

Cultural Identity and Inclusivity: Micro-Spatial Behavior in Lingnan

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Abstract: The Lingnan region's cultural heritage significantly shapes its public space design, integrating natural and cultural elements to suit its humid climate. However, gaps remain in understanding how age-specific needs and lifestyles influence spatial usage. This study analyzes micro-spatial behavior in Guangdong's old urban areas, revealing high public space engagement among elderly residents, contrasted by neutral responses from younger groups. It highlights the role of community-oriented lifestyles and historical preservation in fostering emotional connections to spaces. By applying New Urbanism principles, this research provides valuable insights for culturally sensitive and inclusive urban planning.

Keywords: Lingnan Culture; Community Participation; Micro-Spatial Behavior; Inclusive Urban Planning.

1. Introduction

Public space design plays a pivotal role in urban life, shaping social interactions, cultural expression, and daily activities. In regions with rich historical and cultural heritage, such as the Lingnan region in Guangdong, public spaces exemplify a distinctive integration of cultural identity and functional adaptability. Lingnan's traditional architectural elements, including arcades, walled houses, and ventilated layouts, highlight a harmonious relationship between the built environment and the region's natural and cultural contexts. These features not only address the climatic challenges of a humid subtropical climate but also promote social cohesion and the preservation of cultural heritage.

However, despite the importance of these cultural and architectural aspects, research on Lingnan's public space design has largely overlooked the impact of human factors. Specifically, there is insufficient understanding of how demographic variables, such as age-specific needs and lifestyle preferences, influence spatial behavior and usage patterns. This lack of insight limits the development of inclusive designs that can effectively cater to the diverse needs of urban residents.

To bridge this gap, this study focuses on the micro-spatial behavior of residents in Guangdong's old urban areas. It examines the interplay between historical, cultural, and human factors in shaping the use of public spaces. Through statistical observation methods, the research explores the activities and preferences of various demographic groups, offering practical insights for fostering inclusivity, cultural identity, and community engagement in public space design.

The findings contribute to advancing culturally sensitive and user-centered spatial design. By integrating New Urbanism principles and promoting community participation, this research proposes strategies to enhance the functionality and appeal of public spaces in regions like Lingnan, known for their historical richness and unique climatic challenges. The study aims to connect traditional architectural principles with modern urban planning needs, providing a robust framework for sustainable and inclusive urban design.

2. Literature Review

Research on micro-spatial behavior and public space design has gained significant attention, especially in culturally rich regions like Lingnan. This section reviews key studies that illustrate the impact of Lingnan's architectural heritage, human factors, climatic adaptability, and community dynamics on spatial design.

2.1. Lingnan's Architectural and Cultural Legacy

Lingnan's traditional architecture, such as arcades, walled houses, and ventilated layouts, reflects a harmonious relationship between design and the natural environment. These structures are functional, offering ventilation and shade to address the region's humid subtropical climate, while also holding deep cultural significance. For instance, artistic and cultural elements like Cantonese opera motifs, stone lions, and maritime-inspired decorations are intricately woven into spatial designs, reinforcing the region's cultural identity and commitment to historical preservation.

Human Factors in Spatial Design

Although Lingnan's architectural heritage is well-documented, research on the role of human factors remains limited. Demographic variables, such as age-specific needs and lifestyle preferences, significantly influence spatial behavior. Studies reveal that elderly residents are the most engaged with public cultural spaces, while children and young adults exhibit more neutral responses. These findings highlight the importance of adopting inclusive design strategies that accommodate diverse user groups and align with New Urbanism principles to create accessible and meaningful spaces.

2.2. Climate-Responsive Spatial Design

Lingnan's hot and humid climate plays a crucial role in shaping its architectural practices. Features like spatial openness, natural ventilation, and shaded areas are prioritized to enhance user comfort and environmental adaptability. Surveys indicate that approximately 85% of residents prefer open and well-ventilated spaces, such as courtyards,

balconies, and parks, underscoring the critical importance of integrating climate-responsive elements into spatial design.

2.3. Community-Oriented Design

Lingnan’s spatial philosophy places a strong emphasis on fostering community interaction. Public spaces, including courtyards, teahouses, and pavilions, are deliberately designed to facilitate communication and social ties. Studies show that compact housing and limited indoor spaces often compel residents to rely on outdoor areas for social and daily activities, emphasizing the need to incorporate community needs into spatial planning to strengthen social cohesion.

2.4. Bridging Tradition and Modernity

While traditional practices in Lingnan offer valuable insights, there is an increasing demand to blend these historical elements with modern urban planning frameworks. Integrating cultural preservation, community participation, and inclusive design can provide effective strategies for sustainable urban development. Balancing tradition and modernity ensure that spatial designs remain relevant to contemporary needs while respecting their historical and cultural context.

3. Discussion and Analysis

3.1. Lingnan Cultural Factors and Public Space Design

Taking the Lingnan region of Guangdong as an example, its rich historical culture, unique geographical environment, and distinctive lifestyle profoundly shape its micro-spatial behavior. Lingnan’s historical and cultural heritage is vividly reflected in its spatial design, with traditional architectures like arcades, walled houses, and stone chambers showcasing its historical imprints. These buildings harmonize humanity and nature, featuring upward-curving roofs and intricately decorated interiors that highlight their historical and cultural significance.

Community relationships in Lingnan are particularly close-knit, with frequent neighborly interactions. To foster these ties, public spaces such as courtyards, teahouses, and pavilions are often incorporated into designs to encourage communication

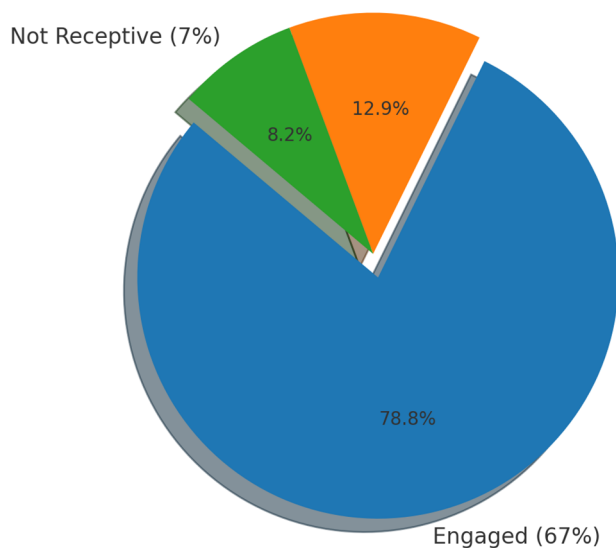
and interaction. In terms of interior design, open layouts are favored to address the humid and hot climate, as demonstrated by structures like the "Yuanyang Lou" buildings. Arcade designs provide practical solutions for rain protection and cooling benefits, emphasizing ventilation and shade to adapt to the wet climate.

Lingnan’s spatial designs aim to create comfortable and pleasant environments by incorporating elements like fish ponds, ornamental rocks, and plants in private gardens, evoking a tranquil atmosphere. Local art forms, including Cantonese opera, lion dances, and pottery, are seamlessly integrated into designs, enriching spaces with artistic appeal. Additionally, Lingnan’s historical role as a hub on the Maritime Silk Road reflects its maritime cultural influence, visible in micro-spatial behaviors and design elements such as fishing nets and seashell-themed decorations that symbolize respect for the ocean.

A study in Guangdong’s old towns examined the impact of human factors on micro-spatial behavior, focusing on typical neighborhoods. Using statistical observation methods, researchers analyzed residents’ activities and the differing public space needs across age groups. For example, the study found significant differences in how age groups utilized public spaces, providing valuable insights for improving public space design. These insights, as illustrated in Figure 1, highlight the importance of tailoring designs to meet the diverse needs of users by considering time spent in and visitation rates to various spaces like courtyards, flowerbeds, and pavilions.

This exploration underscores the profound impact of Lingnan’s cultural factors on micro-spatial behavior, offering essential guidance for spatial design and planning tailored to the region. Elderly individuals, in particular, emerge as the most engaged with public cultural spaces, accounting for 67% of this demographic. In contrast, 11% expressed a neutral attitude, and 7% were not receptive to such spaces. In Guangzhou's old urban areas, public cultural spaces enjoy widespread acceptance, especially among elderly residents, whereas children and young adults show higher neutrality, suggesting a need for improving accessibility and appeal for these groups. Overall, negative views toward public cultural spaces are low across all demographics, indicating a generally positive attitude.

Table 1. Engagement of Elderly Residents with Public Cultural Spaces



Questionnaire findings further elaborate on the factors influencing micro-spatial behavior in the Lingnan region:

Spatial Openness: Approximately 85% of respondents prefer open and ventilated spaces, such as balconies, parks, and open-plan indoor spaces, to adapt to the humid and warm climate.

Historical and Cultural Influences: About 75% of respondents reported that their spatial behavior is shaped by Lingnan’s history and culture. They favor incorporating elements like Cantonese opera motifs and stone lions into spatial design.

Lifestyle: Nearly 80% of respondents indicated that their lifestyle significantly impacts their spatial behavior. Social activities, such as gatherings in open spaces, are integral to Lingnan residents’ daily lives and reflected in their spatial

usage.

Research into satisfaction with Lingnan cultural elements in spatial design shows high public acceptance, driven by factors such as cultural identity, aesthetic and artistic value, respect for history and tradition, and lifestyle preferences. Lingnan culture, as a vital component of southern Chinese culture, is deeply embedded in its local lifestyle, architecture, art, and traditions. The distinct style of Lingnan art and architecture, including its garden design philosophy, holds a cherished place in Chinese cultural heritage. Preserving historical culture remains a priority for the community, as these elements symbolize significant traditions. Moreover, leisure-oriented lifestyles embedded in Lingnan culture foster a natural affinity for and acceptance of these features.

Table 2. Engagement Levels with Public Cultural Spaces Across Demographics



3.2. Findings and Analysis

Impact of Human Factors on Micro-Spatial Behavior in Guangdong’s Old Urban Areas. Micro-spatial behavior in Guangdong's old urban areas is profoundly shaped by human factors. Historical and cultural heritage, such as ancient temples and old streets, significantly influence residents’ spatial behavior. These historical sites often serve as hubs for leisure activities, social gatherings, and community events like temple fairs, providing not only physical venues but also shaping behavioral patterns tied to cultural traditions.

Residents’ lifestyles further impact their spatial behavior. Due to compact housing and limited indoor space, many residents extend their activities outdoors, engaging in tasks like drying clothes, playing chess, or chatting with neighbors. This adaptive use of space highlights their resourcefulness and deep understanding of the urban environment.

Community culture is another critical factor shaping spatial behavior in these areas. Strong neighborhood ties foster frequent interactions, with public spaces such as parks, streets, and alleys becoming primary venues for social activities. These interactions underscore the importance of incorporating community dynamics into urban spatial design to enhance social cohesion and connectivity.

Insights from Urban Design and Planning. Effective urban design and planning begin with an understanding of New

Urbanism's core principles, which emphasize human-centered methods to strengthen connections between people and their environment. This approach fosters community ties, a sense of belonging, and cultural identity.

Cultural and Social Contexts. New Urbanism emphasizes the influence of cultural heritage and social norms on spatial usage and behavior. Designs that align with cultural contexts enhance cultural identity and reflect the principles of existential space theory, which posits that spatial design should resonate with its cultural environment. Perceptions of public and private space differ significantly across cultures, highlighting the necessity of context-sensitive design to meet diverse user needs.

Community Participation. A key element of New Urbanism is the active involvement of residents in planning and design processes. This user-centered approach fosters a sense of belonging and responsibility. In collectivist cultures, where public spaces play a vital role in social activities, spatial design must account for group dynamics and diverse behavior patterns among various social groups.

Accessibility and Interaction. New Urbanism also prioritizes accessibility and interaction in streets and public spaces, ensuring inclusivity for people of all ages, genders, and socioeconomic statuses. Optimized street layouts and transportation systems are essential to creating accessible urban spaces. In contrast, individualistic cultures often

prioritize private spaces, with public spaces serving as secondary venues. Proshansky's "place attachment" theory emphasizes the emotional bond between individuals and specific spaces, underscoring the role of cultural and historical landmarks in fostering identity and belonging.

Preserving and revitalizing historical buildings and cultural heritage not only enhance space recognition but also strengthen ties between residents and their environment. Incorporating community culture, social norms, and group dynamics into spatial design offers valuable insights into micro-spatial behavior, guiding urban design to achieve better functionality and inclusivity.

4. Summary

This study examines how Lingnan's cultural heritage, human factors, and community dynamics influence micro-spatial behavior and public space design in Guangdong's old urban areas. The integration of traditional architectural elements, such as arcades, walled houses, and maritime-inspired decorations, with community-oriented designs fosters cultural identity and social cohesion. Findings indicate that elderly residents engage more actively with public cultural spaces, while children and young adults exhibit neutral responses, highlighting the need for inclusive and accessible design strategies.

Key factors influencing spatial behavior include climate adaptability, where 85% of residents favor open and ventilated spaces, and lifestyle-driven uses of public spaces for social gatherings and daily activities. By incorporating New Urbanism principles and engaging local communities in planning processes, this research proposes a framework for sustainable and culturally sensitive urban design that bridges

traditional practices with modern needs. The study underscores the importance of preserving historical elements while creating functional and inclusive spaces that address diverse user needs.

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