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Public Value Perception and Conservation Strategies for Urban Industrial Heritage: Evidence from UGC

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Abstract

Urban industrial heritage is increasingly embedded in urban regeneration, public space provision, and community governance, yet existing studies have insufficiently examined how heterogeneous publics perceive its value through everyday digital discourse. Taking the Guangzhou Iron and Steel Plant industrial heritage site (hereafter, the Guanggang industrial heritage site) as a case study, this study used user-generated content from Rednote posts and local WeChat public-account comments to identify platform-mediated expressions of public value perception. A corpus of 745 valid samples comprising 51,459 Chinese characters was constructed after data collection, screening, and text preprocessing. Word-frequency analysis, semantic network analysis, and sentiment analysis were conducted using ROST CM 6.0. The results show that the two retrieved platform-contextual corpora foregrounded different concerns. Rednote discourse foregrounded ruin landscapes, industrial aesthetics, photography-based check-ins, and exploratory experiences, whereas WeChat comments emphasized park construction, public facilities, governance responsiveness, safety, and the residential environment. At the corpus level, lexicon-based sentiment classification indicated that Rednote texts were dominated by positive and neutral categories, while WeChat comments contained a higher proportion of texts classified as negative. This study conceptualizes dual foregrounding as a bounded selection process through which platform affordances, user self-selection, and users' relationships with the site influence which concerns become visible in each corpus; it does not treat the observed differences as a causal platform effect. It argues that industrial heritage regeneration must translate historical, technological, and aesthetic values into public values that are interpretable, accessible, usable, and trusted by local communities.

Keywords: urban industrial heritage (UIH); user-generated content (UGC); public value perception; adaptive reuse; Guanggang; heritage governance

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1. Introduction

Urban industrial heritage (UIH) constitutes the material manifestation of industrialization within an urban space and serves as a critical medium through which labor memory and local identity can be understood [1,2]. In the context of contemporary urban governance, industrial heritage is no longer confined to the preservation of abandoned factories [3,4], machinery, or production landscapes [5]. Rather, it has evolved into a

comprehensive urban issue closely associated with land conservation [6], cultural continuity [7], public space provision, and sustainable urban regeneration [8]. This broader significance has been further reinforced by Target 11.4 of the United Nations Sustainable Development Goals [9,10], which explicitly calls for strengthening efforts to "protect and safeguard the world's cultural and natural heritage," thereby providing an important sustainability-oriented value framework for industrial heritage conservation. Existing studies have demonstrated that the adaptive reuse of industrial buildings can generate synergies between heritage preservation [11,12], land-saving strategies, environmental benefits, and community participation [13,14]. Moreover, industrial heritage regeneration has been shown to revitalize declining urban areas by fostering social innovation and place-based innovation mechanisms, thereby restoring public vitality and spatial value [15,16]. Consequently, a central challenge in current UIH research lies in how to determine the multifaceted value of industrial heritage amid rapid urban transformation and, more importantly [17], how to translate such value into conservation and reuse pathways that can be publicly understood, socially participated in, and sustainably utilized over time.

The Nizhny Tagil Charter emphasizes that public interest in, attachment to, and appreciation of industrial heritage constitute one of the most reliable foundations for its conservation [18,19]. This statement indicates that public value perception is not a peripheral factor in heritage protection [20,21], but a prerequisite for the social legitimacy and long-term vitality of heritage sites [22,23]. In this study, public value perception refers to how different publics recognize, evaluate, and express the significance of urban industrial heritage in relation to its historical memory, material remains, spatial experience, everyday usability, safety, and governance responsiveness. It is understood not as a fixed expert-defined value category, but as a socially situated perception that varies across user groups and communicative contexts. Operationally, it is identified through UGC evidence, including frequently mentioned value elements, semantic associations between these elements, and the sentiment expressions attached to them.

Existing studies on heritage value perception have generated important findings across different study sites [24,25]. In traditional villages, rural architectural heritage, and local cultural landscapes [26–29], scholars have examined how residents and visitors perceive historical [30,31], cultural [32–34], aesthetic [35], social [36–38], and utilitarian values, and how such perceptions influence place attachment, conservation attitudes [39–42], and willingness to participate [43,44]. In industrial heritage studies [45,46], related research has increasingly addressed authenticity, perceived value [47], tourism experience, community support [48,49], and reuse preference [50,51]. Recent work in heritage conservation and adaptive reuse has further confirmed that public perception and public value perception are important dimensions in understanding heritage protection, visitor experience, willingness to pay, community support, and reuse decision-making, including empirical studies based on Chinese heritage cases [52–55]. These studies demonstrate that public perception is already an established concern in heritage, conservation, and adaptive reuse research. However, most existing studies still rely on questionnaires, interviews, expert–public comparison, or visual evaluation methods, and often focus on relatively stable heritage tourism settings, single stakeholder groups, or completed reuse projects [56]. Less attention has been paid to how heterogeneous publics express and negotiate industrial heritage value through everyday digital discourse when urban industrial heritage is still embedded in land redevelopment, public space provision, community improvement, and unfinished regeneration processes. Therefore, the first research gap addressed by this study is not the absence of public perception research, but the insufficient understanding of how differentiated public value perceptions emerge in the specific context of ongoing urban industrial heritage regeneration.

Methodologically, existing studies on industrial heritage value perception have mainly followed three approaches [55,57]. The first is expert-led value assessment, including the Analytic Hierarchy Process, the Delphi method, fuzzy comprehensive evaluation, and multi-criteria decision-making models [58,59]. These approaches are useful for establishing systematic indicator frameworks and assigning comparative weights to historical [60], technological [61,62], artistic [63], social, and economic values. The second approach is based on questionnaire surveys and structural equation modeling, which can test causal relationships between perceived value, place attachment, satisfaction, behavioral intention, and conservation support [64,65]. The third approach uses interviews, field observation, and case comparison to interpret local memory, stakeholder conflict, and spatial use in heritage regeneration processes [66,67]. Nevertheless, these methods share a common limitation: they tend to rely on predefined indicators, structured questionnaires, or specific interview settings. As a result, it is difficult for them to capture the spontaneous perceptions that emerge through everyday encounters, online expressions, and actual public use. This limitation is especially significant when the conservation and adaptive reuse of urban industrial heritage are still unfolding and public opinion remains dynamic. Therefore, the second research gap concerns the methodological difficulty of capturing value divergence, emotional fluctuation, and concrete public demands in a timely and bottom-up manner.

The expansion of social media platforms and online review systems provides a new opportunity to address this limitation [68]. Compared with conventional survey data [69], user-generated content (UGC) is spontaneous [70,71], contextual [72], and large-scale [73], making it suitable for capturing public evaluations, emotional expressions, visual preferences [74,75], and spatial use demands in everyday discourse. However, UGC should not be treated as platform-neutral evidence. Roma and Aloini have shown that the characteristics of UGC vary across social media platforms, because platform environments shape how users produce, present, and circulate content [76]. Rednote and WeChat public accounts differ in both platform design and likely user composition. Rednote is an image–text lifestyle-sharing platform widely popular among young women in urban China; creator and influencer content, interest-based discovery, peer recommendations, and source credibility are important to how posts circulate and are evaluated [77]. By contrast, WeChat public accounts are one-to-many information channels operated by organizations or individuals for subscribers; the WeChat data in this study consist only of comments attached to local public-account articles, not posts from personal networks. The two sources are therefore complementary but neither functionally nor demographically equivalent. In tourism studies, UGC has been widely used to explain information adoption [78,79], destination image, satisfaction, and loyalty behavior [80,81]. In cultural heritage studies, sentiment analysis and aspect-based sentiment analysis based on online reviews have been applied to interpret visitor experience [82], service perception, and heritage site management issues [83]. More recently, several studies have begun to use social media data in industrial heritage research, particularly to examine visual preference, tourism experience, or the discrepancy between public perception and professional design intention during regeneration processes [84]. Two limitations are especially relevant to the present study. First, existing UGC-based industrial heritage studies have not sufficiently examined the deeper structure of public value cognition embedded in everyday online discourse. Second, when heterogeneous social media sources are used, the decision to merge or separate platform data requires case-specific justification. In the Guanggang industrial heritage site case, direct aggregation would obscure the different concerns made visible in visitor-oriented Rednote discourse and community-oriented WeChat public-account discourse. Together, these two limitations define the third research gap: the lack of platform-sensitive empirical analysis that links

UGC-based value expressions to mismatches between public perceptions, heritage values, and ongoing conservation or adaptive reuse practices.

Taken together, these gaps indicate that the problem addressed in this study is not a general absence of research on industrial heritage value, public participation, or digital heritage perception. Rather, three more specific issues remain insufficiently connected. Theoretically, it remains unclear how heterogeneous publics foreground different dimensions of urban industrial heritage value when the same site functions simultaneously as a material heritage asset, a redevelopment area, and an emerging public space. Methodologically, although platform studies have shown that UGC is not platform-neutral, heritage research still needs clearer case-based procedures for using multi-platform UGC without conflating visitor-oriented and community-oriented expressions. Contextually, in China's government-led urban regeneration, it remains insufficiently explained how online public perceptions can inform conservation and adaptive reuse strategies for industrial heritage sites that are not yet fully open or institutionally stabilized. To address these issues, this study takes the Guangzhou Iron and Steel Plant industrial heritage site as a case study and uses UGC from the Rednote and WeChat public platforms to examine how different platform-contextual discourses make different dimensions of industrial heritage value visible.

This study addresses three research questions. First, what value elements of the Guanggang industrial heritage site are most prominently perceived and discussed by the public on different platforms? Second, how do the semantic structures and corpus-level sentiment patterns of public discourse differ between visitor-oriented and community-oriented platform contexts? Third, what mismatches can be identified between differentiated public value perceptions and current conservation or adaptive reuse conditions, and what strategy implications can be derived for more responsive industrial heritage regeneration? By answering these questions, this study makes three specific contributions. Conceptually, it specifies dual foregrounding as a bounded selection process that explains how platform affordances, user self-selection, and users' relationships to the site make different value concerns visible, without attributing those differences to platform alone. Methodologically, it contributes to platform-sensitive digital heritage research by showing why heterogeneous UGC sources should be interpreted in relation to their communicative contexts rather than treated as a single undifferentiated corpus. Practically, it translates digital public perception into conservation and adaptive reuse implications concerning value interpretation, zoned access, community-oriented function integration, and feedback-driven governance.

2. Materials and Methods

2.1. Research Framework

In this study, a UGC-based research framework was developed for identifying public value perception of urban industrial heritage (Figure 1). The framework includes three sequential steps. First, publicly accessible texts related to the Guanggang industrial heritage site were collected from the Rednote and WeChat public platforms using Octopus Collector, and irrelevant, duplicate, advertising, or non-Guanggang samples were removed through pre-screening. Second, in order to identify the distribution of public value concerns, the structural associations of heritage value perception, and corpus-level sentiment patterns, the retained texts were cleaned, standardized, converted into TXT format, and analyzed using ROST CM 6.0 through word-frequency analysis, semantic network analysis, and sentiment analysis. Third, the analytical results were interpreted in relation to the current conservation and adaptive reuse conditions of Guanggang, and were further translated into four strategy dimensions: layered value interpretation, zoned access and safety governance, community-oriented functional integration, and transparent feedback.

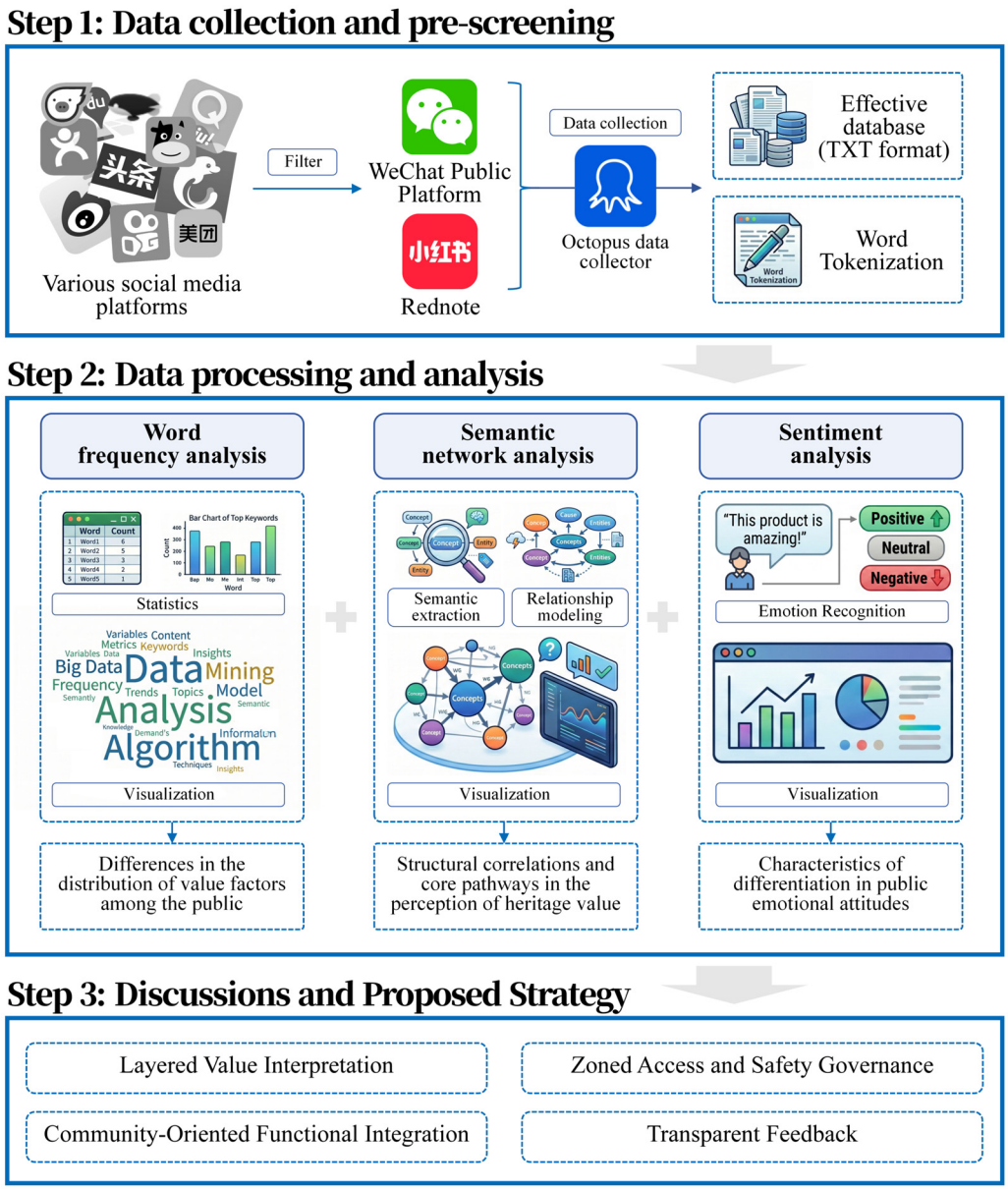


Figure 1. Research framework of the study.

2.2. Research Area

The Guanggang industrial heritage site is located in Guanggang New Town, Guangzhou, Guangdong Province, China, and is surrounded by high-density residential communities with a permanent population of approximately 200,000 residents. Throughout this paper, "Guanggang industrial heritage site" refers to the retained industrial remains and the regeneration area examined as the case; "Guanggang Park" refers specifically to the planned park reuse within that site; and "Guanggang New Town" refers to the wider surrounding redevelopment area. These terms are related but are not used synonymously. The shorthand "Guanggang" is retained only in reproduced platform keywords, place names, or source language. The Guangzhou Iron and Steel Plant, the largest steel production base in twentieth-century Guangzhou, officially commenced operation in 1958. It later became the first Sino-foreign joint venture enterprise in China's steel industry and witnessed several distinctive phases of China's industrialization process, including the historical campaigns associated with "mass steel production" and the policy orientation of "taking steel production as the key link." Consequently, the site carries substantial collective memory for former factory workers and their families. In 2013, the Regulatory Detailed

Plan for Guanggang New Town was officially approved, leading to the demolition of portions of the former industrial facilities. At present, the remaining industrial heritage area covers approximately 34.72 hectares. The core zone has retained a relatively complete assemblage of steel production process relics and is scheduled to be developed into a post-industrial landscape park.

According to relevant heritage assessments, the site contains 12 traditional-style historic buildings and one municipally designated industrial heritage site, providing significant historical, technological, and landscape value (Figure 2). The "12 traditional-style historic buildings" refer to individual building resources identified in the heritage assessment, whereas the "municipally designated industrial heritage site" refers to an officially recognized industrial heritage unit rather than a single building. At present, Guanggang Park is not fully open to the public. Visitors are mainly able to observe the exterior of selected large-scale industrial remains, surrounding post-industrial landscapes, and several visible historic structures from accessible areas or site boundaries, while most individual buildings and production-related relics are not yet open for interior visitation. During the May 2025 field survey, no systematic visitor-oriented interpretation system was observed in the accessible areas, such as permanent historical plaques, route-based heritage panels, QR code interpretation, or materials explaining the steelmaking process and workers' memory. Therefore, visitors currently encounter Guanggang mainly through visual observation of the remaining structures, while contextual information on its historical, technological, and social significance remains limited. These site conditions make Guanggang a transitional case in which public perception is formed before a mature museum, tourism, or park-management system has been established.

At the same time, Guanggang exemplifies several structural contradictions commonly embedded in the conservation and adaptive reuse of urban industrial heritage in China. Although the core industrial relics were preserved, the prioritization of real-estate redevelopment over heritage conservation severely compromised the overall spatial integrity of the former industrial complex and its supporting facilities, thereby affecting the integrity of its historical, artistic, and technological values to varying degrees. Moreover, although the Guanggang Park regeneration plan was proposed more than a decade ago, its implementation has progressed slowly due to repeated revisions and planning adjustments. The site has not yet been fully opened to the public, and public participation has remained largely limited to small-scale opinion solicitation processes. However, this unfinished and transitional condition is precisely what makes Guanggang analytically valuable for this study: public perception has not yet been stabilized by a mature tourism, museum, or park-management systems and is still being formed and contested through everyday online discourse. Therefore, Guanggang provides a suitable case for investigating how different publics perceive industrial heritage value during the implementation stage of conservation and adaptive reuse, especially in relation to accessibility, safety, public facilities, construction progress, and governance responsiveness.

2.3. Data Collection and Preprocessing

To clarify the temporal sequence of the research process, this study distinguishes between the on-site survey and the online UGC collection. The on-site survey and UAV photography were conducted in May 2025 to record the physical condition and spatial context of the Guanggang industrial heritage site. The online UGC retrieval was conducted separately and was completed on 1 December 2025. This date refers to the retrieval cut-off date rather than the publication month of the posts; therefore, the corpus included all retrievable public posts and comments published before 1 December 2025, not only those posted in December 2025. No starting-date restriction was imposed. However, publication-

date metadata were not consistently available across the retrieved records, so the earliest publication year cannot be verified reliably. The corpus should therefore be interpreted as a retrieval-bounded sample up to 1 December 2025 rather than as a complete time series.

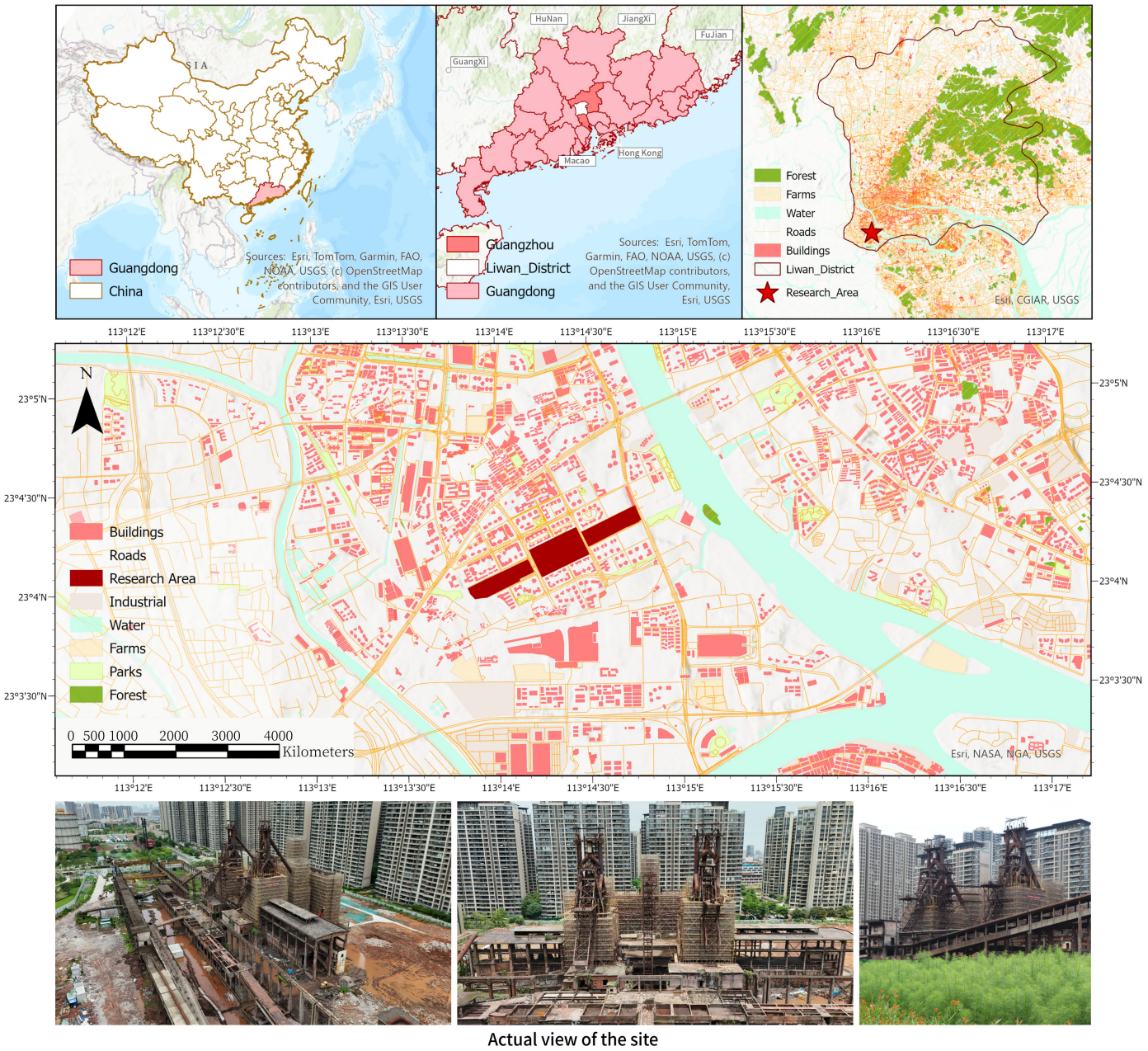


Figure 2. Study area.

Octopus Collector was used as a keyword-based data extraction tool. The crawler did not apply an additional algorithm beyond the keyword retrieval logic of the selected platforms; instead, it extracted publicly accessible search results returned by the platforms according to the predefined keywords. Reposts and duplicated platform records were handled during duplicate removal: records with identical or near-identical titles, body texts, source links, or publication information were retained only once. Platform recommendation ranking or algorithmically promoted visibility was not used as an inclusion criterion; all candidate records had to be retrieved through the predefined keywords and pass the subsequent relevance screening. For Rednote, the keywords "Guangzhou Iron and Steel Plant," "Guanggang ruins," and "Guanggang industrial heritage" were used. The extracted

fields included post titles, body texts, source links, and publication information, when available. A total of 2591 relevant posts were initially obtained. After removing posts with insufficient text length, vague or non-substantive content, real-estate advertisements, duplicate records, and irrelevant samples referring to other industrial heritage sites such as Shougang, Chongqing Iron and Steel, and Redtory, 219 valid posts were retained. The final Rednote corpus contained 34,887 Chinese characters.

For the WeChat public platform data, the keywords "Guanggang Park" and "Guanggang industrial heritage" were used to search local public accounts, including Guanggang Zui Shenghuo, Guanggang Wei Shenghuo, and Guanggang New Town Living Circle. The extracted fields included article titles, article texts, associated comments, source links, and publication information when available. This process yielded 23 relevant articles and 533 associated comments. After comments without substantive content were excluded, 526 valid comments were retained, comprising 16,572 Chinese characters. It should be clarified that the WeChat data used in this study were collected from publicly accessible local public accounts and their associated comment sections, rather than from private WeChat personal networks or closed social circles. Therefore, the WeChat corpus should not be interpreted as a general sample of all WeChat users or all site visitors. Instead, it represents the community-oriented public discourse generated around local information channels related to Guanggang Park and Guanggang New Town. In contrast, the Rednote corpus mainly represents image–text sharing and interest-based expressions related to ruin exploration, photography, and urban visiting. The two datasets were therefore used to contrast different public expression contexts rather than to make a demographic comparison between equivalent platform populations. User identity, residence status, and relationship to the site were not inferred from platform affiliation alone. When posts or comments contained explicit textual cues, such as self-identification as homeowners, residents, nearby users, visitors, photographers, or explorers, these cues were used only to interpret the author's relationship to the site. When such cues were absent, the text was interpreted at the level of platform-contextual discourse rather than assigned to a specific stakeholder category. Therefore, "visitor-oriented" and "community-oriented" refer to dominant communicative contexts in the corpus, not verified demographic categories for every individual user. Following this platform-sensitive understanding of UGC [76], the two datasets were therefore processed, analyzed, and interpreted as separate corpora throughout the study. The purpose was not to compare Rednote and the WeChat public platform as equivalent demographic samples, but to examine how different platform contexts make different dimensions of public value perception visible. Accordingly, word-frequency analysis, semantic network analysis, and sentiment analysis were conducted separately for the two corpora, and the results were interpreted in relation to their respective communicative contexts. To ensure data validity and prevent deviation from the research scope, a rule-based filtering and manual verification procedure was applied after data collection. In addition, these known differences in platform functions and likely user composition were treated as a source of selection bias and as part of the interpretive context. In particular, Rednote's image–text, influencer, and peer-recommendation ecology and its younger, more female-skewed user community may make visual and experiential expressions more visible, whereas comments under local WeChat public accounts may make community and governance concerns more visible. Because user-level demographic data were unavailable, the separate-corpus design does not control for demographics and does not attribute the observed differences to platform effects.

Prior to the word-frequency analysis, a document-level relevance coding procedure was conducted to avoid conflating general discussions of Guanggang New Town with public perceptions of urban industrial heritage. Each retained sample was coded according to

its primary discussion object. Three categories were used: (1) industrial heritage-centered texts, which explicitly referred to industrial remains, factory buildings, blast furnaces, railways, docks, ruins, industrial history, workers' memory, or industrial heritage value; (2) park/regeneration-centered texts, which focused on Guanggang Park, Central Park, access, construction progress, safety, public facilities, landscape design, demolition, preservation, or planning issues directly related to the adaptive reuse of the former industrial site; and (3) general Guanggang New Town texts, which referred only to real estate, residential life, commercial facilities, or general urban development without a substantive connection to the industrial heritage site or its regeneration. Only samples in categories (1) and (2) were retained for the final analysis, because they directly addressed either the heritage remains themselves or the ongoing conservation and adaptive reuse process through which the industrial heritage is being transformed into public space. Samples in category (3) were excluded from the analytical corpus. Two authors independently coded the samples, and disagreements were resolved through discussion. The coding results are reported in Table 1.

Table 1. Composition and analytical relevance of the UGC corpus.

Data Source	Initial Records Retrieved	Exclusion and Scope Control	Final Valid Samples	Text Volume	Analytical Relevance to Urban Industrial Heritage
Rednote	2591 posts	Posts with insufficient text length, vague or non-substantive content, real-estate advertisements, duplicate records, and irrelevant samples referring to other industrial heritage sites were excluded.	219 posts	34,887 Chinese characters	The retained Rednote posts were mainly related to Guanggang ruins, industrial remains, factory buildings, industrial aesthetic, photography, exploration, and visiting experiences. They were therefore used to identify visitor-oriented perceptions of the visual, experiential, and cultural value of the industrial heritage site.
WeChat public platform	23 public-account articles and 533 associated comments	Comments without substantive content were excluded. The retained comments came from publicly accessible local public accounts related to Guanggang Park, Guanggang New Town, and Guanggang industrial heritage.	526 comments	16,572 Chinese characters	The retained WeChat comments mainly addressed park construction, access, safety, public facilities, planning, preservation, demolition, and residents' expectations. They were therefore used to identify community-oriented perceptions of the conservation and adaptive reuse of the former industrial site.
Total	Not applicable	Not applicable	745 valid samples	51,459 Chinese characters	The final corpus was not treated as a general corpus about Guanggang New Town. It was used to examine public discourse related either to the industrial heritage remains themselves or to the ongoing transformation of the former industrial site into a public park and regeneration space.

Subsequently, to improve data consistency and analytical reproducibility, all collected texts were preprocessed using a standardized procedure. The preprocessing included six steps: invalid textual element removal; typographical error correction; conversion from traditional Chinese to simplified Chinese; dialectal and colloquial expression stan-

dardization; synonym and near-synonym merging; and text-format unification. Invalid textual elements, including emojis, web links, user mentions, platform tags, and duplicated punctuation, were removed. Obvious typographical errors were corrected only when the intended meaning could be clearly identified from the sentence context.

To ensure consistency in Chinese word segmentation, a customized segmentation dictionary was constructed before the ROST CM 6.0 analysis. The dictionary included site names, industrial heritage terms, material remains, spatial elements, activity-related expressions, and governance-related terms. In addition, a synonym-merging table was developed to standardize lexical variants referring to the same object, behavior, or planning issue. Dialectal and colloquial expressions were standardized only when their meanings were clear and unambiguous; expressions with uncertain meanings were retained in their original form to avoid changing the semantic meaning or emotional orientation of the original texts.

All cleaned texts were converted into .txt format. The final corpus contained 745 valid samples and 51,459 Chinese characters, including 219 Rednote posts and 526 WeChat comments. This corpus served as the textual basis for the subsequent word-frequency analysis, semantic network analysis, and sentiment analysis. To ensure transparency and reproducibility, the representative customized segmentation dictionary, synonym-merging rules, and dialect standardization rules are provided in Supplementary Materials Section S1.

2.4. Research Methods

2.4.1. Word-Frequency Analysis

Word-frequency analysis is derived from content analysis, which Berelson defined as a method for the objective, systematic, and quantitative description of communication content. This method can be used to identify repeatedly occurring core terms in textual data and thereby assess the intensity of public attention toward the study site. In this study, ROST CM 6.0 was used to construct a customized vocabulary list and conduct Chinese word segmentation. Before word segmentation, the customized segmentation dictionary and synonym-merging table described in Supplementary Materials Section S1 were imported into ROST CM 6.0. This procedure was used to reduce segmentation errors and ensure that key heritage-related terms, place names, spatial elements, and colloquial expressions were consistently identified across the two platform corpora. High-frequency terms in Rednote posts and WeChat comments were then calculated separately. The thresholds of $\geq$10 occurrences for Rednote texts and $\geq$6 occurrences for WeChat comments were used as descriptive reporting thresholds rather than statistical cut-off points. The frequency tables report recurrent terms from the cleaned corpus; however, not all listed terms were interpreted as direct evidence of industrial heritage value. Contextual terms such as place names, planned park names, transport facilities, and developer-related words were retained to situate the discourse, while the interpretation focused on terms related to material remains, industrial memory, spatial experience, reuse demands, safety, public facilities, and governance responsiveness. In this study, "check-in" refers to the social media practice of recording, photographing, and sharing a visit, rather than a digital access requirement for entering the park. On this basis, the main perceptual content expressed by the public regarding the value elements, spatial experiences, and reuse demands of the Guanggang industrial heritage site was extracted.

2.4.2. Semantic Network Analysis

Semantic network analysis was used to identify the co-occurrence structure between recurrent terms in the two platform corpora. After word segmentation, synonym merging, and stop word removal, the recurrent terms identified in the word-frequency analysis were

used as network nodes. Co-occurrence was defined within the same post or comment: when two retained terms appeared in the same textual unit, a semantic association between them was recorded by ROST CM 6.0. The connection strength shown in the visual network represents the relative frequency of co-occurrence generated by the software rather than a manually assigned relationship.

The Rednote and WeChat corpora were processed separately to avoid conflating different platform-contextual discourse structures. Generic stop words, function-like words, emojis, platform tags, user mentions, duplicated punctuation, and non-substantive expressions were removed before network construction. The customized segmentation dictionary and synonym-merging rules described in Supplementary Materials Section S1 were used to ensure the consistent identification of place names, heritage-related terms, spatial elements, activity-related expressions, and governance-related terms. In this study, the semantic network graphs were used as descriptive co-occurrence visualizations to identify core semantic associations and recurrent interpretive pathways. Because the ROST CM 6.0 output used in this study did not provide a standardized export of complete edge lists for calculating comparable network metrics, the analysis does not make formal claims based on centrality, density, modularity, or clustering coefficients. Instead, the interpretation focuses on visually identifiable co-occurrence patterns and is cross-checked with the word-frequency results and representative textual meanings. This descriptive scope is sufficient for the present research objective because the analysis asks which value associations recur within each platform corpus, not whether the two networks differ statistically in topology. A formal structural comparison would require reproducible complete edge-list exports and common pruning thresholds, which were not available for the present dataset.

2.4.3. Sentiment Analysis

Sentiment analysis was used as a descriptive method for identifying the corpus-level distribution of lexicon-based sentiment categories in UGC texts. Following previous work on textual sentiment classification [83], this study used the sentiment analysis module of ROST CM 6.0 to classify each text as positive, neutral, or negative. ROST CM 6.0 applies a lexicon-based Chinese sentiment classification procedure and reports both polarity categories and sentiment-intensity scores. In this study, the automated results were used to compare platform-contextual emotional tendencies rather than to make psychological claims about individual users.

To improve the reliability of the sentiment results, a manual validation procedure was added. A stratified validation subset of 150 texts, accounting for 20.1% of the full corpus, was sampled according to platform source and ROST-generated sentiment category. The subset included 44 Rednote texts and 106 WeChat public platform comments. Two authors independently coded the sampled texts as positive, neutral, or negative according to the dominant emotional orientation expressed in the whole text. The validation subset and coding criteria are provided in Supplementary Materials Section S2. The automated ROST results were therefore interpreted together with representative text excerpts, rather than treated as self-evident outputs. Manual validation improves confidence in category consistency within the sampled texts, but it does not convert lexicon-based classifications into direct measurements of individual attitudes or population-level sentiment.

3. Results

3.1. Differential Distribution of Value Elements in Public Attention

The word-frequency results showed clear differences in public attention to the Guanggang industrial heritage site across the two platforms, but these results should be interpreted within the defined corpus boundary. The retained Rednote posts mainly addressed

Guanggang ruins, industrial remains, factory buildings, industrial aesthetics, photography, exploration, and visiting experiences; therefore, they were used to identify visitor-oriented perceptions of the visual, experiential, and cultural value of the industrial heritage site. In this corpus, 111 high-frequency terms with frequencies equal to or greater than 10 were extracted. Among them, "Guangzhou," "Ruins," "Guanggang," "Guanggang New Town," "photography," "Central Park," and "Exploration" ranked highly, corresponding to the site location, spatial image, user activities, and future reuse scenarios (Table 2). General Guanggang New Town texts without a substantive connection to the industrial heritage site or its regeneration were excluded before analysis; therefore, terms such as "Guanggang New Town" and "Central Park" were interpreted not as generic urban development or park discourse but as expressions related to the transformation of the former industrial site into a publicly accessible regeneration space. To improve readability, Tables 2 and 3 report the 30 highest-frequency terms in each corpus. The complete threshold-based outputs are provided in Supplementary Materials Section S3 Tables S7 and S8 for transparency, while the interpretation remains focused on terms with direct analytical relevance to heritage value, spatial experience, reuse, safety, public facilities, and governance.

Table 2. Thirty highest-frequency terms in Rednote texts.

Key Words	Frequency	Sort	Key Words	Frequency	Sort
1	Guangzhou	302	16	Park	39
2	Ruins	300	17	Check-in	37
3	Guanggang	273	18	The Ruins of Guangzhou Steel	35
4	Guanggang New Town	144	19	History	35
5	Photograph	111	20	Era	32
6	Central Park	103	21	Hedong	31
7	Adventure	90	22	Safety	31
8	Discarded	77	23	Enter	31
9	Industry	66	24	Renovation	28
10	Historic relics	58	25	Guangzhou Steel Plant	27
11	Photo shoot	51	26	Railway	27
12	Local	49	27	Factory	25
13	Filming	44	28	Industrial Style	24
14	Architecture	42	29	Explore	24
15	Note	40	30	Time	23

Table 3. Thirty highest-frequency terms in WeChat public-account comments.

Key Words	Frequency	Sort	Key Words	Frequency	Sort
1	Park	131	16	Build	22
2	Guanggang	110	17	Finished	22
3	Homeowner	58	18	Residents	22
4	Construction	44	19	Time	21
5	Planning	44	20	No	19
6	Junk	34	21	Survey	18
7	Government	33	22	Delay	18
8	Guanggang Park	33	23	Guanggang New Town	18
9	Liwan	30	24	Collect	18
10	Central Park	30	25	All	17
11	Comments	27	26	Developers	17
12	Hurry up	26	27	Complaints	16
13	Rags	26	28	Start	16
14	Oppose	24	29	Plans	16
15	Start	23	30	Completion	15

In terms of lexical attributes, the high-frequency terms in the Rednote texts can be classified into three categories (Figure 3). The first category comprises heritage-resource perception terms, including "Ruins", "Historic relics", "Railway", and "Factory buildings", which reflected users' direct recognition of Guanggang's material remains. Meanwhile, terms such as "History", "Era", and "Memories" indicated that some users also associated the site with industrial history and collective memory. The second category consists of spatial-atmosphere perception terms, including "Industrial style", "Dark", "Mystery", and "Danger". These terms showed that the large-scale industrial structures, exposed steel components, mottled material textures, and partially inaccessible condition of the Guanggang remains constituted important sources of place attraction. The third category includes activity-related terms, such as "Photography," "Photo shoot," "Exploration," and "Check-in." These terms indicated that Rednote users' expressions of heritage value were strongly mediated by experiential practices, including entering, viewing, photographing, and sharing the site. Taken together, the Guanggang industrial heritage site was primarily constructed on Rednote as an urban space with ruin aesthetics, image-based dissemination value, and exploratory experiential value.



Figure 3. Word cloud of Rednote texts related to the Guanggang industrial heritage site.

In contrast, comments on the WeChat public platform showed a different structure of public attention. A total of 92 high-frequency terms with frequencies equal to or greater than six were extracted from this platform (Table 3). Terms such as "Park," "Guanggang," "Property owners," "construction," "planning," "scrap metal," and "government" appeared frequently. Unlike Rednote users, who focused more on spatial experience, WeChat public platform comments more often contained community-related cues, including references to homeowners, residents, construction progress, public facilities, and living environment. Specifically, "Park" appeared 131 times, "Homeowner" 58 times, "Construction" and "Planning" 44 times each, and "Government" 33 times. These results indicate that the core of public discussion on this platform was not the heritage landscape itself, but whether heritage regeneration could be transformed into a usable, accessible public space capable of improving everyday living conditions. Table 3 reports the 30 highest-frequency terms; the complete threshold-based list is provided in Supplementary Materials Section S3, Table S7.

Further analysis showed that the high-frequency terms in the WeChat comments could also be classified into three categories (Figure 4). The first category comprises heritage-resource evaluation terms, including "Historic relics", "Industrial Heritage Sites",

"Buildings", "History," and "Culture." These terms indicate that surrounding communities were not entirely unaware of Guanggang's industrial heritage attributes. However, "Junk" appeared 34 times, and "Rags" appeared 26 times, showing that some residents held negative views toward the aesthetic value and necessity of retaining large industrial structures. The second category consists of conservation and reuse demand terms, including "Planning", "Construction", "Government", "Developer", "Demolition", "Preservation", "Design", "Landscaping", "Court," and "Lawn." These terms reflect specific public expectations regarding the mode of site regeneration, spatial functions, and landscape configuration. The third category includes emotion- and governance-process-related terms, such as "Hurry up", "Delay", "Complaints", "Hustle," and "Excuses." These terms indicate strong public dissatisfaction with the slow progress of the project and insufficient communication and feedback mechanisms. Taken together, the Guanggang industrial heritage site was more commonly understood on WeChat public platform within the contexts of community life, public facilities, and regeneration governance. The terms "Junk" and "Rags" are retained as context-checked literal translations of negative colloquial descriptors in the source comments; they are not treated as analytical categories.



Figure 4. Word cloud of WeChat public-account comments related to the Guanggang industrial heritage site.

3.2. Structural Associations and Core Pathways of Heritage Value Perception

The semantic network analysis was used as a descriptive co-occurrence visualization to identify recurrent semantic pathways between terms rather than to calculate formal network centrality or community-detection metrics. No quantitative network indicators are reported because the available ROST CM 6.0 output did not provide a reproducible complete edge list. Accordingly, the figures are used only to trace recurrent within-corpus associations and are triangulated with word frequencies and representative texts; they do not support centrality rankings or cross-platform topological comparisons. In the Rednote corpus (Figure 5), ruin-related terms were connected with photography, exploration, entry, and industrial-atmosphere terms, forming a visual–experiential pathway. In the WeChat public-account corpus(Figure 6), Guanggang- and park-related terms were connected with residents, planning, construction, government, public facilities, and safety, forming a reuse- and governance-oriented pathway. Around the Rednote associations, behavioral terms such as "Photograph," "Check-in," "Exploration," "Enter," and "Note" were linked with spatial-atmosphere terms such as "Factory buildings," "Industrial style," and "Mystery."

In the WeChat public-account associations, terms such as "Residents," "Homeowner," "Government," "Planning," "Preservation," "Central Park," and "Hurry up" connected site discussion with reuse, public service, and governance concerns.

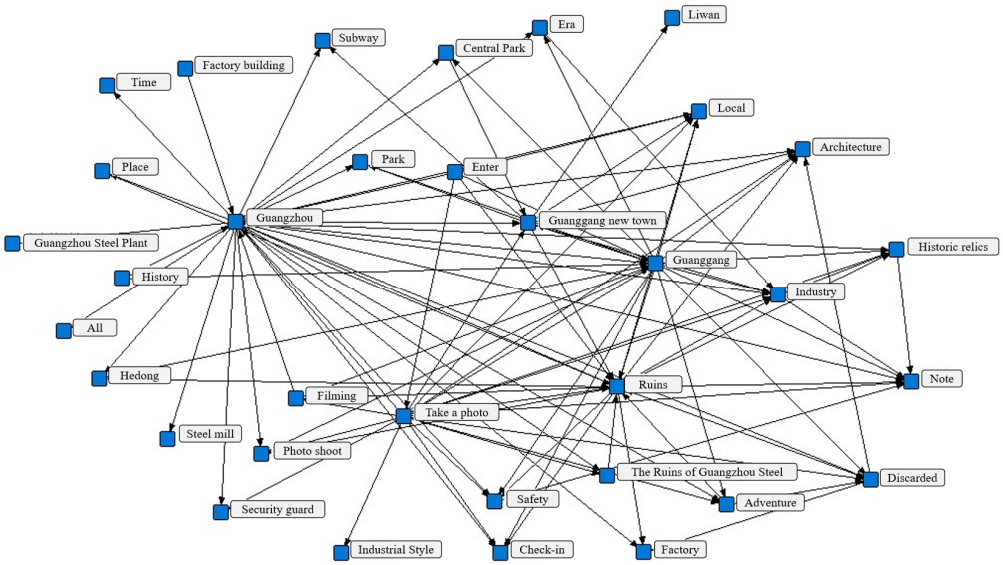


Figure 5. Descriptive co-occurrence visualization of Rednote texts. The figure identifies recurrent within-corpus associations; node prominence is not interpreted as a formal centrality ranking.

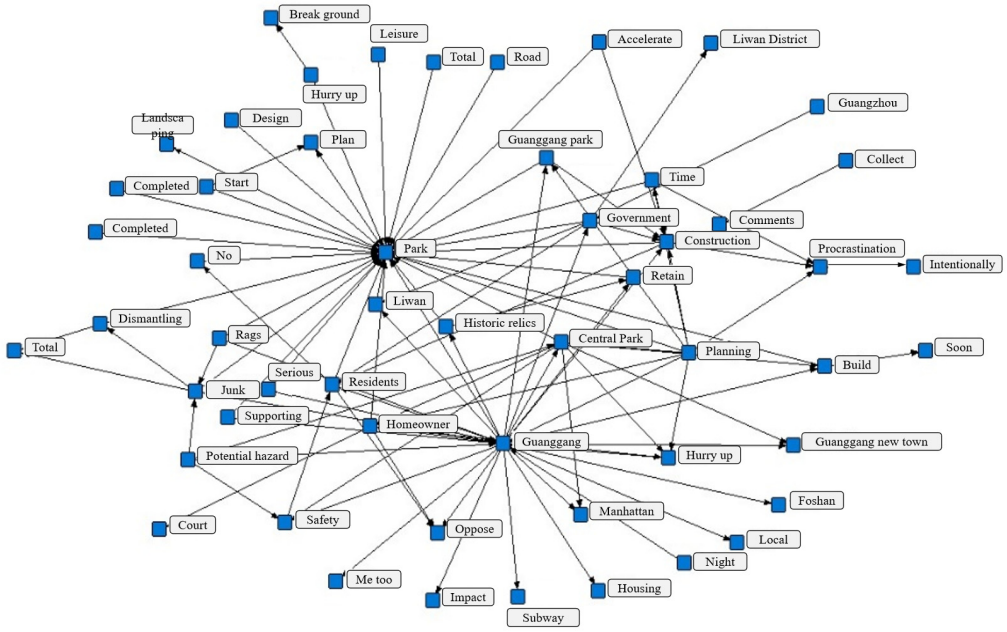


Figure 6. Descriptive co-occurrence visualization of WeChat public-account comments. The figure identifies recurrent within-corpus associations; no cross-platform topological comparison is claimed.

3.3. Corpus-Level Patterns of Lexicon-Based Sentiment Classification

The sentiment analysis showed that the Rednote texts were dominated by positive and neutral sentiment. Specifically, 101 texts were classified as positive, accounting for 46.12%; 88 texts were classified as neutral, accounting for 40.18%; and 30 texts were classified as negative, accounting for 13.70%. Within the positive category, slightly positive, moderately positive, and highly positive sentiment accounted for 18.72%, 12.33%, and 15.07%, respectively. Within the negative category, slightly negative, moderately negative, and highly negative sentiment accounted for 6.39%, 3.20%, and 4.11%, respectively. Overall,

negative sentiment accounted for a relatively small proportion of the Rednote texts, while positive sentiment represented the largest category (Table 4). The sentiment distribution of WeChat public platform comments differed from that of Rednote (Table 5). Among the WeChat comments, 206 texts were classified as negative, accounting for 39.16%; 171 texts were classified as positive, accounting for 32.51%; and 149 texts were classified as neutral, accounting for 28.33%. Within the negative category, slightly negative, moderately negative, and highly negative sentiment accounted for 27.57%, 9.70%, and 1.90%, respectively. Within the positive category, slightly positive, moderately positive, and highly positive sentiment accounted for 22.81%, 4.75%, and 4.94%, respectively. Compared with Rednote, WeChat public platform comments contained a higher proportion of negative sentiment, which became the dominant sentiment type on this platform. These percentages describe the distribution of retrieved texts within each corpus; they are not estimates of how individual users, residents, or platform populations feel.

Table 4. Summary of lexicon-based sentiment classification for Rednote texts.

Sentiment Category		Number (Items)	Percentage (%)
Positive		101	46.12
Neutral		88	40.18
Negative		30	13.70
Breakdown of Positive	Slight (0–10 points)	41	18.72
	Moderate (10–20 points)	27	12.33
	High (>20 points)	33	15.07
Breakdown of Negative	Slight (0–10 points)	14	6.39
	Moderate (10–20 points)	7	3.20
	High (>20 points)	9	4.11

Table 5. Summary of lexicon-based sentiment classification for WeChat public-account comments.

Sentiment Category		Number (Items)	Percentage (%)
Positive		171	32.51
Neutral		149	28.33
Negative		206	39.16
Breakdown of Positive	Slight (0–10 points)	120	22.81
	Moderate (10–20 points)	25	4.75
	High (>20 points)	26	4.94
Breakdown of Negative	Slight (0–10 points)	145	27.57
	Moderate (10–20 points)	51	9.70
	High (>20 points)	10	1.90

Representative texts showed that both platforms contained positive and negative evaluations, but the objects of sentiment expression differed (Table 6). Positive evaluations in the Rednote texts often co-occurred with expressions such as “Industrial style”, “Ruins”, “Mood photography”, and “Mottled metallic texture.” Negative evaluations mainly referred to weather conditions, access constraints, and inconvenience during exploration. In WeChat public platform comments, positive evaluations included expectations regarding historical testimony, heritage retention, and the completion of the park. Negative evaluations were concentrated in expressions such as “Junk,” “Safety hazards,” “Hurry up,” and “Empty promises.” These results should therefore be interpreted as platform-contextual emotional patterns rather than as demographic generalizations.

Table 6. Representative UGC excerpts by sentiment category.

Data Source	Positive	Score	Negative	Score
Rednote	Guangzhou Industrial Heritage Site: The Steel Mill. This place has long been a favorite filming location for many photography enthusiasts who love industrial aesthetics, ruins, and atmospheric shots. I'd never had the chance to visit until now, but it's soon set to be transformed into an industrial museum and mixed-use residential complex. Currently surrounded by clusters of commercial and residential buildings, the weathered metal still seems to exude a sense of its former grandeur. Standing here feels quite magical—it's as if I've stepped into a Hayao Miyazaki animation. . .	88	Ruins in Guangzhou: The Ruins of the Abandoned Guangzhou Steel Workers' Activity Center. Exploring the ruins in the pouring rain. Out of 10 weather forecasts predicting rain, it didn't rain nine times—but today it actually did. I had already made plans with my friends, so there was nothing I could do.	−107
WeChat public-account comment	These steel mills are living testaments to history. You should consider yourselves lucky to be able to see them, because once they're demolished, equipment like this will be gone forever—just like historic buildings. You can trust that the designers will do an excellent job of blending history with the modern environment, but it's essential to implement proper safety measures, as these steel structures are extremely old.	32	That so-called park is just a pile of junk; it looks pretty scary at night, especially from the first row where you can see it from the balcony—just a huge, dark void. I didn't like it when I saw it in person.	−32
WeChat public-account comment	When I was six, I went with my father to the ironmaking shop at Guangzhou Steel. The first thing I saw was this massive beast—and it's still standing after forty years. I hope it gets restored and rebuilt soon, so I can bring my elderly father back to see the place where he once worked and dedicated his life.	14	Stop making empty promises and give the residents of the former Guanggang site a livable environment as soon as possible. While the publicity claims it's on par with Manhattan's Central Park, the reality is that the former Guanggang site is now overrun with mosquitoes, desolate, and downright terrifying at night—not to mention a safety hazard.	−21
WeChat public-account comment	We hope that Guanggang Park will truly become a wonderful haven for the people of Guanggang—a place for leisurely strolls, exercise, and cultural enrichment. We hope the operators will give careful consideration to the needs of the public.	46	I agree with the previous comment—those metal frames are so ugly and ruin the feng shui.	−20

4. Discussion

Rather than treating the observed differences as a direct platform effect, this study conceptualizes dual foregrounding as a bounded selection process. The process operates in three linked steps: platform affordances and distribution practices make some forms of expression easier to produce and circulate; users' self-selection and relationships to the site influence which concerns they choose to articulate; and the resulting corpus makes some value dimensions more visible than others [76]. Rednote therefore provides evidence of concerns made visible within an image–text and interest-based environment [84], whereas comments under local WeChat public accounts provide evidence of concerns made visible within issue-focused community information channels [85,86]. Because demographic attributes and algorithmic exposure were not observed, this process is an interpretive model of selective visibility, not a causal model that separates the effects of platform, demographics, and stakeholder position.

It should be noted that this study does not claim that social media discourse has directly shaped formal planning decisions or governance outcomes at the Guanggang industrial heritage site. Rather, UGC is treated as supplementary evidence for identifying public concerns, perceived value conflicts, and unmet demands during an ongoing regeneration process. In this sense, social media posts do not replace formal public participation or value negotiation, but help reveal issues that may not be sufficiently captured through limited official consultation channels. Because Guanggang Park is still under construction, the corpus was not treated as a pure record of industrial heritage appreciation; park-related issues such as access, construction progress, safety, facilities, and residential environment were included only when they were directly linked to the adaptive reuse of the former industrial site. Accordingly, the higher proportion of negative sentiment in the WeChat public platform comments should not be interpreted as a simple platform effect or as evidence that WeChat users were generally more negative. Rather, it reflects the specific communicative context of local public-account discussions, where residents and property owners were more likely to comment on delayed construction, unclear access conditions, safety concerns, public facilities, and insufficient information about the ongoing regeneration process. The sentiment comparison is therefore used only as an approximate corpus-level signal of issue emphasis, not as a direct measure of individual attitudes.

China's current policy framework provides an important institutional background for interpreting this phenomenon [87,88]. The National Industrial Heritage Management Measures emphasize the protection of core industrial remains, the establishment of exhibition and interpretation facilities, public participation, and the integration of industrial heritage use with urban transformation [89]. The national policy on strengthening historical and cultural heritage protection in urban and rural construction further highlights the systematic protection, utilization, and inheritance of historical and cultural resources [90]. Meanwhile, China's urban renewal policy has increasingly shifted from large-scale demolition toward retention-based improvement, public service provision, and respect for residents' willingness [3]. In this policy context, urban industrial heritage is not only a material object to be preserved, but also a governance interface where heritage value, land redevelopment, safety management, public facilities, and residents' everyday interests intersect.

The first observed outcome is visual-cultural foregrounding. Within the Rednote corpus, users who chose to document the Guanggang industrial heritage site through viewing, entering, photographing, and sharing made ruin aesthetics, industrial visuality, exploratory experience, and shareability especially visible [91]. This pattern identifies what the Rednote corpus captures well, but it does not establish that Rednote users as a demographic group inherently value heritage in this way. It also reveals a practical risk: visual interest may remain at the level of image consumption if it is not connected with industrial processes, workers' memory, and Guangzhou's industrial history.

The second observed outcome is livelihood-governance foregrounding [64]. Within the local WeChat public-account corpus, comments about the Guanggang industrial heritage site made park construction, planning progress, government response, safety hazards, greening, sports facilities, roads, lawns, and complaints especially visible. Textual self-identification by some commenters as residents or property owners helps explain why proximity to risks, public service expectations, and trust in the regeneration process entered this corpus [92]. However, the corpus does not establish the residence status or demographic characteristics of every commenter. This localized interpretation is particularly relevant to urban industrial heritage sites located in high-value redevelopment areas in China. Sun and Chen argue that industrial heritage can contribute to sustainable urban regeneration only when it moves beyond aestheticized, commercialized, or creative-park narratives and becomes embedded in the social and spatial restructuring of surrounding

areas [4]. Zhang's study of industrial heritage in China's mega-events also shows that industrial heritage practices are often shaped by state-led governance and entangled with capital accumulation, urban regeneration, and heritage preservation [3]. The Guanggang industrial heritage site supports these observations but provides finer-grained evidence from public discourse. When planning schemes are repeatedly adjusted, construction progress remains unclear, and participation channels are limited, public discussion may shift from heritage value itself to government credibility, developer responsibility, promised facilities, and living-environment quality [93].

Taken together, dual foregrounding does not simply mean that multiple factors mediate heritage perception. It specifies how platform affordances and user self-selection filter which already-existing concerns enter each corpus, producing two complementary but partial views of the same regeneration process. Visual-cultural discourse can underrepresent everyday service, safety, and governance concerns, whereas livelihood-governance discourse can underrepresent historical, technological, and interpretive values. Reading the two corpora together can therefore inform strategy design, but it cannot establish the independent causal effects of platform or demographics.

Based on these findings, the proposed strategies were derived from the main platform-mediated concerns identified in the empirical analysis. Rednote foregrounded ruins, industrial aesthetics, photography, exploration, and check-ins, indicating the need to transform visual attention into layered heritage interpretation. WeChat comments focused more on construction progress, access, safety, public facilities, residential environment, and governance response, supporting strategies related to zoned access, community-oriented functional integration, and transparent feedback. Therefore, the following strategies are not generic recommendations, but responses to UGC-based public discourse about heritage value, spatial experience, public use, safety, and governance.

(1) A layered value interpretation system should connect blast furnaces, factory buildings, railways, and docks with steelmaking processes, Guanggang workers' memory, and Guangzhou's industrialization history. This is consistent with the policy emphasis on exhibition, interpretation, industrial culture communication, and public education.
(2) Zoned access should be combined with safety governance. For industrial structures with visual and interpretive value but potential risks, controlled viewing boundaries, photography routes, and accessible platforms should be provided, rather than adopting complete demolition or total closure.
(3) Community-oriented public functions, such as greening, slow-mobility routes, sports fields, children's activity areas, resting seats, and night lighting, should be integrated without damaging core industrial remains. These functions are the social conditions through which industrial heritage can become publicly used and locally supported.
(4) A transparent feedback mechanism should regularly disclose construction progress, retained heritage lists, risk assessments, phased implementation plans, and responses to residents' opinions. Although social innovation has been shown to strengthen the place-based effects of industrial heritage regeneration [94], in the Guanggang case it must be localized through public disclosure, community feedback, and institutional trust. The key to future regeneration is therefore not to choose between "heritage retention" and "community park development," but to rebuild a shared public understanding of industrial heritage value through a process that is interpretable, accessible, usable, safe, and trustworthy.

5. Conclusions

Taking the Guanggang industrial heritage site as a case study, this study examined platform-mediated public discourse about urban industrial heritage value using UGC

texts from Rednote and WeChat public accounts. The retrieved corpora showed distinct emphases. Rednote discourse foregrounded ruin landscapes, industrial aesthetics, photography-based check-ins, and exploratory experiences, whereas WeChat comments emphasized park construction, public facilities, safety, governance responsiveness, and the residential environment. These findings indicate that the retrieved discourse framed urban industrial heritage both as a cultural landscape with visual and communicative appeal and as an emerging public space expected to be accessible, usable, safe, and responsive to community needs.

This study advances the understanding of platform-mediated public value discourse in urban industrial heritage by conceptualizing dual foregrounding as a bounded selection process rather than a platform-driven causal mechanism. The process links platform affordances, user self-selection, and relationships to the site with the selective visibility of value concerns in each corpus. In this case, Rednote discourse made visuality, exploratory experience, and shareability especially visible, whereas local WeChat public-account discourse made usability, risk, and governance responsiveness especially visible. Because demographic variables and algorithmic exposure were not observed, the finding specifies the interpretive value and blind spots of each data source rather than attributing the differences to platform alone.

Methodologically, this study shows that, for heterogeneous platform data in this case, separate analysis was necessary to avoid conflating visitor-oriented visual discourse with community-oriented regeneration discourse. By separately analyzing Rednote and WeChat public platform data, this study reveals how different platform contexts make different value dimensions visible. The combined use of word-frequency analysis, semantic network analysis, and sentiment analysis provides an integrated approach for identifying public attention, semantic associations, and approximate corpus-level sentiment patterns in urban heritage regeneration.

The findings suggest that industrial heritage conservation and adaptive reuse should move beyond the simple retention of physical remains or the creation of post-industrial landscape imagery. Historical, technological, and aesthetic values need to be translated into public values that can be understood, accessed, used, and trusted. For the Guanggang industrial heritage site and comparable cases, this requires layered value interpretation, zoned access combined with safety governance, community-oriented functional integration, and transparent feedback mechanisms. In this sense, the key challenge is not to choose between "heritage retention" and "community park development," but to coordinate heritage value, everyday use, public service provision, and community trust.

This study also has limitations. Because the Guanggang industrial heritage site has not yet been fully opened, the perceptions identified in this study reflect the project implementation stage rather than long-term evaluations after mature operation. Publication-date metadata were not consistently available across all retrieved records; therefore, the earliest publication year cannot be verified and the corpus cannot support a time-series interpretation. In addition, the two platform datasets cannot represent all stakeholder groups involved in the regeneration process. Platform affiliation cannot by itself verify user identity, age, gender, residence status, or stakeholder category. Rednote texts tend to reflect visitor-oriented and image-sharing practices, whereas WeChat public platform comments mainly reflect users who follow local public accounts and are willing to comment on community issues. The perspectives of former factory workers who are not active online, elderly residents, silent residents, internal planners, developers, and administrative actors may be underrepresented. Future research should combine UGC analysis with a survey-linked or consent-based sample that records age, gender, residence status, relationship to the site, and platform-use intensity. Multivariable models or matched comparisons could then

separate demographic composition and stakeholder position from platform context, while interviews, field observation, and stakeholder consultation could examine how public value perception is translated into formal participation and governance processes. Although manual validation improves confidence in category consistency, lexicon-based classification may still miss irony, mixed emotions, and context-dependent meanings; sentiment percentages should therefore not be read as direct measurements of individual attitudes.

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Abbreviations

The following abbreviations are used in this manuscript:

UIH	Urban industrial heritage
UGC	User-generated content

References

1. Zhang, J.; Sun, H.; Xu, S.; Aoki, N. Analysis of the spatial and temporal distribution and reuse of urban industrial heritage: The case of Tianjin, China. *Land* **2022**, *11*, 2273. [CrossRef]
2. Wei, Y.; Yuan, H.; Li, H. Exploring the contribution of advanced systems in smart city development for the regeneration of urban industrial heritage. *Buildings* **2024**, *14*, 583. [CrossRef]
3. Zhang, M. The state-led approach to industrial heritage in China's mega-events: Capital accumulation, urban regeneration, and heritage preservation. *Built Herit.* **2024**, *8*, 30. [CrossRef]
4. Sun, M.; Chen, C. Renovation of industrial heritage sites and sustainable urban regeneration in post-industrial Shanghai. *J. Urban Aff.* **2023**, *45*, 729–752. [CrossRef]
5. Wu, Y.; Han, F. Reconfiguring abandoned urban landscapes: A multidimensional place-making approach towards sustainable transformation of industrial waterfronts. *Landsc. Ecol. Eng.* **2025**, *21*, 175–190. [CrossRef]
6. Huang, C.-W.; McDonald, R.I.; Seto, K.C. The importance of land governance for biodiversity conservation in an era of global urban expansion. *Landsc. Urban Plan.* **2018**, *173*, 44–50. [CrossRef]
7. Wansborough, M.; Mageean, A. The role of urban design in cultural regeneration. *J. Urban Des.* **2000**, *5*, 181–197. [CrossRef]
8. Muminovic, M. Place identity and sustainable urban regeneration: Public space in Canberra City Centre. *Int. J. Sustain. Dev. Plan.* **2017**, *12*, 734–743. [CrossRef]
9. Wang, X.; Ren, H.; Wang, P.; Yang, R.; Luo, L.; Cheng, F. A preliminary study on Target 11.4 for UN sustainable development goals. *Int. J. Geoheritage Parks* **2018**, *6*, 18–24. [CrossRef]
10. Carlsen, L.; Bruggemann, R. The 17 United Nations' sustainable development goals: A status by 2020. *Int. J. Sustain. Dev. World Ecol.* **2022**, *29*, 219–229. [CrossRef]
11. De Gregorio, S.; De Vita, M.; De Berardinis, P.; Palmero, L.; Risdonne, A. Designing the sustainable adaptive reuse of industrial heritage to enhance the local context. *Sustainability* **2020**, *12*, 9059. [CrossRef]
12. Zhang, Q.; Ali, Z.M.; Abidin, N.Z. Sustainable adaptive reuse of historic buildings: Development of a framework from systematic review. *npj Herit. Sci.* **2025**, *13*, 619. [CrossRef]

13. Nocca, F. The role of cultural heritage in sustainable development: Multidimensional indicators as decision-making tool. *Sustainability* **2017**, *9*, 1882. [CrossRef]
14. Fusco Girard, L.; Nocca, F. Moving towards the circular economy/city model: Which tools for operationalizing this model? *Sustainability* **2019**, *11*, 6253. [CrossRef]
15. Mehan, A. Adaptive reuse as a catalyst for post-2030 urban sustainability: Rethinking industrial heritage beyond the SDGs. *Discov. Sustain.* **2025**, *6*, 598. [CrossRef]
16. Chen, J.; Ren, K.; Li, P.; Wang, H.; Zhou, P. Toward effective urban regeneration post-COVID-19: Urban vitality assessment to evaluate people preferences and place settings integrating LBSNs and POI. *Environ. Dev. Sustain.* **2026**, *28*, 10047–10070. [CrossRef]
17. Xie, P.F. *Industrial Heritage Tourism*; Channel View Publications: Bristol, UK, 2015; Volume 43.
18. Douet, J. *Industrial Heritage Re-Tooled: The TICCIH Guide to Industrial Heritage Conservation*; Routledge: London, UK, 2016.
19. Mason, R. Be interested and beware: Joining economic valuation and heritage conservation. *Int. J. Herit. Stud.* **2008**, *14*, 303–318. [CrossRef]
20. Apaydin, V. Heritage values and communities: Examining heritage perceptions and public engagements. *J. East. Mediterr. Archaeol. Herit. Stud.* **2017**, *5*, 349–364. [CrossRef]
21. Lennox, R. Heritage and Politics in the Public Value Era: An Analysis of the Historic Environment Sector, the Public, and the State in England Since 1997. Ph.D. Thesis, University of York, York, UK, 2016.
22. Wang, Q.; Ma, P.; Wang, Y. Sustainable Heritage Tourism in Transition: Policy, Space, and Authenticity in a UNESCO World Heritage Site. *Sustainability* **2025**, *17*, 9619. [CrossRef]
23. Murzyn-Kupisz, M.; Działek, J. Cultural heritage in building and enhancing social capital. *J. Cult. Herit. Manag. Sustain. Dev.* **2013**, *3*, 35–54. [CrossRef]
24. Coffey, B. Environmental challenges for public value theory and practice. *Int. J. Public Adm.* **2021**, *44*, 818–825. [CrossRef]
25. Nabatchi, T. Public values frames in administration and governance. *Perspect. Public Manag. Gov.* **2018**, *1*, 59–72. [CrossRef]
26. Gallarza, M.G.; Gil, I. The concept of value and its dimensions: A tool for analysing tourism experiences. *Tour. Rev.* **2008**, *63*, 4–20. [CrossRef]
27. Silva, M.G.e.; Remoaldo, P.; Luíza Peluso, M. Human values and tourism perception: A new approach in residents' perceptions. *Curr. Issues Tour.* **2025**, *28*, 353–358. [CrossRef]
28. Yacoub, L.; ElHajjar, S.; Zgheib, Y.; Al Maalouf, N.J. Understanding perceived value in tourism: Insights from destinations facing crises. *PLoS ONE* **2025**, *20*, e0331144. [CrossRef]
29. Benington, J.; Moore, M. *Public Value: Theory and Practice*; Bloomsbury Publishing: London, UK, 2010.
30. Hartley, J.; Alford, J.; Knies, E.; Douglas, S. Towards an empirical research agenda for public value theory. *Public Manag. Rev.* **2017**, *19*, 670–685. [CrossRef]
31. Wang, Z.; Sheng, K.; Li, D.; Man, T.; Zhang, X.; He, Y.; Zhou, Q.; He, G. Cultural topography of publicness: Assessment of the publicness of public spaces in traditional settlements. *PLoS ONE* **2025**, *20*, e0332755. [CrossRef] [PubMed]
32. Wei, W.; Heerema, H.; Rushfeld, R.; van der Lee, I. Issues in Conservation—Three Value Moments in the Public Perception of Cultural Heritage Objects in Public Spaces. *Collabra Psychol.* **2021**, *7*, 21935. [CrossRef]
33. Díaz-Andreu, M. Heritage values and the public. *J. Community Archaeol. Herit.* **2017**, *4*, 2–6. [CrossRef]
34. Szmelter, I. New values of cultural heritage and the need for a new paradigm regarding its care. In *CeROArt. Conservation, Exposition, Restauration d'Objets d'Art*; Association CeROArt asbl: Micheroux, Belgium, 2013.
35. Stedman, R.C. Toward a social psychology of place: Predicting behavior from place-based cognitions, attitude, and identity. *Environ. Behav.* **2002**, *34*, 561–581. [CrossRef]
36. Li, M.; Yan, Y.; Ying, Z.; Zhou, L. Measuring villagers' perceptions of changes in the landscape values of traditional villages. *ISPRS Int. J. Geo-Inf.* **2024**, *13*, 60. [CrossRef]
37. Wang, D.; Li, S. Social conflicts and their resolution paths in the commercialized renewal of old urban communities in China under the perspective of public value. *J. Urban Manag.* **2025**, *14*, 402–417. [CrossRef]
38. Lu, X.; Tan, D.; Zhou, Y.; Xie, Y.; Chen, Z. Traditional village perception and protection behavior: The mediating role of local identity and the impact of different population differences. *J. Asian Archit. Build. Eng.* **2025**, *24*, 5104–5121. [CrossRef]
39. Quintana, D.C.; Díaz-Puente, J.M.; Gallego-Moreno, F. Architectural and cultural heritage as a driver of social change in rural areas: 10 years (2009–2019) of management and recovery in Huete, a town of Cuenca, Spain. *Land Use Policy* **2022**, *115*, 106017. [CrossRef]
40. Merchán, M.J.; Merchán, P.; Pérez, E. Good practices in the use of augmented reality for the dissemination of architectural heritage of rural areas. *Appl. Sci.* **2021**, *11*, 2055. [CrossRef]
41. Ozorhon, I.F.; Ozorhon, G. Rural architecture and sustainability: Learning from the past. *J. Asian Rural Stud.* **2021**, *5*, 30–47. [CrossRef]
42. Wang, Z.; Zhou, Q.; Man, T.; He, L.; He, Y.; Qian, Y. Delineating landscape features perception in tourism-based traditional villages: A case study of Xijiang thousand households Miao village, Guizhou. *Sustainability* **2024**, *16*, 5287. [CrossRef]
43. Taylor, K.; Lennon, J. Cultural landscapes: A bridge between culture and nature? *Int. J. Herit. Stud.* **2011**, *17*, 537–554. [CrossRef]

44. Settimini, E. Cultural landscapes: Exploring local people's understanding of cultural practices as "heritage". *J. Cult. Herit. Manag. Sustain. Dev.* **2021**, *11*, 185–200. [CrossRef]
45. Liu, Y.; Dupre, K.; Jin, X. A systematic review of literature on contested heritage. *Curr. Issues Tour.* **2021**, *24*, 442–465. [CrossRef]
46. Goluža, M.; Bole, D. From nostalgia to disdain: The contested role of industrial heritage narratives in legitimising post-industrial urban transformation. *Urban Res. Pract.* **2026**, *19*, 291–313. [CrossRef]
47. Liu, Y. Space reproduction in urban China: Toward a theoretical framework of urban regeneration. *Land* **2022**, *11*, 1704. [CrossRef]
48. Winter, T. Heritage studies and the privileging of theory. *Int. J. Herit. Stud.* **2014**, *20*, 556–572. [CrossRef]
49. Fouseki, K. *Heritage Dynamics*; UCL Press: London, UK, 2022.
50. Farashah, M.D.P.; Ghaderi, Z.; Kaya, E. Identity construction and collective memory: A critical heritage study of Łódź's post-industrial legacy. *Cities* **2026**, *170*, 106743. [CrossRef]
51. Smith, L.; Campbell, G. 'Nostalgia for the future': Memory, nostalgia and the politics of class. *Int. J. Herit. Stud.* **2017**, *23*, 612–627. [CrossRef]
52. Bangstad, T.R. Industrial heritage and the ideal of presence. In *Ruin Memories*; Routledge: London, UK, 2014; pp. 92–106.
53. Li, Y.; Liang, J.; Huang, J.; Shen, H.; Li, X.; Law, A. Evaluating tourist perceptions of architectural heritage values at a World Heritage Site in South-East China: The case of Gulangyu Island. *J. Hosp. Tour. Manag.* **2024**, *60*, 127–140. [CrossRef]
54. Chen, H.; Zhou, Y.; Zhang, P. Value Perception and Willingness to Pay for Architectural Heritage Conservation: Evidence from Kumbum Monastery in China. *Buildings* **2025**, *15*, 1295. [CrossRef]
55. Meng, X.; Chang, J. Sustainable reuse evaluation framework for coastal industrial living preservation of heritage buildings based on visual perception driven. *Sci. Rep.* **2025**, *15*, 35859. [CrossRef] [PubMed]
56. Xie, P.F. A life cycle model of industrial heritage development. *Ann. Tour. Res.* **2015**, *55*, 141–154. [CrossRef]
57. Liu, F.; Zhao, Q.; Yang, Y. An approach to assess the value of industrial heritage based on Dempster–Shafer theory. *J. Cult. Herit.* **2018**, *32*, 210–220. [CrossRef]
58. Humphrey-Murto, S.; Wood, T.J.; Gonsalves, C.; Mascioli, K.; Varpio, L. The delphi method. *Acad. Med.* **2020**, *95*, 168. [CrossRef]
59. Skulmoski, G.J.; Hartman, F.T.; Krahn, J. The Delphi method for graduate research. *J. Inf. Technol. Educ. Res.* **2007**, *6*, 1–21. [CrossRef]
60. Guo, A.; He, P.; Min, Q.; Xu, S. A fuzzy comprehensive evaluation method for assessing the damage degree of cultural relics based on an improved AHP-EWM coupled weight model and a modified ridge function. *Herit. Sci.* **2024**, *12*, 378. [CrossRef]
61. Nadkarni, R.R.; Puthuvayi, B. A comprehensive literature review of Multi-Criteria Decision Making methods in heritage buildings. *J. Build. Eng.* **2020**, *32*, 101814. [CrossRef]
62. Piñero, I.; San-José, J.T.; Rodríguez, P.; Losáñez, M.M. Multi-criteria decision-making for grading the rehabilitation of heritage sites. Application in the historic center of La Habana. *J. Cult. Herit.* **2017**, *26*, 144–152. [CrossRef]
63. Lowry, P.B.; Gaskin, J. Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. *IEEE Trans. Prof. Commun.* **2014**, *57*, 123–146. [CrossRef]
64. Xu, H.; Cheung, L.T.; Lovett, J.; Duan, X.; Pei, Q.; Liang, D. Understanding the influence of user-generated content on tourist loyalty behavior in a cultural World Heritage Site. *Tour. Recreat. Res.* **2023**, *48*, 173–187. [CrossRef]
65. Guerra, T.; Moreno, P.; de Almeida, A.S.A.; Vitorino, L. Authenticity in industrial heritage tourism sites: Local community perspectives. *Eur. J. Tour. Res.* **2022**, *32*, 3208. [CrossRef]
66. Berta, M.; Bottero, M.; Ferretti, V. A mixed methods approach for the integration of urban design and economic evaluation: Industrial heritage and urban regeneration in China. *Environ. Plan. B Urban Anal. City Sci.* **2018**, *45*, 208–232. [CrossRef]
67. Oevermann, H.; Degenkolb, J.; Dießler, A.; Karge, S.; Peltz, U. Participation in the reuse of industrial heritage sites: The case of Oberschöneweide, Berlin. *Int. J. Herit. Stud.* **2016**, *22*, 43–58. [CrossRef]
68. Alavi, P.; Sobouti, H.; Shahbazi, M. Adaptive re-use of industrial heritage and its role in achieving local sustainability. *Int. J. Build. Pathol. Adapt.* **2024**, *42*, 1223–1249. [CrossRef]
69. Ashkanasy, N.M.; Härtel, C.E.; Daus, C.S. Diversity and emotion: The new frontiers in organizational behavior research. *J. Manag.* **2002**, *28*, 307–338. [CrossRef]
70. Braun, J.; Gillespie, T. Hosting the public discourse, hosting the public: When online news and social media converge. *J. Pract.* **2011**, *5*, 383–398. [CrossRef]
71. Iosifidis, P. The public sphere, social networks and public service media. *Inf. Commun. Soc.* **2011**, *14*, 619–637. [CrossRef]
72. Santos, M.L.B.d. The "so-called" UGC: An updated definition of user-generated content in the age of social media. *Online Inf. Rev.* **2022**, *46*, 95–113. [CrossRef]
73. Kim, J.; Fesenmaier, D.R. Measuring emotions in real time: Implications for tourism experience design. *J. Travel Res.* **2015**, *54*, 419–429. [CrossRef]
74. Yang, C.; Liu, T. Social media data in urban design and landscape research: A comprehensive literature review. *Land* **2022**, *11*, 1796. [CrossRef]

75. Kim, H.J.; Chae, B.K.; Park, S.B. Exploring public space through social media: An exploratory case study on the High Line New York City. *Urban Des. Int.* **2018**, *23*, 69–85. [CrossRef]
76. Roma, P.; Aloini, D. How does brand-related user-generated content differ across social media? Evidence reloaded. *J. Bus. Res.* **2019**, *96*, 322–339. [CrossRef]
77. Liu, S.; Tan, C.; Deng, F.; Zhang, W.; Wu, X. A new framework for assessment of park management in smart cities: A study based on social media data and deep learning. *Sci. Rep.* **2024**, *14*, 3630. [CrossRef]
78. Hadrian, M.C.; Ratnasari, N.G. The influence of information quality in user-generated content (UGC) behavioral intention to revisit: The mediating role of destination image (a study on Lampung as a tourism object). *Interact. Community Engagem. Soc. Environ.* **2025**, *3*, 1–17. [CrossRef]
79. Correia, R.; Aksionova, E.; Venciute, D.; Sousa, J.; Fontes, R. User-generated content's influence on tourist destination image: A generational perspective. *Consum. Behav. Tour. Hosp.* **2025**, *20*, 167–185. [CrossRef]
80. Mehra, P. Unexpected surprise: Emotion analysis and aspect based sentiment analysis (ABSA) of user generated comments to study behavioral intentions of tourists. *Tour. Manag. Perspect.* **2023**, *45*, 101063. [CrossRef]
81. Yuan, H.; Ke, R.; Xie, X. Sentiment analysis of visitor perceptions on architectural heritage: A case study of Phoenix Ancient Town for sustainable conservation and development. *J. Asian Archit. Build. Eng.* **2025**, 1–16. [CrossRef]
82. Du, L.; Yang, C.; Yan, J. Decoding the continuum of architectural intention and public perception in industrial heritage regeneration: A multimodal social media data analysis. *Habitat Int.* **2026**, *170*, 103754. [CrossRef]
83. Pang, B.; Lee, L.; Vaithyanathan, S. Thumbs up? Sentiment classification using machine learning techniques. In Proceedings of the 2002 Conference on Empirical Methods in Natural Language Processing (EMNLP 2002), Philadelphia, PA, USA, 6–7 July 2002; pp. 79–86.
84. Chen, M.; Peng, A.Y. Why do people choose different social media platforms? Linking use motives with social media affordances and personalities. *Soc. Sci. Comput. Rev.* **2023**, *41*, 330–352. [CrossRef]
85. Zhou, Q.; Wang, S.; Wang, J. Exploring user experience in virtual industrial heritage platforms: Impact of cultural identity, functional clarity, scene interactivity, and narrative quality. *Buildings* **2025**, *15*, 253. [CrossRef]
86. Bertacchini, E.; Frontuto, V. Economic valuation of industrial heritage: A choice experiment on Shanghai Baosteel industrial site. *J. Cult. Herit.* **2024**, *66*, 215–228. [CrossRef]
87. Ginzarly, M.; Teller, J. Online communities and their contribution to local heritage knowledge. *J. Cult. Herit. Manag. Sustain. Dev.* **2021**, *11*, 361–380. [CrossRef]
88. Taylor, J.; Gibson, L.K. Digitisation, digital interaction and social media: Embedded barriers to democratic heritage. *Int. J. Herit. Stud.* **2017**, *23*, 408–420. [CrossRef]
89. Gan, T.; Chen, J.; Yao, M.; Cenci, J.; Zhang, J.; He, Y. Frontier Revitalisation of Industrial Heritage with Urban–Rural Fringe in China. *Buildings* **2024**, *14*, 1256. [CrossRef]
90. Wu, S.-M.; Deng, Y. Typological differentiation and time-series effects of urban renewal on housing prices. *Cities* **2024**, *145*, 104668. [CrossRef]
91. Qu, R.; Zhang, R.; Xu, J. Bodily Realities in Digital Journalism: The Role of User-Generated Content in Embodied Witnessing. *J. Stud.* **2026**, *27*, 651–671. [CrossRef]
92. Zhang, T.; Wei, C.; Nie, L. Experiencing authenticity to environmentally responsible behavior: Assessing the effects of perceived value, tourist emotion, and recollection on industrial heritage tourism. *Front. Psychol.* **2022**, *13*, 1081464. [CrossRef] [PubMed]
93. Wang, X.; Aoki, N. Paradox between neoliberal urban redevelopment, heritage conservation, and community needs: Case study of a historic neighbourhood in Tianjin, China. *Cities* **2019**, *85*, 156–169. [CrossRef]
94. Scaffidi, F. Average social and territorial innovation impacts of industrial heritage regeneration. *Cities* **2024**, *148*, 104907. [CrossRef]

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