.61%	2.06%
18	weather	noun	860	19.70	787	2.39%	2.23%	2.56%	1.34%
19	tour guide	noun	840	19.24	737	2.23%	2.08%	2.40%	0.87%
20	queue/wait	verb	794	18.19	619	1.88%	1.74%	2.03%	1.24%
21	take a boat tour/boat ride	verb	699	16.01	604	1.83%	1.69%	1.98%	1.71%
22	air	noun	573	13.13	565	1.71%	1.58%	1.86%	1.76%
23	Nanzhao	proper noun	700	16.03	564	1.71%	1.58%	1.86%	2.24%
24	electric shuttle	noun	634	14.52	544	1.65%	1.52%	1.79%	0.92%

Table A1. *Cont.*

Rank	Normalised Term	POS	Raw Count	Frequency Per 10,000 Tokens	Review Count	Review Coverage	95% CI Lower	95% CI Upper	Equal-Weight POI Coverage
25	staff members	noun phrase	645	14.77	537	1.63%	1.50%	1.77%	1.42%
26	summit	noun	623	14.27	537	1.63%	1.50%	1.77%	1.05%
27	price	noun	571	13.08	537	1.63%	1.50%	1.77%	2.01%
28	park	noun	726	16.63	526	1.59%	1.46%	1.74%	3.95%
29	Three Pagodas of Chongsheng Temple	proper noun	595	13.63	521	1.58%	1.45%	1.72%	0.70%
30	ascend	verb	624	14.29	514	1.56%	1.43%	1.70%	0.96%
31	crowded/busy	adjective	521	11.93	498	1.51%	1.38%	1.65%	1.37%
32	commercialisation	noun/verb	514	11.77	486	1.47%	1.35%	1.61%	1.71%
33	homestay/guesthouse	noun phrase	613	14.04	480	1.45%	1.33%	1.59%	2.47%
34	woodcarving	noun	529	12.12	466	1.41%	1.29%	1.55%	0.99%
35	blue sky	noun	467	10.70	459	1.39%	1.27%	1.52%	1.56%
36	temple	noun	538	12.32	457	1.39%	1.26%	1.52%	0.92%
37	transport accessibility	noun phrase	510	11.68	453	1.37%	1.25%	1.50%	2.17%
38	Chongsheng Temple	noun	576	13.19	445	1.35%	1.23%	1.48%	0.51%
39	clean/tidy	adjective	496	11.36	422	1.28%	1.16%	1.41%	1.26%
40	white clouds	noun	432	9.90	421	1.28%	1.16%	1.40%	1.50%
41	walk	verb	443	10.15	401	1.22%	1.10%	1.34%	1.51%
42	quiet	adjective	407	9.32	376	1.14%	1.03%	1.26%	2.27%
43	descend	verb	461	10.56	375	1.14%	1.03%	1.26%	0.68%
44	ethnicity	noun	397	9.09	365	1.11%	1.00%	1.23%	1.17%
45	song and dance	noun	371	8.50	357	1.08%	0.98%	1.20%	0.46%
46	Buddhism	noun	413	9.46	351	1.06%	0.96%	1.18%	0.52%
47	sunshine	noun	365	8.36	341	1.03%	0.93%	1.15%	1.68%
48	courtyard	noun	402	9.21	330	1.00%	0.90%	1.11%	0.65%
49	park	verb	409	9.37	325	0.99%	0.88%	1.10%	1.45%
50	Dali Kingdom	proper noun	381	8.73	321	0.97%	0.87%	1.08%	0.92%
51	distance	noun	332	7.61	312	0.95%	0.85%	1.06%	1.75%
52	fees	noun	362	8.29	309	0.94%	0.84%	1.05%	1.36%
53	Xizhou Ancient Town	proper noun	385	8.82	307	0.93%	0.83%	1.04%	1.23%
54	cycle	verb	399	9.14	302	0.92%	0.82%	1.02%	2.34%
55	sightseeing shuttle	noun	367	8.41	301	0.91%	0.82%	1.02%	0.90%
56	clear	adjective	298	6.83	295	0.89%	0.80%	1.00%	0.71%
57	fresh	adjective	298	6.83	295	0.89%	0.80%	1.00%	0.86%
58	Three Houses and One Screen Wall	noun phrase	306	7.01	292	0.89%	0.79%	0.99%	0.65%
59	Four Houses and Five Courtyards	noun phrase	302	6.92	288	0.87%	0.78%	0.98%	0.81%
60	reflection	noun	355	8.13	287	0.87%	0.78%	0.98%	0.82%
61	show	noun	315	7.22	280	0.85%	0.76%	0.95%	0.78%
62	ancient	adjective	307	7.03	280	0.85%	0.76%	0.95%	0.80%
63	public facilities	noun phrase	299	6.85	278	0.84%	0.75%	0.95%	1.36%
64	flowers	noun	345	7.90	277	0.84%	0.75%	0.94%	1.25%
65	sunset/evening glow	noun phrase	318	7.28	275	0.83%	0.74%	0.94%	1.46%
66	Shuanglang Ancient Town	proper noun	318	7.28	271	0.82%	0.73%	0.92%	0.57%

Table A1. *Cont.*

Rank	Normalised Term	POS	Raw Count	Frequency Per 10,000 Tokens	Review Count	Review Coverage	95% CI Lower	95% CI Upper	Equal-Weight POI Coverage
67	staff attitude	noun phrase	272	6.23	267	0.81%	0.72%	0.91%	0.53%
68	cultural atmosphere	noun phrase	280	6.41	264	0.80%	0.71%	0.90%	0.56%
69	hike	verb	321	7.35	261	0.79%	0.70%	0.89%	0.61%
70	tranquil	adjective	294	6.73	261	0.79%	0.70%	0.89%	1.29%
71	screen wall	noun	295	6.76	260	0.79%	0.70%	0.89%	0.84%
72	open	verb	281	6.44	257	0.78%	0.69%	0.88%	1.23%
73	collect tickets	verb	291	6.67	256	0.78%	0.69%	0.88%	0.46%
74	hotel	noun	367	8.41	253	0.77%	0.68%	0.87%	1.15%
75	climb	verb	269	6.16	252	0.76%	0.68%	0.86%	0.51%
76	garden	noun	299	6.85	251	0.76%	0.67%	0.86%	0.88%
77	arrive	verb	289	6.62	247	0.75%	0.66%	0.85%	0.93%
78	Three-Course Tea	noun	262	6.00	244	0.74%	0.65%	0.84%	0.34%
79	conservation	noun	261	5.98	240	0.73%	0.64%	0.83%	0.98%
80	season	noun	255	5.84	240	0.73%	0.64%	0.83%	0.72%
81	folk customs	noun	252	5.77	232	0.70%	0.62%	0.80%	0.66%
82	itinerary	noun	251	5.75	225	0.68%	0.60%	0.78%	0.48%
83	historic buildings	noun	240	5.50	222	0.67%	0.59%	0.77%	1.17%
84	preservation	noun	236	5.41	222	0.67%	0.59%	0.77%	1.29%
85	self-drive	verb	235	5.38	219	0.66%	0.58%	0.76%	0.85%
86	cultural relics	noun	273	6.25	217	0.66%	0.58%	0.75%	1.04%
87	pier	noun	272	6.23	216	0.65%	0.57%	0.75%	1.11%
88	steps	noun	262	6.00	216	0.65%	0.57%	0.75%	0.60%
89	attitude	noun	235	5.38	216	0.65%	0.57%	0.75%	0.65%
90	uncrowded	adjective	219	5.02	216	0.65%	0.57%	0.75%	1.35%
91	ancient times	noun	233	5.34	213	0.65%	0.56%	0.74%	0.53%
92	buy tickets	verb	238	5.45	211	0.64%	0.56%	0.73%	0.43%
93	local snacks	noun	213	4.88	208	0.63%	0.55%	0.72%	1.20%
94	sunrise	noun	243	5.57	200	0.61%	0.53%	0.70%	1.79%
95	ethnic character	noun phrase	204	4.67	199	0.60%	0.53%	0.69%	0.47%
96	monastery	noun	238	5.45	198	0.60%	0.52%	0.69%	0.46%
97	take a taxi	verb	214	4.90	193	0.58%	0.51%	0.67%	0.90%
98	sell tickets	verb	229	5.25	191	0.58%	0.50%	0.67%	0.56%
99	lakeside	noun	205	4.70	188	0.57%	0.49%	0.66%	0.99%
100	island	noun	226	5.18	186	0.56%	0.49%	0.65%	1.20%

References

1. Crompton, J.L. An assessment of the image of Mexico as a vacation destination and the influence of geographical location upon that image. *J. Travel Res.* **1979**, *17*, 18–23. [CrossRef]
2. Gallarza, M.G.; Saura, I.G.; García, H.C. Destination image: Towards a conceptual framework. *Ann. Tour. Res.* **2002**, *29*, 56–78. [CrossRef]
3. Baloglu, S.; McCleary, K.W. A model of destination image formation. *Ann. Tour. Res.* **1999**, *26*, 868–897. [CrossRef]
4. Bui, V.; Alaei, A.R.; Vu, H.Q.; Li, G.; Law, R. Revisiting tourism destination image: A holistic measurement framework using big data. *J. Travel Res.* **2022**, *61*, 1287–1307. [CrossRef]
5. Li, Y.; He, Z.; Li, Y.; Huang, T.; Liu, Z. Keep it real: Assessing destination image congruence and its impact on tourist experience evaluations. *Tour. Manag.* **2023**, *97*, 104736. [CrossRef]
6. Lee, E.; Koo, C. Reframed image congruence: Insights from attractions. *Ann. Tour. Res.* **2026**, *116*, 104064. [CrossRef]

7. Lynch, K. *The Image of the City*; MIT Press: Cambridge, MA, USA, 1960.
8. Tuan, Y.-F. *Space and Place: The Perspective of Experience*; University of Minnesota Press: Minneapolis, MN, USA, 1977.
9. Daniel, T.C. Whither scenic beauty? Visual landscape quality assessment in the 21st century. *Landsc. Urban Plan.* **2001**, *54*, 267–281. [CrossRef]
10. Shao, L.; Ma, P.; Zhou, Z. Research on the impact of landscape planning on visual and spatial perception in historical district tourism: A case study of Laomendong. *Land* **2024**, *13*, 1134. [CrossRef]
11. Zhao, B.; Gao, Z.; Jiao, M.; Weng, R.; Jia, T.; Xu, C.; Wang, X.; Jiang, Y. Rural image perception and spatial optimization pathways based on social media data: A case study of Baishe Village—A traditional village. *Land* **2025**, *14*, 1860. [CrossRef]
12. Yin, J.; Feng, J.; Jia, M. Research on rural tourism environment perception based on grounded theory: A case study of Beishan Village, Zhuhai City, Guangdong Province, China. *Heliyon* **2024**, *10*, e32373. [CrossRef] [PubMed]
13. Li, Z.; Diao, J.; Lu, S.; Tao, C.; Krauth, J. Exploring a sustainable approach to vernacular dwelling spaces with a multiple evidence base method: A case study of the Bai people's courtyard houses in China. *Sustainability* **2022**, *14*, 3856. [CrossRef]
14. Zhou, C.; Mohamed Afla, M.R. Integrating cultural landscape and ecological aesthetics in rural heritage tourism: A case study of Xizhou Ancient Town. *J. Asian Archit. Build. Eng.* **2026**, 1–19. [CrossRef]
15. Park, E.; Choi, B.-K.; Lee, T.J. The role and dimensions of authenticity in heritage tourism. *Tour. Manag.* **2019**, *74*, 99–109. [CrossRef]
16. Marine-Roig, E.; Anton Clavé, S. Tourism analytics with massive user-generated content: A case study of Barcelona. *J. Destin. Mark. Manag.* **2015**, *4*, 162–172. [CrossRef]
17. Lalicic, L.; Marine-Roig, E.; Ferrer-Rosell, B.; Martin-Fuentes, E. Destination image analytics for tourism design: An approach through Airbnb reviews. *Ann. Tour. Res.* **2021**, *86*, 103100. [CrossRef]
18. Marine-Roig, E.; Ferrer-Rosell, B. Measuring the gap between projected and perceived destination images of Catalonia using compositional analysis. *Tour. Manag.* **2018**, *68*, 236–249. [CrossRef]
19. Wang, J.; Li, Y.; Wu, B.; Wang, Y. Tourism destination image based on tourism user generated content on internet. *Tour. Rev.* **2021**, *76*, 125–137. [CrossRef]
20. Lee, J.-S.; Park, S. A cross-cultural anatomy of destination image: An application of mixed-methods of UGC and survey. *Tour. Manag.* **2023**, *98*, 104746. [CrossRef]
21. Guo, X.; Pesonen, J. The role of online travel reviews in evolving tourists' perceived destination image. *Scand. J. Hosp. Tour.* **2022**, *22*, 372–392. [CrossRef]
22. Jiang, Q.; Chan, C.-S.; Eichelberger, S.; Ma, H.; Pikkemaat, B. Sentiment analysis of online destination image of Hong Kong held by mainland Chinese tourists. *Curr. Issues Tour.* **2021**, *24*, 2501–2522. [CrossRef]
23. Choi, C.; Lee, J.; Machado, J.; Kim, G. Big-data-based text mining and social network analysis of landscape response to future environmental change. *Land* **2022**, *11*, 2183. [CrossRef]
24. Chen, J.; Li, P.; Lei, Y.; Zhang, Y.; Lai, C.; Chen, B.; Liu, J.; Schnabel, M.A. Leveraging augmented reality for historic streetscape regeneration decision-making: A big and small data approach with social media and stakeholder participation integration. *Cities* **2025**, *166*, 106214. [CrossRef]
25. Paül i Agustí, D. Characterizing the location of tourist images in cities: Differences in user-generated images (Instagram), official tourist brochures and travel guides. *Ann. Tour. Res.* **2018**, *73*, 103–115. [CrossRef]
26. Mehraliyev, F.; Chan, I.C.C.; Kirilenko, A.P. Sentiment analysis in hospitality and tourism: A thematic and methodological review. *Int. J. Contemp. Hosp. Manag.* **2022**, *34*, 46–77. [CrossRef]
27. Lin, M.S.; Liang, Y.; Xue, J.X.; Pan, B.; Schroeder, A. Destination image through social media analytics and survey method. *Int. J. Contemp. Hosp. Manag.* **2021**, *33*, 2219–2238. [CrossRef]
28. Huai, S.; Liu, S.; Zheng, T.; Van de Voorde, T. Are social media data and survey data consistent in measuring park visitation, park satisfaction, and their influencing factors? A case study in Shanghai. *Urban For. Urban Green.* **2023**, *81*, 127869. [CrossRef]
29. Zang, Z.; Fu, H.; Cheng, J.; Raza, H.; Fang, D. Digital threads of architectural heritage: Navigating tourism destination image through social media reviews and machine learning insights. *J. Asian Archit. Build. Eng.* **2025**, *24*, 4452–4469. [CrossRef]
30. Qiu, Q. Identifying the role of intangible cultural heritage in distinguishing cities: A social media study of heritage, place, and sense in Guangzhou, China. *J. Destin. Mark. Manag.* **2023**, *27*, 100764. [CrossRef]
31. Wang, Y.; Zhang, Z.; Law, R.; Zhang, Z. Tourists' emotional misattribution behavior under public health emergencies' haze: Insights from a quasi-experiment. *J. Hosp. Tour. Manag.* **2025**, *62*, 57–69. [CrossRef]
32. Glaser, B.G.; Strauss, A.L. *The Discovery of Grounded Theory: Strategies for Qualitative Research*; Aldine: Chicago, IL, USA, 1967.
33. Charmaz, K. *Constructing Grounded Theory*; Sage: London, UK, 2014.
34. Xu, L.; Li, L.; Jiang, Z.; Sun, Z.; Wen, X.; Shi, J.; Sun, R.; Qian, X. A novel emotion lexicon for Chinese emotional expression analysis on Weibo: Using grounded theory and semi-automatic methods. *IEEE Access* **2021**, *9*, 92757–92768. [CrossRef]
35. Jia, M.; Chen, J.; Chen, Y.; Ge, Y.; Zheng, L.; Yang, S. Coupling relationship between tourists' space perception and tourism image in Nanxun Ancient Town based on social media data visualization. *Buildings* **2025**, *15*, 1465. [CrossRef]

36. Xia, L.; Shi, C.; Wang, H.; Yu, S.; Yi, X.; Liu, Y. Aligning online images and realities beyond the hype for sustainable heritage tourism. *npj Herit. Sci.* **2025**, *13*, 642. [CrossRef]
37. *DB53/T 1176.14—2023*; Coding System for Administrative Villages and Communities of Yunnan Province—Part 14: Dali Bai Autonomous Prefecture. Yunnan Provincial Administration for Market Regulation; Yunnan Provincial Department of Civil Affairs: Kunming, China, 2023. (In Chinese)
38. Yunnan Provincial Forestry and Grassland Administration. Yunnan Cangshan–Erhai National Nature Reserve. Available online: https://lcj.yn.gov.cn/special/2025/0313/6396.html (accessed on 3 August 2026). (In Chinese)
39. Zhang, X. *Compilation and Research on Inscriptions of the Nanzhao and Dali Kingdoms*; Yunnan People's Publishing House: Kunming, China, 2024. (In Chinese)
40. Dali Bai Autonomous Prefecture People's Government. From the 'Ticket Economy' to the 'Life and Beauty Economy': Building a Highland for Cultural Tourism Development. Available online: https://www.dali.gov.cn/dlzrmzf/c101532/pc/content/1997960861010989056/content_1997960861010989056.html (accessed on 3 August 2026). (In Chinese)
41. Wang, D.; Qian, H. Scenic area attractiveness in Dali City and its influencing factors evaluated using multi-source spatiotemporal data. *PLoS ONE* **2025**, *20*, e0323310. [CrossRef] [PubMed]
42. Cao, Q.; Zhang, J.; Li, C.; So, K.K.F. From tradition to transaction: The effect of commercialization on tourism experience in cultural heritage attractions. *J. Hosp. Tour. Manag.* **2025**, *63*, 98–111. [CrossRef]
43. Yin, X.; Han, X.; Jung, T. Analysis of spatial perception and the influencing factors of attractions in Southwest China's ethnic minority areas: The case of Dali Bai Autonomous Prefecture. *PLoS ONE* **2023**, *18*, e0285141. [CrossRef] [PubMed]
44. Wang, Y.; Li, X.; Lai, K. A meeting of the minds: Exploring the core–periphery structure and retrieval paths of destination image using social network analysis. *J. Travel Res.* **2018**, *57*, 612–626. [CrossRef]
45. He, Z.; Deng, N.; Li, X.R.; Gu, H. How to 'read' a destination from images? Machine learning and network methods for DMOs' image projection and photo evaluation. *J. Travel Res.* **2022**, *61*, 597–619. [CrossRef]
46. Xu, L.; Lin, H.; Pan, Y.; Ren, H.; Chen, J. Constructing the affective lexicon ontology. *J. China Soc. Sci. Tech. Inf.* **2008**, *27*, 180–185. [CrossRef]
47. Wilson, T.; Wiebe, J.; Hoffmann, P. Recognizing contextual polarity in phrase-level sentiment analysis. In Proceedings of the HLT/EMNLP 2005, Vancouver, BC, Canada, 6–8 October 2005; pp. 347–354. [CrossRef]
48. Viñán-Ludeña, M.S.; de Campos, L.M. Discovering a tourism destination with social media data: BERT-based sentiment analysis. *J. Hosp. Tour. Technol.* **2022**, *13*, 907–921. [CrossRef]
49. Mehra, P. Unexpected surprise: Emotion analysis and aspect-based sentiment analysis of user-generated comments to study behavioral intentions of tourists. *Tour. Manag. Perspect.* **2023**, *45*, 101063. [CrossRef]
50. Xu, Y.; Zhu, S.; Yan, Z.; Semprebon, G. Evolution of urban memory elements in a historic district based on social media data: A case study of the Sajinqiao area in Xi'an, China. *Buildings* **2026**, *16*, 2596. [CrossRef]
51. Cohen, J. A coefficient of agreement for nominal scales. *Educ. Psychol. Meas.* **1960**, *20*, 37–46. [CrossRef]
52. Cohen, J. Weighted kappa: Nominal scale agreement with provision for scaled disagreement or partial credit. *Psychol. Bull.* **1968**, *70*, 213–220. [CrossRef] [PubMed]
53. Sokolova, M.; Lapalme, G. A systematic analysis of performance measures for classification tasks. *Inf. Process. Manag.* **2009**, *45*, 427–437. [CrossRef]
54. Martilla, J.A.; James, J.C. Importance–performance analysis. *J. Mark.* **1977**, *41*, 77–79. [CrossRef]
55. Lai, I.K.W.; Hitchcock, M. Importance–performance analysis in tourism: A framework for researchers. *Tour. Manag.* **2015**, *48*, 242–267. [CrossRef]
56. Chen, J.; Becken, S.; Stantic, B. Assessing destination satisfaction by social media: An innovative approach using importance–performance analysis. *Ann. Tour. Res.* **2022**, *93*, 103371. [CrossRef]
57. Liu, J.; Wang, C.; Zhang, T.C. Exploring social media affordances in tourist destination image formation: A study on China's rural tourism destination. *Tour. Manag.* **2024**, *101*, 104843. [CrossRef]
58. Zou, Y.; Yang, Y.; Li, Y.; Liao, J.; Xiao, H. How do tourists' heritage spatial perceptions affect place identity? A case study of Quanzhou, China. *J. Hosp. Tour. Manag.* **2023**, *55*, 460–470. [CrossRef]
59. Wang, M.-Y.; Li, Y.-Q.; Ruan, W.-Q.; Zhang, S.-N.; Li, R. Influencing factors and formation process of cultural inheritance-based innovation at heritage tourism destinations. *Tour. Manag.* **2024**, *100*, 104799. [CrossRef]
60. Prayag, G.; Del Chiappa, G. Nostalgic feelings: Motivation, positive and negative emotions, and authenticity at heritage sites. *J. Herit. Tour.* **2023**, *18*, 349–364. [CrossRef]
61. Han, J.H.; Bae, S.Y. Roles of authenticity and nostalgia in cultural heritage tourists' travel experience sharing behavior on social media. *Asia Pac. J. Tour. Res.* **2022**, *27*, 411–427. [CrossRef]
62. Chen, Z.; Yang, H.; Lin, Y.; Xie, J.; Xie, Y.; Ding, Z. Exploring the association between the built environment and positive sentiments of tourists in traditional villages in Fuzhou, China. *Ecol. Inform.* **2024**, *80*, 102465. [CrossRef]

63. Shao, C.; Chung, W. The impact of park environmental characteristics and visitor perceptions on visitor emotions from a cross-cultural perspective. *Urban For. Urban Green.* **2024**, *102*, 128575. [CrossRef]
64. Kong, L.; Liu, Z.; Pan, X.; Wang, Y.; Guo, X.; Wu, J. How do different types and landscape attributes of urban parks affect visitors' positive emotions? *Landsc. Urban Plan.* **2022**, *226*, 104482. [CrossRef]
65. Faerber, L.S.; Hofmann, J.; Ahrholdt, D.C.; Schnittka, O. When are visitors actually satisfied at visitor attractions? What we know from more than 30 years of research. *Tour. Manag.* **2021**, *84*, 104284. [CrossRef]
66. Liang, S.; Li, C.; Li, H.; Cheng, H. How do you feel about crowding at destinations? An exploration based on user-generated content. *J. Destin. Mark. Manag.* **2021**, *20*, 100606. [CrossRef]
67. Tokarchuk, O.; Barr, J.C.; Cozzio, C. How much is too much? Estimating tourism carrying capacity in urban context using sentiment analysis. *Tour. Manag.* **2022**, *91*, 104522. [CrossRef]
68. Mendes, M.P.; Torres-González, M.; Valença, J.; Silva, A. The maintenance of monuments as the main trigger to negative feelings in tourists. *Buildings* **2022**, *12*, 2153. [CrossRef]
69. Chen, C.-F.; Tsai, D. How destination image and evaluative factors affect behavioral intentions? *Tour. Manag.* **2007**, *28*, 1115–1122. [CrossRef]
70. Song, Y.; Wang, R.; Fernandez, J.; Li, D. Investigating sense of place of the Las Vegas Strip using online reviews and machine learning approaches. *Landsc. Urban Plan.* **2021**, *205*, 103956. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.