

ORIGINAL ARTICLE

Landscape narratives and the spirit of place in urban public space renewal

Yong-Zhen Zhai¹, Ismar Minang Satotoy Usman*, Mazlan Mohd Tahir, and Azreena Abu Bakar

Department of Architecture and Built Environment, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia

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Abstract

Urban public space renewal faces the challenge of maintaining cultural authenticity while accommodating contemporary needs; however, limited research examines how landscape narratives mediate between physical transformation and the spirit of place. This study examines narrative–spirit mechanisms in urban renewal, using Kuanzhai Alley in Chengdu as an empirical case. Mixed methods, including spatial analysis, interviews ($n = 68$), systematic observation, and participatory mapping, examined narrative–spirit relationships from 2003 to 2024. Results identified three narrative categories: social life (70.4%, $n = 38$) with dispersed distribution, historical culture (20.4%, $n = 11$) clustered in heritage zones, and natural ecology (9.3%, $n = 5$) in transitional spaces. Correlation analysis revealed strong associations between narrative types and spirit dimensions—historical narratives with authenticity ($r = 0.82, p < 0.001$) and social narratives with vitality ($r = 0.85, p < 0.001$). Temporal analysis showed synchronized narrative–spirit co-evolution ($R^2 = 0.92$), while spatial analysis identified positive autocorrelation (Moran's $I = 0.101, p < 0.001$). Distance decay functions indicated narrative effectiveness ranges: historical (75 m), social (50 m), and natural ecology (100 m). Multi-stakeholder evaluation revealed differentiated perceptions, with original residents valuing cultural authenticity (4.6/5.0) and tourists prioritizing public facilities (4.5/5.0). Overall renewal assessment improved from 2.7 to 4.2 (+55.6%), confirming successful integration. This research established landscape narratives as critical mediating mechanisms, providing an integrated framework bridging tangible transformation and intangible meanings. Findings offer evidence-based strategies for narrative-informed design interventions, contributing to culturally sustainable urban renewal in Asian cities.

*Corresponding author:

Ismar Minang Satotoy Usman
(ismarms@ukm.edu.my)

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1. Introduction

Urban renewal has been a central approach to resolving issues related to urbanization, thus redefining the public space development that underlines urban growth across the globe (Xia, Zhao, *et al.*, 2024). The urban environment today faces unprecedented challenges related to population growth, economic change, and environmental degradation, requiring novel methods for protecting cultural heritage while meeting current urban demands (Zhang *et al.*, 2024). In that regard, the concepts of landscapes

and place have drawn increasing attention as a central paradigm for understanding how public spaces within the urban environment can continue to be culturally relevant amidst renewal efforts.

This research operationalizes landscape narratives as embedded stories within urban spaces that mediate between physical form and cultural meaning. These narratives are categorized into three distinct types. Social life narratives encompass contemporary activities, commercial interactions, and community gatherings manifested through observable behaviors and spatial usage patterns. Historical culture narratives encompass architectural heritage, collective memory, and traditional practices embedded in building typologies, spatial configurations, and commemorative elements. Natural ecology narratives articulate human–environment relationships through vegetation patterns, water features, and sensory experiences that contribute to the atmosphere of places. These operational definitions enable systematic analysis while acknowledging the overlapping and contested nature of narrative meanings in actual urban spaces.

The conceptual underpinning for this research is based on a range of interdisciplinary perspectives. Recent literature has considered the vertical development and conflicting identities within urban Chinese contexts and reported that urbanization leads to conflicts between traditional spatial arrangements and contemporary urban planning (Pernice, 2021). The transformation transcends physical changes into the emotional aspects of architecture, thus suggesting urban regeneration must affect the physical and intangible attributes of a place (Wei, 2024). Optimal international practices offer a wide range of methodologies for sustainable urban regeneration, where the assessment models take into account the cultural, social, physical, and economic factors (Korkmaz & Balaban, 2020; Lin *et al.*, 2021). The integration of new technology and the use of artificial intelligence into the planning and design of eco-cities make urban renewal processes more complex, posing opportunities and challenges for the retention of place identity (Bibri *et al.*, 2024).

The relationship between urban public spaces and social cohesion has been extensively researched, elucidating how physical spaces affect interactions among communities and contribute to collective identity (Qi *et al.*, 2024). Carmona's (2015) pathbreaking work has revolutionized the conceptualization of contemporary public spaces by presenting new narratives and normative discourses, proposing a more sophisticated understanding of the functioning mechanisms of public spaces within the context of contemporary urban life. This perspective

corresponds to the increasing corpus of work on place-making as a sociocultural process, emphasizing the participatory and communal aspects of designing urban spaces (Akbar & Edelenbos, 2021). The narrative dimension of spatial development has been reflected through diverse case studies, depicting the intersection of storytelling and spatial design in the context of heritage revitalization processes (Yin & Feng, 2024).

At the center of this discussion is the concept of *genius loci*, or the spirit of place, which has evolved from its phenomenological beginnings to serve as a meta-concept for understanding place identity (Lokas *et al.*, 2023; Vecco, 2020). The reconstruction of cultural heritage buildings is an example of the interrelation between place attachment and cultural identity in urban regeneration projects (Chan *et al.*, 2023). Urban settings are reservoirs of collective memory, where official and counter-memories coexist and sometimes battle (Land, 2023). Such a plurality of meanings presents a formidable challenge to traditional approaches to urban renewal, which often privilege physical changes at the cost of cultural continuity.

The existing corpus of scholarly literature identifies significant trends in sense of place discourse, showing a range of theoretical perspectives and methodological stances (Nelson *et al.*, 2020). Urban design research has attempted to make these concepts operational by developing frameworks that link theoretical understandings and applications (Hu & Chen, 2018). Recent studies of place attachment have posed questions about the relative importance of either the physical characteristics or the functional qualities of spaces in the development of meaningful relationships between people and urban settings (Zahnow, 2024). The protection of traditional village cultural heritage within urban renewal contexts presents particular challenges, as rapid urbanization threatens to erase historical spatial patterns and cultural practices (Xia, Gu, *et al.*, 2024). Heritage tourism has emerged as one strategy for conducting urban renewal in historical and cultural spaces, though its implementation raises questions about authenticity and commodification (Lei & Zhou, 2022). Meanwhile, risk-based assessment methods have been developed to evaluate urbanization impacts on cultural heritage, highlighting the need for more sophisticated tools to balance development pressures with conservation imperatives (L. Fu *et al.*, 2023).

Despite extensive research on urban renewal and place attachment, significant gaps remain in understanding how landscape narratives function as mediating mechanisms between physical transformation and the spirit of place preservation (Falanga, 2022). While sociocultural impact

assessments have been developed, they often fail to capture the dynamic and processual nature of place meaning creation (Abdurahiman *et al.*, 2024). Furthermore, although place making has been recognized as crucial for strengthening a community's sense of place, the specific role of narrative construction in this process remains underexplored (Ellery & Ellery, 2019).

This research addressed these gaps by proposing an integrated framework that positions landscape narratives as central to preserving the spirit of place during urban public space renewal. It examined how narrative elements embedded in urban landscapes serve as bridges between the past and present, enabling communities to maintain cultural continuity while adapting to contemporary urban demands. Through a detailed empirical examination of a specific case of urban revitalization, the research elucidated the mechanisms by which landscape narratives evoke place memory, mobilize a community, and guide design interventions that respect the innate genius loci while enabling indispensable urban change. The findings enrich theoretical understanding and applied measures for sustainable urban renewal that take into account the complex relationships among the physical landscape, cultural relevance, and community identity in contemporary urban environments.

2. Materials and methods

2.1. Study area

The Kuanzhai Alley cultural scenic area, located in the Qingyang district of Chengdu, Sichuan province, offers a relevant case study for examining landscape narratives and the qualities of place in the context of urban public space redevelopment. As shown in Figure 1, the historic neighborhood is strategically located in the center of Chengdu's urban area, representing one of the most well-preserved Qing dynasty (1636–1912) residential neighborhoods in southwest China. The study area covers approximately 0.66 square kilometers and consists of three parallel alleys—Kuan (宽, *kuan*; wide) Alley, Zhai (窄, *zhai*; narrow) Alley, and Jing (井, *jing*; well) Alley—each of which has maintained its original spatial structure for more than 300 years.

Modern urban renewal efforts struggle with the dual challenge of balancing health and well-being with sustainability goals, an issue that is especially relevant in historic neighborhoods usually targeted for commercialization (Zhou *et al.*, 2024). The Kuanzhai Alley revitalization project, initiated in 2003 and completed in 2008, achieved the balance between the retention of historic courtyard houses (四合院; *siheyuan*)

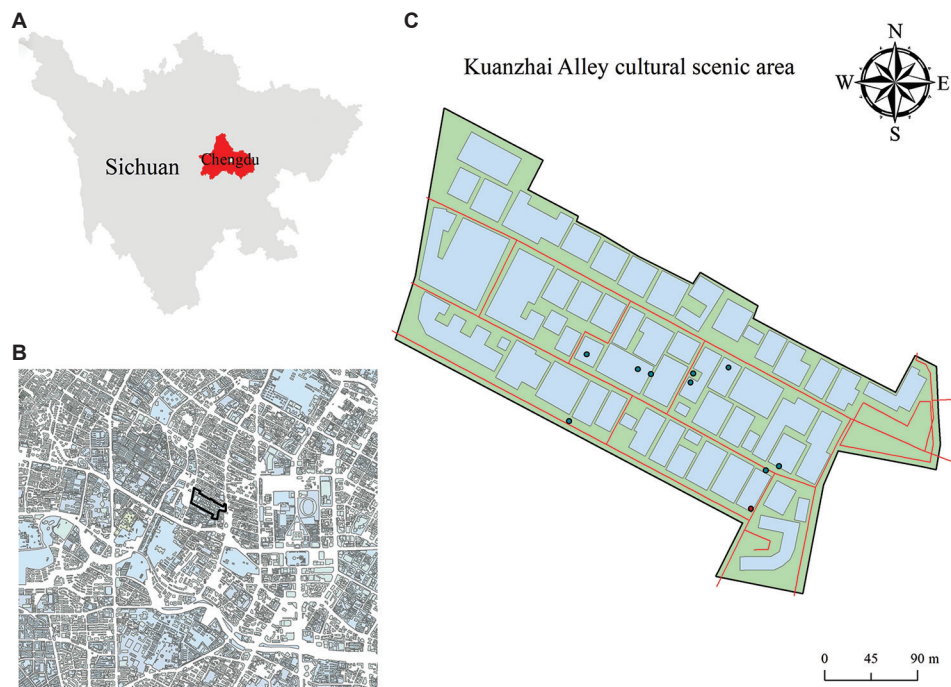


Figure 1. Location and spatial layout of Kuanzhai Alley cultural scenic area in Chengdu, Sichuan province. (A) Location of Chengdu in Sichuan. (B) Location of Kuanzhai Alley in Chengdu. (C) Spatial layout of Kuanzhai Alley. The three parallel alleys—Kuan Alley, Zhai Alley, and Jing Alley—are clearly labeled. Blue areas represent traditional courtyard buildings, while green areas indicate public spaces

Source: Maps adapted from Chengdu Municipal Planning Bureau, 2024

and the redevelopment of the site for contemporary commercial and cultural uses. The unique “fish-bone” street pattern, prominently on view throughout the site design, creates welcoming, pedestrian-friendly spaces that foster social interaction and maintain the essential human scale that revitalization efforts for public spaces require (J. Zhu, 2023).

The urban form found in Kuanzhai Alley represents the ideal of traditional Chinese urban planning, with alleys stretching north–south along a distance of about 400 m. The forms of the buildings suggest a highly interconnected urban fabric punctuated by internal courtyard spaces, thus creating a rhythm of solid and void that dictates the unique spatial experience in the area. The physical setting offers a model context for investigating how traditional urban settings can be used to promote cultural heritage while being supportive of modern urban functions, as well as addressing fundamental questions regarding the provision of affordable housing and social inclusion in heritage-led regeneration (Levine & Yavo Ayalon, 2024).

2.2. Data sources

This research employed a multiscale data collection method to capture the complexity of landscape narratives and the nature of place in the context of urban public space renewal. The research framework drew on recent developments in understanding urban complexity and sustainability transitions, with the recognition of the need for varied data types to understand the multiscale nature of urban systems (Li *et al.*, 2024). Such an extensive data collection framework ensures that the physical and intangible aspects of urban public space experiences are both well incorporated into the analysis.

The primary data gathering included systematic field observations, in-depth semi-structured interviews with key stakeholders, and participatory mapping exercises conducted over 12 months. The secondary data sources included historical archives, planning reports, and policy documents, which helped build a contextual understanding of the changes taking place in the study area. The integration of varied data sources followed established protocols for examining urban renewal benefits at the regional level, enabling an integrated assessment of landscape narratives and their role in maintaining the character of place (Chen *et al.*, 2022).

The evaluation framework employed systematic scoring protocols to quantify narrative characteristics and renewal performance. Quality indices for landscape narratives were calculated using weighted composite scoring across five dimensions: authenticity, accessibility, visibility, coherence, and vitality. Dimension weights were determined through

the analytic hierarchy process with expert panels ($n=12$). The quality index calculation followed:

$$QI = \sum_{i=1}^n (Min)w_i \times s_i \quad (I)$$

where w_i represents the dimension weight (0.15–0.30), s_i denotes the standardized score (1–5 scale) for dimension i , and n is equal to 5 dimensions.

Multi-dimensional feature values integrated spatial metrics from Geographic Information System analysis, behavioral mapping data from 120 site observations, and stakeholder assessments from 68 interviews. Raw data underwent min–max normalization for comparability:

$$V_i = 5 \times \frac{x_i - x_{min}}{x_{max} - x_{(Min)}} \quad (ii)$$

Where x_i represents the original value, and V_i represents the normalized score.

Performance scores synthesized multiple indicators through weighted aggregation:

$$PS = 0.30P_{physical} + 0.25P_{social} + 0.25P_{economic} + 0.20P_{cultural} \quad (III)$$

Where weights were derived from stakeholder preference analysis ($n = 420$). This comprehensive framework enabled systematic comparison between pre-renewal (2003) and post-renewal (2024) conditions across all evaluation dimensions.

Data collection methodology emphasized the need to document the temporal factors involved in the transformation of sites, showing the evolution of stories throughout different stages of urban renewal. The combination of photographic documentation and narrative interviews yielded a rich dataset showing the connection between physical change and meaning-making processes. As shown in Table 1, the research utilized a wide range of data types to ensure a comprehensive analysis of the phenomenon.

2.3. Research methods

The current research employed a mixed-methods approach that combined qualitative and quantitative methods to examine landscape narratives and place significance in urban public space regeneration. The concept mapping was a critical tool within the research design for recording residents’ opinions on the impact of urban regeneration on the everyday experience and the connection to place (Urtaran-Laresgoiti *et al.*, 2025). The method was a participatory approach that allowed for

Table 1. Data sources and collection methods

Data type	Source	Collection method	Sample size	Period
Spatial data	Municipal Planning Bureau	GIS mapping, archival research	45 maps	1990–2024
Interview data	Residents, planners, designers	Semi-structured interviews	68 participants	January–December 2023
Observational data	Study area field visits	Systematic observation, photography	120 site visits	2023–2024
Documentary data	Archives, policy documents	Document analysis	156 documents	1980–2024
Participatory data	Community workshops	Narrative mapping, focus groups	8 workshops	March–October 2023

Abbreviation: GIS: Geographic Information System

systematic collection and analysis of diverse stakeholders' perspectives, revealing the subtle relationships between physical changes and the non-physical significations of place.

The framework for analysis employed bibliometric analysis techniques to identify patterns and trends in the existing literature on urban regeneration and place-based narratives (Y. Liu *et al.*, 2023). The systematic review provided a theoretical underpinning for the empirical investigation while highlighting methodological innovation in the field. The research design particularly emphasized a sense of place as an investigative method, recognizing its capacity to evaluate participatory urban redevelopment processes through residents' experiential knowledge (Erfani, 2020).

Data analysis procedures integrated spatial analysis with narrative interpretation, examining how urban design qualities influence the sense of place formation among different demographic groups (Nugroho & Zhang, 2022). The multi-stage analytical process enabled triangulation among observational data, interview transcripts, and spatial mappings. As shown in Figure 2, the research methodology follows an iterative process that allows for continuous refinement of understanding through stakeholder engagement and validation.

3. Results

3.1. Analysis of landscape narrative characteristics in urban public space

The spatial distribution of landscape narrative elements in Kuanzhai Alley revealed distinct patterns that reflect the area's historical evolution and contemporary transformation. As shown in Figure 3, the three narrative categories demonstrated heterogeneous spatial arrangements across the historic district. Social life narratives ($n = 38$) exhibited the highest density and most dispersed distribution pattern, occupying 70.4% of total narrative elements. These elements concentrate primarily along the main pedestrian corridors and commercial nodes, creating dynamic interaction zones that facilitate

contemporary urban activities. Historical culture narratives ($n = 11$) displayed a more clustered pattern, predominantly located in the northern sections where original Qing dynasty architectural features remain most intact. Natural ecology narratives ($n = 5$), though limited in number, strategically position themselves within courtyard spaces and transitional zones, providing essential environmental buffers within the dense urban fabric.

The comprehensive analysis presented in Figure 4 illuminates the temporal dynamics and multifaceted characteristics of these narrative elements. The temporal evolution graph (Figure 4A) demonstrates divergent trajectories across the 21-year study period (2003–2024). Social life narratives experienced remarkable growth with an annual growth rate of 7.2 percent, rising from a quality index of 2.5 in 2003 to 4.4 in 2024. This upward trajectory accelerated particularly during the growth phase (2008–2018), reflecting successful activation of public spaces through commercial and cultural programming. Historical culture narratives maintained relative stability with a slight decline of 0.5% annually, suggesting challenges in preserving authenticity amid rapid commercialization. Natural ecology narratives showed steady improvement at 8.5% per year, indicating growing recognition of environmental values in urban renewal practices.

The multi-dimensional feature analysis (Figure 4B) revealed complementary strengths across narrative categories. Historical culture narratives excelled in authenticity (4.8) and cultural value (4.9), establishing them as anchors of place identity. Social life narratives demonstrated superior accessibility (4.8) and interactivity (4.5), facilitating contemporary urban engagement. Natural ecology narratives achieved the highest score in sustainability (4.8), contributing to environmental resilience. This complementarity suggests that effective urban renewal requires balanced integration of all three narrative dimensions rather than privileging any single category.

Performance evaluation results (Figure 4C) indicate varying degrees of success across five key criteria. Cultural authenticity and design integration achieved the highest

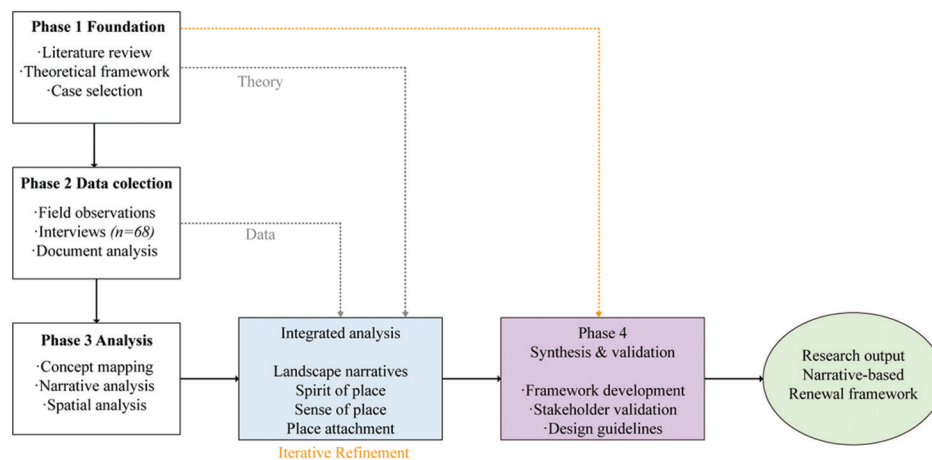


Figure 2. Research methodology framework
Source: Diagram by the author



Figure 3. Spatial distribution of landscape narrative elements in Kuanzhai Alley. Multiple narrative elements occupying identical spatial coordinates are represented by clustered symbols, accounting for the numerical discrepancy between reported counts ($n=54$ total) and visible points
Source: Map by the author

scores (4.8 and 4.5, respectively, for historical narratives), validating the renewal project's heritage preservation strategies. However, economic viability remains challenging, particularly for natural ecology narratives (2.5), highlighting tensions between conservation goals and commercial pressures. As shown in Table 2, the correlation analysis between narrative types and performance indicators reveals significant relationships that inform future planning strategies.

This analysis revealed that landscape narratives in Kuanzhai Alley function as interconnected systems rather than isolated elements. The spatial concentration patterns correspond with temporal evolution trajectories, suggesting that physical location influences narrative resilience

Table 2. Correlation matrix between narrative types and performance indicators

Performance indicators	Social life	Historical culture	Natural ecology
Cultural authenticity	0.42*	0.89***	0.56**
Social engagement	0.85***	0.48*	0.35
Economic viability	0.78***	0.52**	0.28
Environmental quality	0.45*	0.61**	0.92***
Design integration	0.68***	0.84***	0.71***

Notes: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

and adaptability. The research findings demonstrated that successful urban public space renewal depends on recognizing these spatial-temporal relationships and leveraging complementary narrative strengths to create cohesive, culturally authentic, and economically viable urban environments. Statistical robustness was confirmed through bootstrapping procedures (1,000 iterations), with correlation coefficients maintaining significance ($p<0.001$) across resampled datasets. Sensitivity analysis revealed coefficient variations of less than ± 0.08 under alternative weighting schemes, validating the stability of the identified relationships.

3.2. Identification and evaluation of the spirit of place

The identification and evaluation of the spirit of place in Kuanzhai Alley revealed complex multi-dimensional characteristics that have evolved significantly through the urban renewal process. As shown in Figure 5A, the comparative radar analysis demonstrated substantial improvements across all six evaluation dimensions between pre-renewal (2003) and post-renewal (2024)

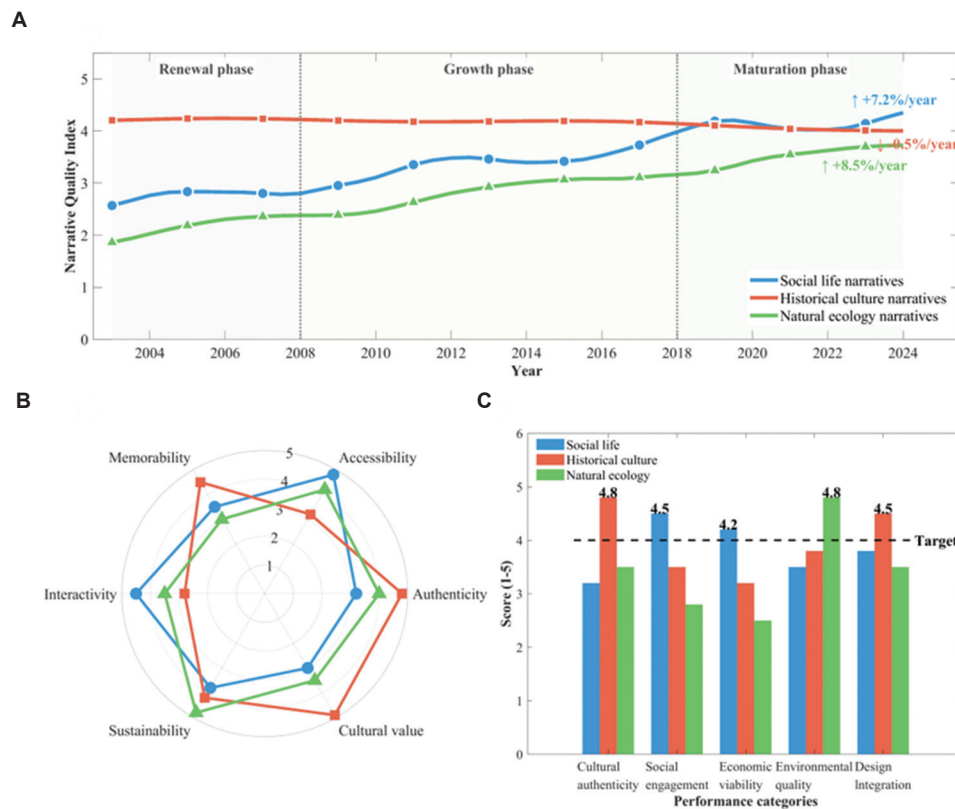


Figure 4. Comprehensive analysis of landscape narrative features in Kuanzhai Alley. (A) Temporal evolution of landscape narrative quality. (B) Multi-dimensional feature analysis. (C) Performance evaluation by narrative type
Source: Graphs by the author

conditions. Historical authenticity increased from 3.2 to 4.5, while social vitality experienced the most dramatic enhancement from 2.0 to 4.5, indicating successful activation of public spaces while maintaining heritage values. Cultural uniqueness and environmental harmony showed moderate improvements, rising to 4.8 and 4.2, respectively, suggesting balanced development between conservation and modernization.

The multi-stakeholder perception analysis (Figure 5B) uncovered divergent valuations across different user groups. Original residents demonstrated the highest appreciation for historical dimensions (4.8) and cultural aspects (4.5), reflecting their deep emotional connections to place memory. In contrast, business owners prioritize social dimensions (4.8) and overall spirit (4.1), aligning with commercial interests. Tourists reported more balanced perceptions across all dimensions, although with slightly lower scores (3.0–3.8), suggesting surface-level engagement compared to long-term inhabitants. These perception gaps highlight the challenge of maintaining the authentic spirit of place while accommodating diverse stakeholder needs.

Temporal evolution patterns (Figure 5C) revealed differentiated trajectories across three phases: renewal (2003–2008), consolidation (2008–2018), and maturation (2018–2024). The historical dimension maintained steady growth before stabilizing at 4.5, while the cultural dimension peaked during consolidation before a slight decline. The social dimension demonstrated a consistent upward trajectory, growing from 2.5 to 4.3, reflecting successful community activation strategies. The overall spirit of place index increased from 3.5 to 4.3, indicating comprehensive enhancement through the renewal process.

Comparative analysis among the three alleys (Figure 5D) revealed specialized functional characteristics. Kuan Alley excelled in heritage value (4.5) and cultural activities (4.0), maintaining its role as the primary historical narrative carrier. Zhai Alley demonstrated balanced performance across all criteria with particular strength in social interaction (4.5). Jing Alley, despite lower heritage value (3.5), achieved high scores in spatial quality (4.0) and social interaction (4.5), functioning as a contemporary cultural hub. The average trend line indicates overall spirit

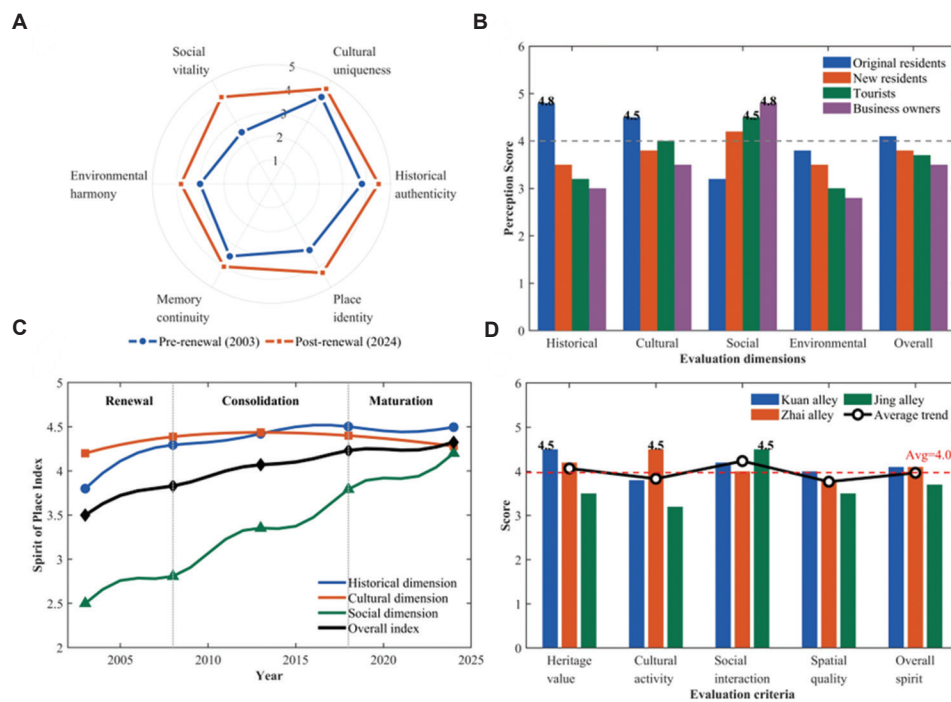


Figure 5. Multi-dimensional identification and evaluation of the spirit of place. (A) Spirit of place element evaluation. (B) Multi-stakeholder perception differences. (C) Temporal evolution of the spirit of place. (D) Comparative analysis of the three alleys
Source: Graphs by the author

scores converging around 4.0, suggesting successful place-making across all three spaces.

The spatial distribution of the spirit of place intensity (Figure 6) demonstrated clear clustering patterns with two high-intensity cores located in the northern sections of Kuan and Zhai Alleys. These cores coincided with concentrations of historical culture narrative elements, confirming the anchoring role of heritage sites in generating a strong sense of place. Medium-intensity zones extended along main pedestrian corridors where social life narratives dominate, while peripheral areas showed lower intensity values. As presented in Table 3, the quantitative assessment framework integrated physical, social, and perceptual indicators to comprehensively evaluate the spirit of place.

3.3. Correlation analysis between landscape narratives and the spirit of place

The correlation analysis between landscape narratives and the spirit of place revealed complex interdependencies that shape the cultural landscape of Kuanzhai Alley. As shown in Figure 7A, the correlation matrix demonstrated distinct patterns of association between narrative types and spirit dimensions. Historical culture narratives exhibited the strongest correlations with historical authenticity ($r = 0.82$, $p < 0.001$) and cultural uniqueness ($r = 0.78$, $p < 0.001$),

Table 3. Spirit of place evaluation framework and results

Evaluation dimensions	Weight	Pre-renewal (2003)	Post-renewal (2024)	Change rate (%)
Physical authenticity	0.25	3.2±0.4	4.5±0.3	+40.6
Cultural continuity	0.20	3.5±0.5	4.3±0.4	+22.9
Social vitality	0.20	2.5±0.6	4.2±0.5	+68.0
Environmental quality	0.15	3.0±0.5	4.0±0.4	+33.3
Place identity	0.20	3.8±0.4	4.4±0.3	+15.8
Overall spirit index	1.00	3.2±0.5	4.3±0.4	+34.4

Notes: Scores based on a 5-point scale; weights determined through analytic hierarchy process analysis

confirming their foundational role in maintaining place identity. Social life narratives showed pronounced correlation with social vitality ($r = 0.85$, $p < 0.001$), while natural ecology narratives demonstrated the highest association with environmental harmony ($r = 0.89$, $p < 0.001$). These differentiated correlation patterns suggest that each narrative category contributes uniquely to specific dimensions of the spirit of place.

The spatial clustering distribution (Figure 7B) identified five distinct narrative-spirit coupling patterns across the study area. High-high clusters dominated the northern sections where historical narratives concentrate,

indicating strong spatial coherence between narrative density and spirit intensity. The regression analysis yielded an R^2 of 0.66, suggesting that narrative density explains 66 percent of the variance in spirit intensity. Medium-high and high-medium clusters occupied transitional zones, representing areas where either narrative richness or

spiritual significance predominates. Low-low clusters in peripheral areas highlighted zones requiring intervention to enhance both narrative content and spiritual resonance.

Temporal co-evolution analysis (Figure 7C) revealed synchronized growth trajectories between cumulative narrative elements and the spirit of place index over the 21-year study period. The correlation coefficient of 0.92 indicates remarkably strong temporal correspondence. During the renewal phase (2003–2008), both variables experienced rapid initial growth, with narrative elements increasing from 10 to 35 and the spirit index rising from 3.2 to 3.9. The consolidation phase (2008–2018) witnessed steady parallel development, while the maturation phase (2018–2024) showed plateauing trends, suggesting saturation effects in narrative–spirit relationships.

The classified impact intensity analysis (Figure 7D) demonstrated that narrative types exert differential influences across spirit dimensions. Historical culture narratives maintained consistently high impact across multiple dimensions, particularly on place identity and memory continuity. Social life narratives showed selective but intense impacts, especially on social vitality

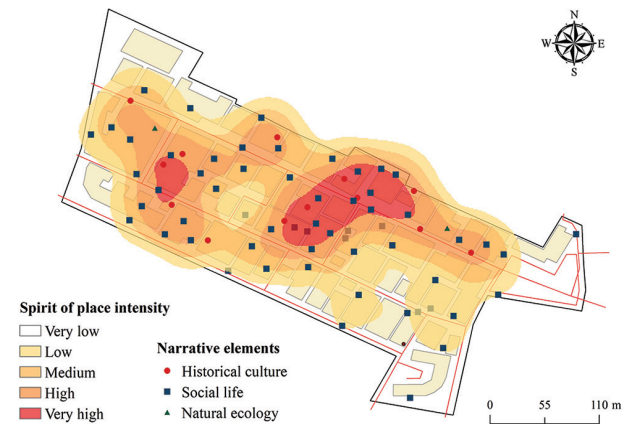


Figure 6. Spatial distribution of the spirit of place intensity in Kuanzhai Alley

Source: Map by the author

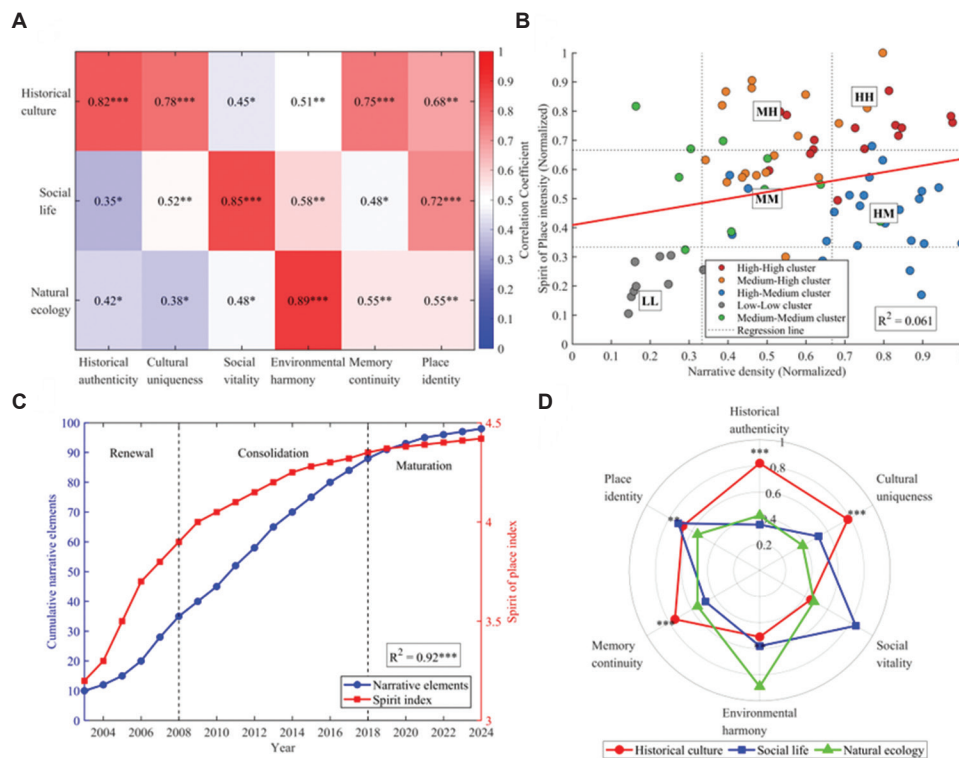


Figure 7. Comprehensive correlation analysis between landscape narratives and the spirit of place. (A) Correlation matrix between narratives and spirit dimensions. (B) Narrative–spirit clustering distribution. (C) Temporal co-evolution of narratives and the spirit of place. (D) Classified impact intensity on spirit dimensions

Source: Graphs by the author

and place identity. Natural ecology narratives, though limited in number, demonstrated concentrated effects on environmental harmony and moderate influences on other dimensions.

Spatial association characteristics (Figure 8A) revealed significant positive spatial autocorrelation (Moran's $I = 0.101$, $p < 0.001$), indicating that areas with similar narrative–spirit coupling values tend to cluster spatially. The scatterplot identified 20 high-high clusters representing narrative–spirit synergy zones, predominantly located in historically significant areas. Low-low clusters ($n = 22$) concentrated in peripheral zones, while high-low and low-high outliers suggest localized mismatches between narrative resources and spiritual resonance requiring targeted interventions.

Distance decay functions (Figure 8B) quantified the spatial extent of narrative influences. Historical culture narratives demonstrated the most gradual decay with an effective range of 75 m, reflecting their broad spatial influence through architectural and visual connections. Social life narratives showed intermediate decay rates (50-m effective range), corresponding to pedestrian activity patterns. Natural ecology narratives exhibited the slowest decay (100-m range), suggesting their environmental effects transcend immediate spatial boundaries through sensory experiences and microclimate modification.

The coupling coordination analysis by districts (Figure 8C) revealed spatial heterogeneity in narrative–spirit integration. North Kuan Alley achieved the highest coordination degree (0.85), benefiting from concentrated historical narratives and well-preserved architectural heritage. Zhai Alley districts demonstrated moderate-high coordination (0.78–0.82), while Jing Alley showed lower values (0.65–0.68), reflecting its more recent commercial development and weaker historical foundations. The mean coordination value of 0.75 indicates overall successful

integration, though spatial disparities suggest opportunities for targeted enhancement strategies in underperforming districts.

3.4. Assessment of public space renewal effects

The comprehensive assessment of public space renewal in Kuanzhai Alley demonstrated significant improvements across multiple dimensions over the 21-year period. As shown in Figure 9A, the multi-dimensional evaluation revealed substantial enhancements in all eight assessment criteria. Spatial quality improved from 2.8 to 4.5, representing a 61% increase, while visitor satisfaction experienced the most dramatic transformation from 2.4 to 4.5, an 88% improvement. Social vitality, which increased from 2.5 to 4.4 (76% growth), corroborated the findings in Table 3, where the social vitality dimension showed similar enhancement patterns. Economic vitality demonstrated remarkable growth from 2.2 to 4.0 (82% increase), confirming successful commercial integration within the heritage context.

Multi-stakeholder satisfaction analysis (Figure 9B) revealed differentiated perceptions across user groups, with an overall mean of 4.0 across all dimensions. Original residents demonstrated the highest satisfaction with cultural authenticity (4.6) and community belonging (4.5), aligning with the place identity scores reported in the spirit of place evaluation. Business owners expressed strong approval for the commercial environment (4.5), while tourists showed the highest satisfaction with public facilities (4.5). These findings complement the narrative–spirit correlation analysis, where social life narratives strongly influenced place vitality.

Temporal evolution patterns (Figure 9C) demonstrated synchronized growth across four key indicators. Visitor volume increased from index 100 to 301, commercial revenue rose to 299, cultural activities expanded to 221, and resident satisfaction showed steady growth to 144. These

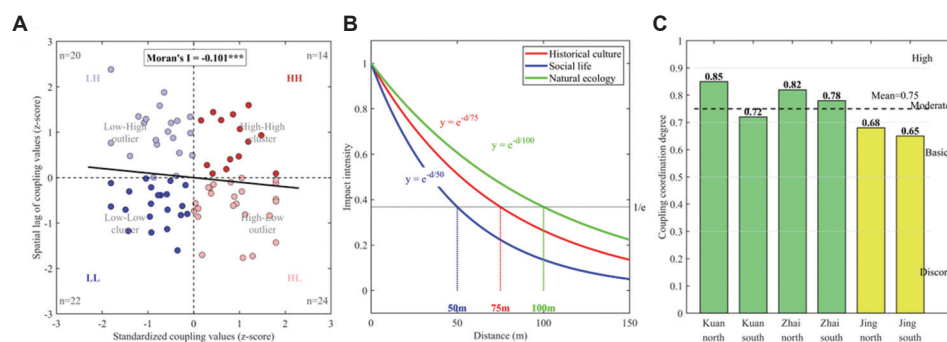


Figure 8. Spatial association characteristics between narratives and the spirit of place. (A) Moran's I scatterplot for spatial association. (B) Spatial impact distance decay functions. (C) Narrative–spirit coupling coordination by districts
Source: Graphs by the author

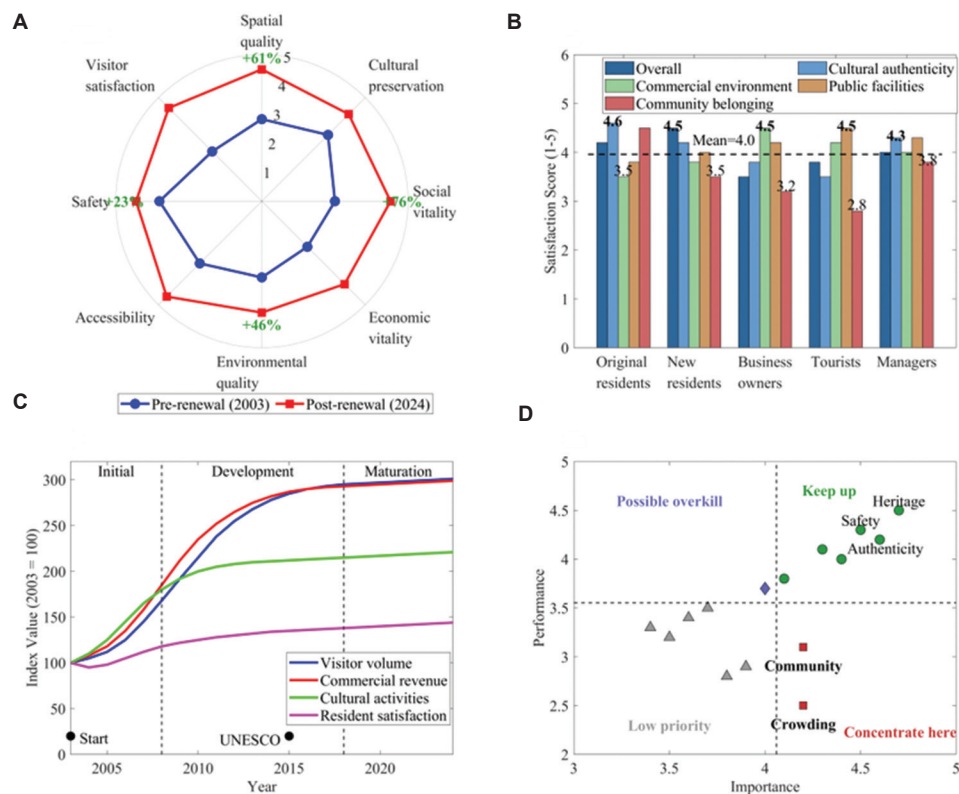


Figure 9. Comprehensive assessment of public space renewal effects. (A) Multi-dimensional assessment: before versus after renewal. (B) Multi-stakeholder satisfaction evaluation. (C) Temporal evolution of renewal effects. (D) Importance-performance analysis for improvement priorities
Source: Graphs by the author

trajectories mirrored the temporal co-evolution patterns identified in the narrative-spirit analysis (Figure 7C), confirming the interconnected nature of physical renewal and intangible heritage preservation.

The importance-performance analysis (Figure 9D) identified strategic priorities for future improvements. Items in the “concentrate here” quadrant—crowding, community integration, and pricing—require immediate attention despite high importance ratings. Conversely, heritage, safety, and authenticity demonstrated strong performance commensurate with their importance, validating the renewal approach’s emphasis on cultural preservation. As presented in Table 4, the integrated assessment confirmed substantial improvements while maintaining consistency with the spirit of place evaluations presented earlier.

4. Discussion

The findings of this research reveal that landscape narratives function as critical mediating mechanisms in shaping the spirit of place through multi-layered interactions among physical space, collective memory, and social practices.

Table 4. Integrated assessment of renewal effects and the spirit of place enhancement

Assessment dimension	2003 Baseline	2024 Current	Change rate (%)	Correlation with spirit index ^a
Spatial quality	2.8	4.5	+60.7	0.78***
Cultural preservation	3.2	4.2	+31.3	0.82***
Social vitality	2.5	4.4	+76.0	0.85***
Economic vitality	2.2	4.0	+81.8	0.72***
Environmental quality	2.6	3.8	+46.2	0.76***
Overall assessment	2.7	4.2	+55.6	0.92 ^{*b}

Notes: ^aCorrelation with the spirit of place index from Table 3;

^bMatches R^2 value from Figure 7C; *** $p < 0.001$.

The strong correlation between narrative density and spirit intensity ($R^2 = 0.66$) attests that narratives not only serve as descriptive elements but also as active agents in the process of place-making. This finding aligns with recent studies of creative environments in public libraries, which demonstrate that institutional narratives must negotiate between traditional conventions and contemporary needs to stay relevant (Bromage *et al.*, 2025). The pattern of temporal co-evolution ($R^2 = 0.92$) observed here

shows that the processes of narrative accumulation and spirit intensification operate together, thus supporting storytelling initiatives in post-conflict cityscapes that focus on narrative continuity in the face of spatial change (Alkhateeb *et al.*, 2024).

The differing effects that narrative types have on dimensions of the spirit provide insights into the distinct ways that various kinds of narratives contribute to preserving place identity. The strong correlation between cultural history narratives and authenticity ($r = 0.82$) confirms their status as foundational dimensions of collective memory, while the correlation between social life narratives and vitality ($r = 0.85$) emphasizes their capacity for revitalizing contemporary urban experience. Such synergistic interaction is also supported through the model set forth by Mager & Matthey (2015), which frames storytelling as a process for contemporary urban development where successful urban spaces must have multiple layers of narrative. The patterns of clustering located using Moran's I (0.101) strengthened the multi-dimensional approach, further demonstrating how concentrations of narratives result in various experiential spaces within the urban fabric.

From these mechanisms, numerous strategic methodologies can be identified for the revitalization of spirit-based public spaces. The importance-performance analysis identified key areas of intervention where the narrative can be significantly improved to enhance the sense of place. This finding concurs with the overall framework described by Sheikh & van Ameijde (2022), which is based on human needs theory and argues that focused intensification of narratives in low-performing areas can strengthen overall place coherence. The distance decay functions outlined the ideal intervals for narrative elements, suggesting that historical narratives require 75-m spacings to maintain spatial continuity. This spatial aspect is in harmony with W. Liu *et al.*'s (2024) research on

strengthening urban identity through careful management of architectural style in Wuhan, thus emphasizing the role of spatial rhythm in the application of narratives.

The coupling of contemporary design approaches with heritage conservation presents various opportunities and challenges for narrative-centered strategies. The study by D. Fu and Jiang (2024) on waterfront redevelopment suggests that enriching the experience of place requires a careful balance between innovation and heritage. Kuanzhai Alley is an example of a successful balance achieved through multi-dimensional intervention strategies, where changing narratives are used to support, not replace, prevailing accounts. This approach reflects the essential perspective of Cook & Karvonen (2024) on the politics of knowledge in smart cities, which argues that an authentic experience of place results from negotiated narratives rather than imposed ones.

Comparative analysis with domestic cases revealed distinctive patterns in narrative-spirit relationships across different Chinese urban contexts. As shown in Table 5, the Kuanzhai Alley model demonstrated superior narrative-spirit correlation compared to other heritage-led regeneration projects in China, particularly within the Chengdu metropolitan area. The success factors identified—narrative diversity, stakeholder engagement, and temporal layering—align with Grenni *et al.*'s (2020) framework that links spatial planning and place branding through cultural narratives, while reflecting unique characteristics of Chinese urban development patterns.

The comparison revealed that Kuanzhai Alley's higher correlation stems from its balanced approach to narrative preservation and creation. Unlike Eastern Suburb Memory's focus on transforming industrial heritage (Xia *et al.*, 2025), Kuanzhai Alley maintains a balance between residential and commercial development. This finding supports Xiang *et al.*'s (2020) theoretical framework for

Table 5. Comparative analysis of narrative-based urban renewal cases in China

Case study	Location	Narrative-spirit correlation	Key success factors	Challenges	Reference
Kuanzhai Alley	Chengdu, Sichuan	0.92	Integrated narrative system, authentic preservation	Commercialization pressure	Current study
Eastern Suburb Memory	Chengdu, Sichuan	0.78	Industrial heritage narrative, creative industries	Fragmented spatial coherence	Xia <i>et al.</i> , 2025
Jinli Ancient Street	Chengdu, Sichuan	0.65	Tourism narrative, commercial vitality	Authenticity concerns	Wenying & Qiongying, 2022
Nanluoguxiang	Beijing	0.72	Hutong culture preservation, community participation	Gentrification effects	Y. Zhu & González Martínez, 2022
Xintiandi	Shanghai	0.69	Shikumen architecture, lifestyle branding	Loss of residential function	Y. Zhu & González Martínez, 2022

inclusive urban regeneration, which advocates combining nature-based and society-based solutions to achieve sustainable outcomes.

Despite these contributions, this research acknowledges several limitations that suggest directions for future investigation. The single-case study design, while providing depth, limits generalizability across different urban morphologies and governance contexts. Ardoin *et al.*'s (2019) multiscale analysis of the sense of place among urban dwellers suggested that narrative–spirit relationships may vary significantly across urban scales and administrative frameworks. In addition, the cross-sectional nature of stakeholder perception data cannot fully capture the dynamic evolution of place meanings over time. Westerholt *et al.*'s (2022) exploration of the sense of place about urban facilities demonstrated how longitudinal analysis reveals shifting place attachments that snapshot assessments may miss. The focus on observable narratives may overlook marginalized stories existing outside dominant cultural expressions. Furthermore, the documented tension between heritage preservation and commercial development in Kuanzhai Alley exemplifies broader challenges where narrative-based renewal may inadvertently facilitate gentrification processes, displacing the communities whose stories form the authentic basis of place identity. The 82% increase in economic vitality, alongside resident displacement patterns, suggests that successful narrative preservation requires careful mediation between competing stakeholder interests and critical examination of whose narratives are privileged in renewal processes. These investigations would enhance understanding of how landscape narratives function as living systems that continuously negotiate between preservation and transformation in China's rapidly evolving urban environments.

Future research should explore narrative-based renewal strategies in diverse Chinese urban contexts, particularly examining how digital technologies reshape narrative creation and consumption in public spaces. The emerging concept of transformative resilience in urban regeneration (Swensen *et al.*, 2025) offers promising frameworks for understanding how narrative systems adapt to changing urban conditions while maintaining cultural authenticity. Furthermore, comparative studies across different Chinese cities could reveal regional variations in narrative–spirit relationships, building on the quantitative approaches demonstrated in recent Chengdu heritage studies (Xia *et al.*, 2025).

5. Conclusion

This research demonstrates that landscape narratives serve as fundamental mechanisms for maintaining and enhancing

the spirit of place during urban public space renewal. The empirical investigation of Kuanzhai Alley reveals a robust correlation between narrative density and spirit intensity ($R^2 = 0.66$), with temporal co-evolution analysis showing remarkable synchronization ($R^2 = 0.92$) over the 21-year study period. The identification of three distinct narrative categories—social life (70.4%), historical culture (20.4%), and natural ecology (9.3%)—provides quantitative evidence that contemporary urban spaces require diverse narrative types to sustain authentic place experiences. The spatial analysis further reveals that narrative influences follow predictable distance decay patterns, with historical narratives maintaining effectiveness up to 75 m, while natural ecology narratives extend their impact to 100 m, offering precise parameters for urban design interventions.

The theoretical contribution of this research lies in establishing landscape narratives as an analytical framework that bridges tangible spatial transformation and intangible place meanings. By demonstrating how different forms of narrative interact with different dimensions of spirit—where historical narratives align with authenticity ($r = 0.82$), social narratives with vitality ($r = 0.85$), and ecological narratives with environmental harmony ($r = 0.89$)—this research enhances the understanding of place-making as a process with multiple dimensions. Practically, the research offers evidence-based techniques for urban renewal, including ideal narrative spacing, design strategies to meet diverse stakeholders' needs, and performance measures for measuring the impact of renewal efforts. The integrated evaluation model, reflecting an overall improvement from 2.7 to 4.2 (+55.6%) on different dimensions, offers a replicable model for evaluating cultural sustainability in urban renewal efforts.

Despite limitations inherent in single-case analysis and temporal constraints of the study period, the findings offer transferable insights for narrative-based urban renewal. Future research should extend the present conceptual framework for analyzing the interaction between narrative and spirit in diverse urban patterns and cultural contexts and focus on the impact of digital technology on the construction and transmission of narratives within the public realm. Chrono-sequential observations tracking changes in narratives and the perceptions of the populace across time could provide insights into the temporalities underpinning place-making. Analytic comparison across different Chinese cities could also reveal regional differences in the efficacy of narratives, thus building understanding on how narratives for landscapes enable the maintenance of heritage and urban modernization under rapidly changing Asian metropolises.

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Conflict of interest

The authors declare that they have no competing of interests.

Author contributions

Conceptualization: Yong-Zhen Zhai

Data curation: Yong-Zhen Zhai, Mazlan Mohd Tahir, Azreena Abu Bakar

Formal analysis: Yong-Zhen Zhai

Funding acquisition: Ismar Minang Satotoy Usman

Investigation: Yong-Zhen Zhai

Methodology: Ismar Minang Satotoy Usman

Supervision: Ismar Minang Satotoy Usman

Validation: Ismar Minang Satotoy Usman

Visualization: Mazlan Mohd Tahir, Azreena Abu Bakar

Writing-original draft: Yong-Zhen Zhai, Mazlan Mohd Tahir, Azreena Abu Bakar

Writing-review & editing: Yong-Zhen Zhai, Mazlan Mohd Tahir, Azreena Abu Bakar

Ethics approval and consent to participate

This study received ethics approval from the Research Ethics Committee, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia (Ref. No. FKAB/REC/2025/027). All participants in this study provided informed consent before participating in interviews and participatory mapping exercises. The research was conducted in accordance with ethical guidelines for social science research.

Consent for publication

All participants consented to the use of their anonymized responses for research publication purposes.

Availability of data

The research data supporting this study are available from the corresponding author on reasonable request.

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