

Public Cultural Perception and Evaluation of the San Su Shrine Based on Big Data Analysis

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Abstract

The San Su's culture constitutes an integral component of Chinese cultural heritage. The San Su Shrine, as its primary vehicle, serves to preserve and manifest the culture ethos, functioning as a pivotal site for public engagement. This study analyzes tourist reviews from major platforms through term frequency, sentiment analysis, and historical-cultural perception analysis. Findings indicate that tourists primarily perceive the temple's cultural identity through its garden architecture, emphasizing familial relationships and literary essence, crystallized as a "family-centered, literature-infused, and temple-garden embodied" framework. While tourist sentiments are predominantly positive, critical assessments target ticket pricing and service management. Cultural perceptions exhibit dual spatial foci, temporal continuity, and multidimensional perspectives. Key deficiencies include insufficient representation of family ethos, stronger ancestral lineage awareness than biographical contextualization of Su Shi, and inadequate dynamic technological exhibits and immersive experiences. Recommendations propose targeted service improvements, immersive family ethos IP development via low-frequency keywords, digital interactive scenarios, and interregional cultural synergies using digital mapping and metaverse technologies to enhance dynamic cultural representation and experiential depth.

Keywords: San Su Shrine, San Su's culture, public perception, big data analysis, tourist experience

1. Introduction

The culture of the San Sus constitutes a vital component of Chinese civilization, representing a cultural treasure in the history of ancient China. It embodies profound traditional wisdom, literary value, and moral philosophy. As one of the most significant carriers of the San Su culture, the San Su Shrine plays a pivotal role in preserving and manifesting the spiritual legacy and cultural achievements of the Su family. It serves as a key venue and invaluable resource for the public to engage with the heritage of the San Sus, thereby contributing significantly to the inheritance and promotion of China's outstanding



traditional culture (Yang, et al., 2024). In January 2018, the United Nations Educational, Scientific and Cultural Organization (UNESCO) awarded the San Su Shrine the "Honorary Certificate for Cultural Heritage Protection," acknowledging its remarkable contribution to the dissemination of Chinese culture worldwide (Guo, et al., 2024). Despite its profound historical status and research value, scholarly investigations on the San Su Shrine and its cultural transmission remain relatively limited, with insufficient academic attention. Further research on this subject therefore holds considerable theoretical and practical significance.

2. Literature Review

In China, studies on the culture of the Three Sus (San Su culture) have a long-standing history and have produced a considerable body of scholarship. Statistics indicate that between 1911 and 2017, approximately 24,000 papers, bibliographic records, and related documents on San Su culture were published (Library of Leshan Normal University, 2020), with the majority focusing on Su Shi and his literary works. By contrast, research specifically dedicated to the San Su Shrine remains relatively limited, rendering it a less-explored subfield within San Su cultural studies, though it has exhibited rapid growth in recent years. A systematic review reveals that existing studies on the San Su Shrine primarily fall into the following categories.

2.1 Studies on Collections and Artifacts

This constitutes one of the earliest and most extensively developed themes in San Su Shrine research, yielding a relatively abundant body of literature. Scholarship in this area primarily investigates the characteristics and cultural value of the shrine's collections, such as inscriptions, couplets, calligraphy, and paintings. For example, Sai *et al.* (2024) analyzed the stylistic features of Su Dongpo's four major calligraphic inscriptions preserved in the shrine; Chen (2024) examined the Qing Dynasty Meizhou woodblock edition of The Complete Works of the Three Sus.

2.2 Studies on Garden and Architectural Arts

A total of nine publications has addressed this theme, making it one of the relatively earlier research directions. As a prominent representative of classical gardens in western Sichuan, the San Su Shrine offers valuable insights into garden design, artistic styles, and architectural aesthetics. Among the most influential contributions are those by Guo Li, *et al.* (2006, 2024), who analyzed the characteristics of the shrine's gardens and developed approaches for their digital conservation. Additional contributions include Jiang (2007) discussion of garden-making techniques, and Sun (2023) analysis of the shrine's spatial narrative and construction principles in Meishan. Collectively, these studies affirm the cultural and artistic significance of the shrine's landscape and architecture.

2.3 Studies on Cultural Heritage Protection, Inheritance and Development

This line of research focuses on heritage preservation, cultural transmission, and regional development related to the San Su Shrine. For instance, Liu (2025) emphasized the significance of promoting the Su family traditions, advancing research on Su-related legal culture, and drawing governance insights from their philosophies. From a broader perspective, Feng *et al.* (2022) investigated cultural heritage conservation and urban renewal strategies for the historical-cultural district of the San Su Shrine within Meishan city.

2.4 Studies on the Development of Cultural and Creative Products

This research direction has gained momentum in recent years, focusing on the development of cultural derivatives and creative products based on the San Su Shrine Museum. By extracting cultural elements from the shrine's historical artifacts, such efforts seek to maximize the utilization of heritage resources and promote innovative modes of cultural dissemination. For example, Pan and Wan (2016) explored principles and strategies for museum-based cultural product development using the San Su Shrine as a case study, while Wang (2023) evaluated the application of augmented reality (AR) children's picture books in disseminating Su Dongpo's culture.

Despite these contributions, research on the San Su Shrine remains relatively limited in scope and depth, with insufficient academic attention and a narrow range of disciplinary perspectives. In particular interdisciplinary investigations are scarce. Moreover, as the primary venue for the dissemination of San Su culture, the shrine still lacks studies addressing cultural perception from the perspective of the general public. Cultural perception refers to tourists' sensory and cognitive experiences of the historical and cultural connotations of a site, and its analysis is an important means to evaluate the effectiveness of cultural communication (Crespi-Vallbona, 2020). As a vital cultural heritage site and cultural resource, examining public cultural perception of the San Su Shrine carries significant implications for enhancing its communicative value and influence, and for improving its role in public cultural services. This study therefore broadens the research horizon of San Su culture, elevates its academic visibility and impact, and provides theoretical references for future scholarship. At the practical level, its findings may inform decision-making on the shrine's development, support the optimization of its public cultural services, and facilitate the wider dissemination and influence of San Su culture.

3. Research Methodology

3.1 Research Approach

This study employs a big data analytical approach based on online user reviews. User-generated online data are characterized by authenticity, timeliness, and comprehensiveness (Choudhary *et al.*, 2024),

making them valuable for capturing tourists' genuine sentiments. Compared with conventional data collection methods, this approach transcends spatial and temporal constraints and enables multi-dimensional semantic feature mining through specialized software tools (Zheng, 2024).

3.2 Data Sources

Data were collected using the Octopus web-crawling software, which retrieved user review data from major travel platforms, including Ctrip, Qunar, Tongcheng Travel, and Mafengwo. Data collection was conducted on December 19, 2024. After removing duplicates, a total of 1,427 valid review texts containing 48,372 Chinese characters were obtained as the raw dataset. Subsequent data preprocessing involved cleaning irrelevant or meaningless words and symbols, removing numbers, punctuation, special characters, and English letters, as well as correcting misspellings and converting traditional Chinese characters into simplified forms. A customized dictionary was then created to enhance analysis accuracy.

Following preprocessing, text analysis was conducted using the ROST CM6 software and the text-mining module of SPSSAU. The analyses included automatic word segmentation, word frequency statistics, and sentiment polarity assessment. In addition, content directly related to cultural aspects was extracted and examined as a dedicated theme, with the aim of further elucidating the public's cultural perception and evaluation of the San Su Shrine.

4. Results

4.1 Word Frequency Analysis

Using ROST CM6 for automated word segmentation, a customized dictionary was applied to enhance segmentation accuracy, yielding a total of 17,526 distinct words. In addition, a self-defined stop-word list was employed to filter out terms irrelevant to cultural perception, thereby improving the reliability of the word frequency analysis.

Overall, the core high-frequency words are concentrated in the following thematic dimensions:

Historical Figures

In the word cloud, the names "San Sus" "Su Shi" "Su Xun" and "Su Zhe" appear prominently. The term "San Sus" occurs 245 times, while "Su Shi" appears 209 times, indicating the high level of public attention toward the father and his two sons, particularly Su Shi, whose literary achievements have deeply resonated with people. This suggests that tourists to the San Su Shrine are largely motivated by a desire to trace the footsteps of the Su family and to experience their literary brilliance and spiritual charisma.

Cultural Atmosphere

Words such as "culture" "literature" and "cultural heritage" occur frequently. For instance, the word "culture" appears 175 times, highlighting the recognition of the San Su Shrine as a significant venue for the inheritance and promotion of traditional Chinese culture. The shrine embodies the cultural connotations of the Song Dynasty, ranging from poetry, prose, calligraphy, and painting to family traditions and the ethos of the literati, collectively showcasing its distinctive cultural charm.

Landscape and Spatial Features

Terms including "San Su Shrine" "scenic area" "attraction" "former residence" "museum" and "garden" emphasize the shrine's touristic attributes and distinctive features. "San Su Shrine" itself appears 397 times, while "environment" and "former residence" each occur 104 times, and "scenic area" appears 86 times. These frequencies underscore the shrine's dual identity as both a historical-cultural heritage site and the former residence of the Su family, attracting a large number of tourists.

Emotional Evaluations

A considerable number of positive expressions such as "good" "worthwhile" "like" "recommend" and "worth seeing" are observed. For example, "good" appears 316 times, "worthwhile" 302 times, and "like" 85 times, directly reflecting tourists' strong approval of the shrine. Moreover, terms such as "feeling" "experience" and "impression" further capture tourists' perceptions, often accompanied by positive descriptions such as "felt great" "deep impression" and "rich experience."

4.2 Sentiment Analysis

An analysis of 1,427 online reviews reveals that 981 comments expressed positive sentiment, accounting for 68.75%; 386 comments (27.05%) were moderately positive; 52 comments (3.64%) were moderately negative; and only 8 comments (0.56%) reflected negative sentiment (Table 1). These results indicate that most tourists were satisfied with their experience at the San Su Shrine and held a favorable overall impression of the site.

Within the positive comments, tourists frequently praised the shrine's profound cultural heritage, emphasizing the opportunity to appreciate the literary achievements and family traditions of the Su family. For example, one reviewer remarked: "Walking into the San Su Shrine feels like traveling through time, conversing with the ancients, and gaining a deep understanding of the vastness of Chinese traditional culture." In addition, the aesthetic qualities of the garden landscape were widely recognized. As another tourist noted: "The garden design of the San Su Shrine is remarkably ingenious, with pavilions, corridors, flowers, and trees complementing one another like a beautiful painting, creating an immersive experience."

By contrast, moderately positive comments were generally brief descriptions of the visit without strong emotional expression. For instance, a tourist commented: "Visited the San Su Shrine and learned a bit about the history of the San Sus, it was fine."

Table 1. Distribution of Sentiment Orientation

Sentiment Orientation	Frequency	Percentage
Positive	981	68.75%
Moderately Positive	386	27.05%
Moderately Negative	52	3.64%
Negative	8	0.56%

Nevertheless, a number of tourists expressed negative sentiments. A focused analysis of the negative and moderately negative reviews indicates that the factors contributing to unfavorable evaluations are primarily concentrated in four areas (Table 2). First, ticket pricing (25 reviews), reflecting a mismatch between the admission cost and tourists' perceived value of the experience. Second, environmental management (14 reviews), suggesting that deficiencies in maintenance and upkeep negatively affected the tourist experience. Third, holiday management and services (12 reviews), indicating that the site lacks flexible management strategies during peak holiday periods, thereby diminishing tourist satisfaction. Fourth, interpretive services (11 reviews), highlighting the need for improvements in both the organization and quality of guided tours.

Table 2. Classification of Negative Reviews

Category	Number of Reviews	Example Comments
Ticket Pricing	25	"The tickets are expensive, and there isn't much to see inside."; "The admission fee is too high, and the ticket collection point is difficult to locate."
Environmental Management	14	"Too many mosquitoes."; "The environment is poorly maintained, with overgrown weeds and inadequate management."
Holiday Management	12	"During the National Day holiday, the place was overcrowded, impossible to take photos, and I left after 10 minutes without really seeing anything."; "Too many tourists during holidays, with too few staff."; "The service attitude was very poor and chaotic during the holidays."
Interpretive Services	11	"Booking guided tours takes too long; we had to wait until the previous group finished."; "Returning the audio guide was inconvenient since it had to be returned to the original pickup point."; "The group was supposed to be 15–20 people but grew to more than 50. The guide recited mechanically, lacked experience, and wasted time."

4.3 Analysis of Historical and Cultural Image Perception

By extracting culturally relevant words (frequency ≥ 3) and conducting clustering analysis according to semantic attributes, the keywords were grouped into seven categories: place, time, literary culture, family and individuals, garden and architecture, emotional experience, and tourist activities. Semantic

interpretation of these categories suggests that tourists' perception of the historical and cultural image of the Former Residence of the San Sus (San Su Shrine) can be summarized as: a cultural experience space characterized by garden and architectural landscapes as carriers, literary culture as the core, and family ethics and traditions of the Su family as the central narrative. Specifically, the characteristics of tourists' cultural image perception can be summarized as follows:

Dual Focus of Place Perception

Two distinct types of high-frequency terms reflect spatial perception. The first type is closely related to the geographical location of San Su Shrine, such as "Meishan" (228), "Sichuan" (22), and "Shuzhong" (11), which highlight tourists' strong regional identity with the cultural homeland. The second type relates to Su Shi's official career, including "Huangzhou" (7) and "Huizhou" (4). The number of words in the first type (387) far exceeds the second (22), indicating that tourists' recognition of the Su family's roots significantly outweighs their perception of Su Shi's career trajectory. This implies that the regional cultural representation of Su Shi's life path could be further emphasized.

Diachronic Perception of Historical Continuity

Time-related terms reflect tourists' awareness of the historical evolution of San Su Shrine. Keywords such as "Northern Song" (44), "Song Dynasty" (19), and "Song" (9) underscore the cultural origins of the San Sus. References to "Ming Dynasty" (9), "Qing Dynasty" (14), and "Republic of China" (4) highlight the phases of architectural renovation and development. In addition, terms like "millennium" (16) and "through the ages" (32) emphasize the perception of cultural timelessness.

Multidimensional Perception of Literary Culture

Literary and cultural perception comprises three dimensions:

- Recognition of historical depth and cultural heritage ("history" (111), "heritage site" (17), "monument" (21)).
- Labeling of the Su family's literary status ("Eight Great Prose Masters of the Tang and Song" (33), "literary giant" (57), "poet" (6)).
- Awareness of artistic and literary forms ("literature" (39), "poetry" (25), "calligraphy" (10)).
- These patterns reveal that literary expression serves as the core medium of cultural transmission and that the literary essence of the Su family remains central to cultural recognition.

Ethical and Familial Narratives of the Su Family

Family-related terms highlight tourists' recognition of intergenerational ties and ethical traditions. Examples include "San Su father and sons" (27), "Madam Cheng" (5), "Madam Shi" (3), and "brothers" (12), reflecting both the family's educational legacy and the collective identity of the Su literary community. Such narratives embody the cultural tag of "family literary lineage." However, the relatively low frequency of terms such as "Madam Cheng" and "Madam Shi" suggests limited tourist awareness, indicating that the representation of family ethics remains insufficient.

Diverse Perceptions of Garden and Architectural Culture

Garden and architecture terms fall into two groups. The first relates to the buildings themselves, such as "San Su Shrine" (397), "former residence" (104), and "museum" (87). The second concerns garden elements, such as "courtyard" (22), "trees" (14), and "pavilions" (15). These findings highlight the central role of architecture in cultural presentation. However, tourists' perception remains largely tied to traditional garden features, suggesting a lack of integration of contemporary technological elements, which could be explored to enrich cultural display in the future.

Hierarchical Progression of Emotional Experience

Tourists' emotional experiences exhibit a progressive hierarchy:

- Generalized evaluations, e.g., "good" (127), "worthwhile" (302), and "not bad" (316).
- Evaluations of environmental atmosphere, e.g., "beautiful" (37), "serene" (26), and "quiet" (17).
- Evaluations of cultural spirit, e.g., "profound" (11), "rich" (43), and "proud" (7).

This progression indicates that tourists' perception moves from external environmental appreciation to deeper cultural resonance, reflecting the site's capacity to inspire cultural identification and emotional engagement. Nonetheless, most environmental evaluations remain static, implying a relative lack of dynamic experiential elements in the cultural setting.

Differentiation of Tourist Activities

Tourist activity terms reveal a two-tiered pattern of engagement: "shallow contact" versus "deep experience." The former includes general sightseeing behaviors ("visit" (68), "tour" (30), "stroll" (25)), while the latter involves interactive learning and commemorative practices ("learning" (55), "commemoration" (23), "education" (20)). In addition, culinary experiences associated with Su Shi's gastronomic legacy (e.g., Dongpo pork) form part of tourist activities. However, the frequency of general sightseeing activities (344) greatly exceeds that of deep experiential activities (185), suggesting a relative insufficiency of immersive cultural programs.

Table 3 Keywords Closely Related to "Culture" (Frequency ≥ 3)

Category	Subcategory (Total Frequency)	Keywords (Frequency)
Location	Hometown of the San Sus Temple (387) Places of Su Shi's Activities (22)	Meishan (228), Sichuan (35), Meizhou (23), Chengdu (19), Leshan (13), Shuzhong (11), Shahu Lane (11), Dongpo District (9), Original Site (9), Songcheng (8), South Street (7), Southwest (6), Hometown (5), Birthplace (3) Huangzhou (7), Jiangnan (6), Su Causeway (5), Huizhou (4)
	Historical Roots (72)	Northern Song (44), Song Dynasty (19), Song (9)
Time	Chronology of the San Sus Temple (91) Others (70)	Qing Dynasty (14), Ancient Times (12), Ming Dynasty (9), Late Ming (9), Yuan Dynasty (8), Hongwu Year One (7), Ming and Qing (6), Era (6), Period (6), Republic of China (4), Tang Dynasty (4), Century (3), Successive Dynasties (3) For Eternity (35), Millennium (16), Lasting (7), Generations (4), Ages (4), 19th Day of the 12th Lunar Month (4)

Literature & Culture	Historical and Cultural Heritage (625)	Culture (175), History (111), Cultural Heritage (52), Humanities (42), Life (26), Cultural Atmosphere (24), Cultural Relics (22), Historical Sites (21), Relics (17), Classics (15), Life Deeds (13), Literature (12), Protection (9), Preservation (8), Collection (8), Time-Honored (7), Tradition (7), Arts (7), Exhibition (7), Handwriting (6), Cultural Creation (6), Retention (6), Relics Protection (5), Attainment (5), Chinese Culture (4), Huaxia (4), Cultural Background (3), Cultural City (3), Cultural Heritage (3), Chinese Nation (3)
	Identity of the San Sus (249)	Literary Giant (57), Writer (40), One of the Eight Great Prose Masters of the Tang and Song (33), Literati (25), Celebrity (19), Three Ci Poets (15), Three Talents (9), Official (8), Poet (6), Both Listed (6), Men of Letters (6), Model (5), Sage (5), Refined Scholar (4), Literary Circle (4), Author (4), Calligrapher (3)
	Literary & Artistic Forms (200)	Literature (39), Poetry (25), Stories (24), Essays (22), Couplets (13), Calligraphy (10), Art (9), Prose & Poetry (8), Painting & Calligraphy (8), Classical Poetry (7), Allusions (6), Verses (5), Inscriptions (5), Poetry & Books (4), Rubbings (3), Stone Carvings (3), Writings (3), Pictures (3), Paintings (3)
Family & Figures	General Relations (366)	San Sus (245), Su Family (53), One Family (24), Family Tradition (12), Family Members (8), Clan (7), Su Gate (6), The Whole Family (4), Scholarly Family (3), Family Instructions (4)
	Vertical & Horizontal Relations (163)	Children (74), The Three Fathers and Sons (36), The San Sus Father and Sons (27), Brothers (12), Father (9), Son (5)
	Individual Figures (598)	Su Shi (209), Su Dongpo (114), Dongpo (76), Su Xun (74), Su Zhe (69), Su Clan (25), Madam Cheng (5), Su Xiaomei (5), Madam Shi (3), Wang Chaoyun (3), Wang Fu (3), Su Baniang (3), Young Master (3), Ren Cailian (3)
Gardens & Architecture	Pavilions and Buildings (1018)	San Sus Temple (397), Former Residence (104), Scenic Spot (89), Museum (87), Tourist Attraction (86), Memorial Hall (48), Ancestral Hall (41), Park (40), Building (37), Exhibition Hall (9), Inscription Board (9), Wing Room (7), Xiang Hall (6), Three Courtyards (6), Siheyuan (6), Layout (6), Shops (6), Front Hall (6), Qixian Hall (5), Memorial Hall (5), Hall and Pavilion (5), Old House (4), Ancient Street (4), Ancient Ancestral Temple (4), Laifeng Pavilion (4), Su Temple (3)
	Garden Landscapes (353)	Garden (74), Courtyard (22), Pavilions (15), Yard (14), Trees (14), Towers & Pavilions (13), Small Bridge (13), Ginkgo (13), Ancient Well (12), Three-Way Water (12), Park Area (11), Pavilion (10), Ancient Trees (10), Old Trees (9), Bamboo Island (9), Garden Scenery (8), Garden Style (8), Rockery (7), Ancient Architecture (7), Inkstone Pool (7), Lotus Pond (7), Bamboo Grove (6), Lotus Pool (6), Plants (6), Stele Forest (6), Sculpture (5), Stele Gallery (4), Corridor (4), Courtyard (4), Lotus Leaf (4), Bridge over Flowing Water (4), Pavilion (4), Bamboo (3), Temple Garden (3), Stele Pavilion (3)
	Overall Evaluation (911)	Nice (316), Worthwhile (302), Very Good (127), Like (85), Fun (11), Pretty Good (10), So-So (10), Good Review (9), Beautiful (7), Happy (6), Comfortable (6), Not in Vain (6), Land of Outstanding People (6), Unique (5), Great (5)
Emotional Experience	Environmental Experience (288)	Beautiful (37), Serene (26), Spacious (24), Pretty (18), Simple (17), Quiet (17), Elegant (16), Natural (14), Picturesque (9), Peaceful in Bustle (9), Shaded with Trees (9), Clean (9), Antique (7), Classical (7), Pleasant (7), Exquisite (6), Historical Sense (6), Too Small (6), Comfortable (5), Fresh (5), Deep (5), Artistic Conception (5), Neat (4), Solemn (4), Ancient Charm (4), Open (3), Winding Path to Secluded Place (3), Lush (3), Tranquil (3)
	Spiritual Experience (208)	Strong (43), Profound (19), Interesting (18), Meaningful (13), Elegant (12), Deep (11), Graceful (9), Rich (9), Lively (13), Pleasant (8), Proud (7), Glorious (7), Poetic (7), Open-minded (6), Moved (5), Fun (5), Profound and Extensive (5), Weighty (4), Beneficial (4), Immersive (3)
	Activities General (344)	Visit (68), Experience (58), A Tour (34), Sightseeing (30), Travel (28), Play (25), Check-in (18), Take Photos (11), Stroll (12), Display (10), Walk Around (10), Wander (9), Watch (8), Take a Look (6), Leisure (6), Stroll in the Park (5), Glance (3), Appreciate (3)
Tourist Activities	In-depth Experiences (169)	Learning (55), Commemoration (23), Education (20), Worship (11), Reading (8), Paying Homage (7), Sacrifice (6), Mourning (7), Collecting (7), Research (6), Cultivation (6), Tasting (5), Paying Respect (3), Food (5)

5. Discussion and Recommendation

5.1 Discussion

By employing large-scale text mining, this study established an empirical research framework to investigate public cultural perception of the San Su Temple. Through the integrated application of ROST CM6 and SPSSAU for in-depth textual analysis, the study revealed the cognitive focus and emotional tendencies of tourists regarding the cultural value of the San Su Temple.

From the perspective of tourist perception, the cultural image of the San Su Temple is shaped by its traditional garden and architectural landscape as the carrier (Guo, et al., 2024), with literary culture as the core, and centered on the historical and cultural experience space that highlights the family relations and moral heritage of the Su family.

The overall emotional tendency of tourists toward the San Su Temple is positive. Negative perceptions primarily concern ticket pricing, environmental management, holiday crowd management, and interpretive services.

Tourists' cultural perception of the San Su Temple presents several characteristics: dual foci on place-based perception, diachronic continuity within historical contexts, multidimensionality of literary culture, narrativity of family ethics, pluralism of garden and architectural culture, layered progression of emotional experience, and differentiation of tourist activities.

The intensity of tourists' perception of the Su family's genealogical roots substantially exceeds their associative understanding of Su Shi's personal life trajectory. Moreover, terms related to female family members such as Madame Cheng and Madame Shi appear less frequently, suggesting that the cultural expression of family ethics remains insufficiently emphasized (Gao & Su, 2022; Liu, 2024). Additionally, tourists' perception of the garden and architectural landscape largely focuses on traditional elements, while evaluations of the environmental atmosphere are predominantly static, indicating a lack of dynamic or technology-enhanced displays. Furthermore, general sightseeing activities dominate tourist engagement, whereas participation in immersive and experiential activities remains relatively limited, reflecting a shortage of in-depth cultural tourism offerings.

5.2 Recommendations

Special Rectification Based on Negative Sentiment Evaluations

The scenic area management authority should adopt targeted measures to address tourists' negative evaluations, thereby enhancing tourist satisfaction and strengthening the overall image of the site. First, enrich the experiential content by designing themed tour routes, such as a "Su Shi Poetry Tour", to increase cultural attractiveness and offset ticket price controversies. Second, improve service flexibility during peak holidays by allocating additional guides and volunteer staff. Third, strengthen tour guide training to deepen historical and cultural interpretation and improve interactive communication skills;

this may be complemented by intelligent interpretation systems and multiple borrowing-and-return points for audio devices. In addition, online reservations for time-slotted guided tours could be introduced to reduce queuing. Fourth, apply environmentally friendly mosquito repellents at regular intervals to improve the tourist experience.

Developing an Immersive Family Tradition Cultural IP

Using low-frequency keywords such as "Sha Hu Xing" and "Madam Cheng" as entry points, the underexplored family teachings, scholarly pursuits, and business stories of the Su family can be further excavated to foster deeper emotional resonance among tourists. For instance, professional teams could develop themed performances reenacting classic family education stories, such as "Madam Cheng Teaching Her Sons", in which tourists are encouraged to participate. In addition, collaborations with universities could lead to the development of creative cultural products inspired by family traditions, integrating Cheng's educational aphorisms and related cultural elements.

Creating Experiential Cultural Scenes

Focusing on high-frequency keywords such as "poetry and prose" and "calligraphy", multi-sensory and participatory cultural experiences should be designed to overcome the monotony of "static visiting." For example, poetry workshops and calligraphy rubbings halls could be established, alongside digital poetry games such as "Feihualing." Tourists might also engage in rubbings of classical works—such as Su Shi's Cold Food Festival Manuscript (Hanshi Tie) or Su Zhe's Luan Cheng Ji—and mount them as souvenirs. Furthermore, interactive cultural activities would diversify the modes of engagement, deepen participation, and reinforce the unique position of the San Su Shrine as a "landmark of Song Dynasty culture."

Strengthening Temporal-Spatial Connections and Cross-Regional Cultural Integrations

By utilizing keywords such as "Northern Song Dynasty," "Huangzhou," and "Huizhou," a digital map of Su Shi's life can be developed, linking San Su Shrine with other cultural sites associated with the Su family across different regions. This would promote cross-regional cultural integration and shape a broader cultural community. Complementary initiatives could include dynamic visualizations such as an interactive "Dongpo Life Map," digital sand-table displays of Su Shi's life trajectory, or even a metaverse-based interactive exhibition hall, thereby enabling tourists to engage in immersive and diversified ways to deepen their understanding of Su culture.

6. Conclusion

This study innovatively applies big data text analysis to the evaluation of cultural heritage, overcoming the limitations of traditional questionnaire-based methods. By analyzing large-scale and objective data, it reveals the diverse interpretations of the cultural significance of the San Su Shrine from the public perspective. The findings provide empirical support for improving site management, while also offering a new reference for cultural heritage conservation and transmission. Future studies may expand data

sources by integrating surveys and in-depth interviews to investigate underlying mechanisms, and compare "online–offline" cultural perceptions. Such approaches will contribute to exploring more distinctive pathways for the living transmission of cultural heritage.

Conflicts

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