

Research on the Humanistic Space of Haikou Qilou Cultural District from the Perspective of Sustainable Development

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Abstract: As a tropical coastal commercial historic settlement, the Haikou Arcade Cultural District's humanistic space presents itself as a dynamic whole in which human behaviors and spatial forms mutually shape each other. This study extracts three constituent elements—cultural continuity, social interaction, and spatial adaptability—from the perspective of sustainable development, and constructs an integrated analytical framework with a vertical dimension of "behavior-form-meaning" and a horizontal dimension of short-term adjustable layer versus long-term stable layer. By analyzing the spatial imprints in historical superposition, the logic of association between street forms and humanistic expressions, and the multi-centered neighborhood interaction network, this study reveals its structural characteristics. The adaptive logic encompasses the "reversible and legible" path of functional reshaping, the dual-cycle self-sustaining mechanism of daily behaviors and spatial maintenance, and the balancing strategy of time-staggering and gradual trial. This study concludes that the resilience of the district's humanistic space stems from the bottom-up generative order and the clearly layered superposition structure.

Keywords: Haikou Arcade Cultural District; humanistic space; sustainable development; spatial imprints; self-sustaining mechanism.

Introduction

Research on the humanistic space of historic districts has shifted from the preservation of physical forms to a comprehensive focus on behavioral patterns and cultural continuity. However, existing studies mostly emphasize static descriptions or single-factor analyses and lack an integrated perspective that combines spatial forms, usage behaviors, and temporal succession. The Haikou Arcade Cultural District, through long-term spontaneous adaptation, has accumulated identifiable humanistic imprints in its arcade spaces, inner courtyards, and alleyways. The sustainable operation of the district stems from the self-sustaining vitality of its internal dynamics and the balance of diverse interactions. This study, from the perspective of sustainable development, analyzes its structural characteristics and adaptive logic, defines the connotation of humanistic space and establishes a layered analytical framework, reveals the mechanisms of spatial imprint persistence, the resilience of neighborhood networks, and the relevance of functional reshaping, and provides a referential analytical path for the study of humanistic space in historic districts.

1. Theoretical Foundation and Analytical Dimensions of Humanistic Space

1.1 Definition of the Core Connotation of Humanistic Space in the Arcade District

The humanistic space of the arcade district does not merely refer to the architectural interfaces and street scales in physical form; rather, it is a meaningful field woven together by long-term residence, commercial interactions, and daily behaviors. This space carries the traces of human activities, emotional attachments, and cultural identities, and its core lies in the ongoing interactive relationship between people and the place. In historic districts such as the Haikou arcade area, humanistic space manifests itself in concrete and nuanced spatial uses, including resting under the street-side colonnades, observing daily life from behind the second-floor windows, and engaging in neighborly conversations in the inner courtyards. These behavioral patterns gradually become solidified into the organizational logic of space, thereby enabling the arcade district to transcend a mere collection of buildings and

become a living entity imbued with humanistic warmth.

When defining this concept, we need to understand humanistic space as a relational existence. It encompasses both visible spatial forms—such as arcade colonnades, inner courtyards, and alleyway nodes—and invisible social networks and behavioral habits. The key characteristic of humanistic space lies in its bottom-up generative process: it is not determined by a single plan but is an order formed through long-term adaptation and fine-tuning. The arcade spaces in Haikou often simultaneously serve multiple functions, including passage, social interaction, shelter from rain, and merchandise display. This functional hybridity precisely reflects the flexibility and inclusiveness of humanistic space. Therefore, the connotation of humanistic space can be summarized as a dynamic whole constituted by the mutual shaping of human behaviors and spatial forms within a specific geographical environment and social context^[1].

1.2 Constituent Elements of Humanistic Space from the Perspective of Sustainable Development

From the perspective of sustainable development, the composition of humanistic space needs to simultaneously satisfy three basic dimensions: cultural continuity, social interaction, and spatial adaptability. The dimension of cultural continuity focuses on how intangible cultural elements—such as intergenerational crafts, festival customs, and linguistic habits—are preserved through specific spaces in the district. The arcade's eaves galleries, overpass buildings, and corner open spaces often serve as carriers of these cultural expressions. For example, the ancestral hall plaques and lime-sculpture patterns commonly found in Haikou's arcade buildings are themselves spatial presentations of family memory and commercial ethics. The dimension of social interaction, on the other hand, attends to the density and modes of interaction among different groups in public and semi-public spaces. A sound interaction network can inject sustained vitality into the district.

The dimension of spatial adaptability emphasizes the self-regulating capacity of humanistic space when facing external changes. The courtyard-style layout, flexible partition walls, and openable arcade interfaces of the arcade district enable individual units to make fine adjustments according to residential or commercial needs without damaging the textural characteristics of the overall district. This adaptability is precisely the long-term stability that sustainable development pursues. The three constituent elements are not independent of each other: cultural continuity provides content for social interaction, social interaction in turn reinforces cultural identity, and spatial adaptability ensures that the two are not undermined over time. Understanding the interrelations among these elements helps to grasp the operational logic of humanistic space as an organic system^[2].

1.3 An Integrated Analytical Framework for the Study of Humanistic Space

The study of humanistic space in the Haikou Arcade Cultural District requires constructing an integrated analytical framework that can simultaneously accommodate spatial forms, behavioral patterns, and temporal succession. This framework adopts the three-tier structure of "behavior–form–meaning" as its vertical mainline. The behavior layer records the actual usage patterns of interior and exterior arcade spaces by different groups at different times, including stopping positions, movement routes, and habits of boundary occupancy. The form layer corresponds to the geometric features, materials, and opening–closing scales of buildings and streets. The meaning layer interprets the value orientations, sense of belonging, and cultural memories of the people that are reflected behind these behaviors and forms. The three layers form correspondences through observable spatial events, thereby avoiding a fall into purely formal analysis or purely sociological description.

In the horizontal dimension, the analytical framework introduces a temporal scale of sustainability and decomposes humanistic space into a short-term adjustable layer and a long-term stable layer. The short-term adjustable layer includes daily changes such as the replacement of shop signs, the repair of doors and windows, and the placement of temporary stalls, and these changes reflect the immediate needs of the people. The long-term stable layer covers the less alterable spatial base map, including street skeletons, plot divisions, and colonnade spacing, and these elements provide the basic order for short-term changes. In the Haikou Arcade District, the continuous facades above the second floor and the ground-floor colonnade system belong to the long-term stable layer, while the business contents and storefront decorations of the ground-floor shops belong to the adjustable layer. Through this layered analysis, one can simultaneously capture the sources of resilience and vitality of humanistic space, and provide an operational path for subsequent in-depth analysis.

2. Structural Characteristics of the Humanistic Space in the Haikou Arcade Cultural District

2.1 Human Activity Trajectories and Spatial Imprints in Historical Superposition

During its long-term use, the Haikou Arcade District has formed clearly layered trajectories of human activities. These trajectories are not linear chronological records; rather, they are deposited as spatial imprints into the street textures and architectural components. Different groups from different periods have used the same arcade space, the same gable wall, and the same old well in distinct ways. Later uses do not completely overwrite earlier ones; instead, they overlap, interweave, or partially merge with them. For example, the lime-sculpted shop signs and the later painted slogan traces that coexist on the arcade facades, though originating from different eras, together constitute a continuous profile of the district's human activities. This state of superposition renders the arcade space a text that can be repeatedly read, with each generation of residents leaving identifiable marks within it^[3].

The specific forms of spatial imprints include the degree of ground wear, the positions of hook holes on walls, the opening-and-closing traces of doors and windows, and the water stain marks in patios. In the Haikou Arcade District, the stone steps at the base of the arcade pillars often show uneven depressions, which are gradual deformations caused by long-term sitting, leaning, and cargo dragging; the wooden beams on the inner sides of the second-floor window sills retain rope abrasion marks, hinting at past habits of drying and hanging items. These imprints exist without relying on written records, yet they allow us to infer historical patterns of human behavior. From the perspective of sustainable development, these superimposed trajectories and imprints constitute a memory bank of humanistic space; they are still partially utilized or reactivated in the contemporary era, serving as an important basis for the district to recognize its own identity.

2.2 The Logic of Association between Street and Lane Morphology and Humanistic Expressions

The street and lane morphology of the Haikou Arcade District presents obvious hierarchical characteristics. The main streets are relatively straight with stable widths, and the arcade colonnades on both sides form continuous shading interfaces; the branch lanes, in contrast, wind and narrow, with some alley widths only allowing two people to pass side by side. This morphological difference directly corresponds to humanistic expressions of varying intensities and types. The humanistic expressions on the main streets tend toward outward display, including the size of signboard fonts, the degree of storefront openness, and the arrangement of merchandise, all of which face mobile crowds and potential customers. The humanistic expressions within the branch lanes tend toward inwardness and privacy, manifested as the placement of flowerpots at corners, low seats at doorways, and the sounds of conversation coming from behind half-closed wooden doors. There is no rigid hierarchical relationship between these two modes of expression; rather, they jointly constitute the complete spectrum of humanistic space in the district.

Further observation reveals that the turning points, intersections, and terminal spaces of streets and lanes often become the most concentrated locations for humanistic expressions. In certain triangular zones at alley entrances in Haikou, residents have set up simple stone benches and sunshade cloths, and passersby stop there briefly or exchange neighborhood information. Such spontaneous behaviors have not been written into any design drawings, yet they occur naturally because of the slowing down and enclosure in spatial form. Conversely, the continuous accumulation of humanistic expressions can also slowly alter street and lane morphology. Long-term fruit stalls along the sidewalks prompt the redivision of spacing between adjacent colonnade pillars, and the entrances of courtyards that frequently host small gatherings gradually form tiny outward-protruding spaces. This two-way shaping relationship reveals the deep logic of association between street and lane morphology and humanistic expressions.

2.3 The Humanistic Organizational Mode Presented by the Neighborhood Interaction Network

The neighborhood interaction network within the Haikou Arcade Cultural District exhibits obvious spatial mosaic characteristics; it is not evenly distributed according to plot boundaries or administrative units, but rather forms clusters of interaction around daily nodes such as wells, tree shades, steps, and corner grocery stores. Each cluster usually covers ten to twenty households, and members maintain a high frequency of face-to-face contact, including synchronized behaviors such as morning washing at the same time, afternoon resting under the arcade eaves, and evening garbage disposal. The interaction density generated by these behaviors presents a non-uniform spatial distribution, with the intensity

around the nodes being much higher than that in the middle sections of the lanes. This organizational mode renders the humanistic space of the entire district a multi-centered, small-scale network structure; it lacks a single dominant center, yet possesses strong local connectivity^[4].

From the perspective of the operational characteristics of the humanistic organizational mode, the neighborhood interaction network relies on a combination of weak contracts and strong reciprocity. The so-called weak contracts refer to the tacit rules among neighbors regarding the use of public space, such as the rotation of seating under the arcade eaves, the allocation of time periods for drying clothes, and the demarcation of boundaries for temporary stacking of miscellaneous items. These rules are rarely recorded in writing, yet they are consciously observed by the vast majority of residents. Strong reciprocity, on the other hand, manifests itself in the immediate returns of daily assistance, including watching over items at neighbors' doorways, sharing home-grown spices, and helping to bring in clothes during rainy weather. These seemingly trivial exchanges even out giving and receiving over time, forming a low-risk, high-frequency support system. In the Haikou Arcade District, this type of humanistic organizational mode has continued for several generations; even as the building facades have undergone changes, the structural resilience of the interaction network has remained intact.

3. The Adaptive Logic of Humanistic Space under the Guidance of Sustainable Development

3.1 The Path of Cultural Continuity and Spatial Function Reshaping

The cultural continuity of the Haikou Arcade District does not rely on the static preservation of any fixed form; rather, it is manifested in the gradual reshaping of spatial functions over time. The elderly residents tend to emphasize daily household chores and neighborly chats in the use of the space under the arcade eaves, whereas the younger generation prefers to treat it as an extension area for small-scale cultural and creative displays or light-food outdoor stalls. The two functions may appear disconnected, but they actually share the same spatial logic: the area beneath the arcade eaves has always served as a transitional zone between interior and exterior, with only the specific content of this transition adjusting according to changes in lifestyle. This functional reshaping, in essence, is a reactivation of the original spatial potential rather than a demolition and rebuilding. After an old grocery store closes, the same bay may be transformed into a handicraft workshop, where the traces of the old shelves on the walls are preserved and placed in dialogue with the newly installed workbench.

From a sustainable perspective, the reshaping path of spatial functions needs to follow the principle of being "reversible and legible." By reversible, it is meant that each functional adjustment should not cause irreversible damage to the original spatial components—for example, adding temporary fixtures to the colonnade pillars rather than directly drilling holes; by legible, it is required that new traces of use should not completely cover the old ones, so that the layers of human activities from different periods can still be distinguished by later generations. In some courtyards of the Haikou Arcade District, residents have converted abandoned patios into miniature vegetable gardens, with the original drainage channels and stone basins retained as planting containers, thus juxtaposing new and old functions rather than replacing one with the other. This approach provides specific spatial carriers for cultural continuity while also meeting the contemporary residents' need for practical space. The core of the reshaping path lies in identifying which functional changes belong to surface-level adjustments and which belong to the deep structure; only functional transformations that do not disturb the deep structure can truly achieve continuity rather than disruption.

3.2 The Intrinsic Mechanism of Self-Sustaining Vitality in Humanistic Space

The self-sustaining mechanism of vitality in humanistic space mainly manifests itself in two mutually nested cycles: the cycle of daily behaviors and the cycle of spatial maintenance. The cycle of daily behaviors refers to the fact that people's use of space itself generates momentum for sustaining vitality: when a corner under the arcade is frequently used for sitting and leaning, the users naturally clear away debris on the ground and appropriately repair damaged edges; when an alley has a relatively large flow of pedestrian traffic during the morning and evening hours, the residents on both sides voluntarily keep their doorways clean to avoid obstructing passage. Some narrow lanes in the Haikou Arcade District have long been without municipal cleaning intervention, yet they remain clean, precisely because the surveillance of passing pedestrians and the spontaneous sweeping by residents together form a self-management system. This behavioral cycle does not rely on external instructions; rather, it stems from the instinctive maintenance of comfort in shared spaces^[5].

The cycle of spatial maintenance, in turn, manifests itself as the cumulative effect of minor interventions. A single resident repairs a section of steps in front of his or her own doorway, fastens a loose railing, or clears fallen leaves from a drainage outlet; these actions, taken individually, are inconspicuous, but when a large number of similar minor interventions occur continuously over time, they constitute a stable control over the overall condition of humanistic space. The common traces of cement mortar patching, the homemade iron reinforcements on wooden doors and windows, and the piled broken bricks at wall corners in the Haikou Arcade District are all concrete evidence of this cycle. Each repair extends the service life of the spatial components, thereby avoiding large-scale demolition and reconstruction. There is also a positive feedback relationship between the two cycles: the more active the daily behaviors, the higher the users' attention to the space, and consequently the higher the frequency of minor interventions; the better the spatial condition, the more it attracts people to stay and use it. It is precisely this self-sustaining mechanism that has kept the humanistic space of the Haikou Arcade District continuously usable for generations in the absence of strong external intervention.

3.3 Balancing Strategies of Humanistic Space in the Interaction of Multiple Stakeholders

In the operation of the humanistic space in the Haikou Arcade Cultural District, different types of users have differentiated demands and behavioral habits. These differences do not necessarily lead to conflicts; rather, they form a dynamic balance under a reasonable interactive framework. Long-term residents tend to maintain environmental stability and hold relatively fixed expectations regarding the moving range of roadside stalls, the loudness of nighttime sounds, and the boundary for stacking miscellaneous items in public areas. Short-term tenants, on the other hand, are more concerned with operational convenience and may wish to expand their outdoor display areas or extend lighting hours. The interaction between these two groups in the arcade space usually takes the form of gradual trial: one party slightly crosses the customary boundary, while the other party responds through facial expressions or brief conversations, and after several rounds of back-and-forth, a new balance is reached again. This balance is not a one-size-fits-all rule but rather a specific coordination tailored to different time periods and different locations.

The balancing strategies of humanistic space are also reflected in the allocation mechanisms for scarce resources. Some narrow passageways in the Haikou Arcade District simultaneously serve multiple functions, including pedestrian traffic, clothes drying, and temporary cargo unloading, and these functions are given priority by different users at different times. In the early morning, around seven to eight o'clock, residents mostly use these spaces for washing and disposing of garbage; after nine o'clock, merchants begin to set out their goods; and from noon to evening, the passageways experience the densest flow of pedestrians. This staggered allocation by time periods has not been formally negotiated, yet it has formed an unwritten schedule through long-term adaptation. More subtle balancing strategies emerge in the use of shared nodes. For example, a small open space at a corner may serve as a vendor's stall during the day, become a place for elderly people to sit and chat in the evening, and turn into a gathering spot for young people after nightfall. The occupancy periods of different age groups and different social identities in the same space are sequentially connected rather than overlapping, thus enabling the limited humanistic space to accommodate as diverse a range of social functions as possible. These bottom-up balancing strategies often possess greater resilience than any externally imposed regulatory plan.

Conclusion

From the perspective of sustainable development, this study conducts a systematic analysis of the humanistic space in the Haikou Arcade Cultural District and reaches the following understandings. Humanistic space is essentially a relational dynamic whole, constituted by three interlocking dimensions: cultural continuity, social interaction, and spatial adaptability. Its structural characteristics are manifested in the identifiable trace imprints of historical superposition, the two-way shaping relationship between street morphology and humanistic expressions, and the organizational mode of weak contracts and strong reciprocity supported by a multi-centered, small-scale neighborhood interaction network. Under the guidance of sustainable development, the adaptive logic encompasses the reversible and legible principle that functional reshaping should follow, the positive-feedback self-sustaining mechanism of the daily behavior cycle and the spatial maintenance cycle, and the dynamic balancing strategies achieved by multiple stakeholders through time-staggering and gradual trial. These mechanisms collectively explain the intrinsic reasons why the humanistic space of the Haikou Arcade District has maintained vitality for generations in the absence of strong external

intervention. Future research directions that can be further explored include: comparing the differences in self-sustaining capacity among humanistic spaces in different types of historic districts; quantitatively analyzing the conditions for the decay and reactivation of spatial imprints; and exploring the critical threshold between the bottom-up generative order and the deep structure of humanistic space. In addition, combining digital recording of behavioral traces with long-term longitudinal observation may provide more refined methodological support for the sustainable study of humanistic space.

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