

The Impact of Lingnan Cultural Elements on Pedestrian Behavior in Architectural Environmental Art in Guangzhou City

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Abstract:

As urbanization and population growth accelerate, the design and planning of city roads are becoming increasingly crucial to meeting residents' needs. In this context, it's not only the effectiveness of urban infrastructure that needs to be considered, but also the impacts of road environment on pedestrian psychology and behavior, as well as their implications for urban sustainable development and quality of life. Guangzhou, a major city in southern China with its developed urban transport system and comprehensive road environment design, serves as an ideal case to analyze these issues. This study focuses on exploring how the road environment design in Guangzhou impacts pedestrian psychological perception and behavioral choices.

Keywords:

Lingnan Culture, Environmental Design in Guangzhou, Pedestrian Behavior

1. Introduction

This study emphasizes the role of architectural environment art in improving pedestrian behavior and psychology. In particular, the study found that incorporating the essence of Lingnan culture into architectural environment art not only promotes the harmonious integration of cultural elements with modern urban infrastructure but also has a positive impact on pedestrian psychology and behavior. Specifically, the main findings of this study are that the road environment design in Guangzhou significantly improved pedestrian comfort and safety. In addition, by integrating Lingnan cultural elements into the architectural environment art, the sense of identity and belonging of pedestrians is enhanced, subtly influencing their behavior and improving their urban experience.

On a broader level, this study highlights the great potential of architectural environment art and cultural integration in shaping pedestrian behavior and psychology, which has profound implications for promoting urban sustainability and improving residents' quality of life. Therefore, further exploration and development of this research direction may provide innovative methods for urban design, especially in the context of rapid urbanization.

2. Research Background

The pace of urbanization is accelerating globally, with United Nations reports predicting that nearly 70% of the world's population will live in cities by 2050. Among them, China, as the country with the largest population in the world, the impact of urbanization is particularly significant, highlighting the importance of urban road design and planning [1].

City roads are a crucial part of urban life, key places for residents' commuting, communication, and leisure. Roads are not merely physical channels connecting different parts of a city; they profoundly affect residents' lifestyles and behavioral patterns, influences that permeate all aspects of urban life, including urban sustainable development and the quality of life of residents.

In recent years, attention has increasingly focused on how to improve urban sustainability by improving pedestrian comfort, safety, and behavior choices. Studies have found that a comfortable and safe pedestrian environment can enhance the willingness of pedestrians to travel, encourage walking and non-motorized travel, reduce private car usage, alleviate traffic congestion and air pollution, and improve urban sustainability. Meanwhile, pedestrian comfort and safety directly impact their life satisfaction and sense of well-being.

Based on this background, this article studies the impact of Guangzhou's road environment design on pedestrian psychological perception and behavioral choices. Guangzhou, located in southern China and a major city in the Pearl River Delta economic region, with its relatively developed urban transport system and comprehensive road environment design, is an ideal place to understand and discuss this issue [2].

This study adopts a comprehensive research method to deeply explore the impact of Guangzhou's road environment design on pedestrian psychological perception and behavioral choices. The research covers all aspects of the road environment, including the layout of roads, the design of pedestrian facilities, the setting of public green spaces and public art, and the role of architectural environment art.

3. Literature Review

Lingnan traditional architecture is distinctively regional, particularly exemplified by its use of indoor, outdoor, and garden spaces as significant conveyors of humanistic connotations. This emphasis on space shows a harmonious blend of humans and nature in its decorative styles and methods [3]. Modern environmental art design, while being more open, has taken elements from Lingnan's traditional architecture. It has integrated these elements into the diversity of architectural styles, aligning with the unique natural and social environment of Lingnan. Consequently, this has enriched and broadened the essence of Lingnan culture [4]. Through its remarkable inclusiveness, Lingnan culture has gradually forged a unique architectural culture, born from the synthesis of Wu, Chu, Yue, Han, Miao, Yao, and overseas cultures. Modern environmental art design draws inspiration from these traditional elements of Lingnan architecture, using them to create and maintain ecological living environments. The resulting new artistic forms accentuate the charm of modern residential landscapes [5].

Environmental art design holds a crucial role in modern comprehensive system design and is an interdisciplinary field that integrates architecture, sculpture, fine arts,

decorative culture, materials science, and garden art. Lingnan architecture is deeply rooted in its unique traditions, bearing the impressions of traditional Chinese culture, Western culture, and Lingnan's regional culture. These multiple influences pave the way for a fresh approach in architectural art, which epitomizes harmony between humans and nature [6]. Issues concerning the styling in architectural design often find resolution in the fusion of architectural science and art. In this regard, the handling of the styling space is closely tied to the ideological and local attributes that the architecture embodies. Therefore, this article aims to delve into the ecological and aesthetic facets inherent in environmental art design by examining the styling design of Lingnan architecture and by exploring the humanistic space that Lingnan architectural styling presents.

Lingnan culture, shaped by its unique climate, geographical location, and diverse foreign cultures, embodies a distinctive amalgamation formed from the convergence and collision of these influences. Lingnan architecture embraces a design philosophy that respects natural laws and puts people at the center. The article will analyze specific examples from modern Lingnan architecture, gardens, and residential houses [7]. It will underscore the necessity for designers in environmental art design to preserve the Lingnan design style and courageously innovate to steer Lingnan architectural art towards novel developments.

This paper delves into the concepts of urban social psychology and environmental psychology, presenting the city as a collective experience for thousands of people from varying classes, ethnicities, and personalities. The streets and roads are regarded as the city's skeleton and veins, serving dual functions of traffic and space. Using Guangzhou as a case study, a city rich with cultural heritage, the paper will propose design principles for road landscapes. It takes the environmental facilities on the streets as the point of entry for studying street landscape environments. The paper points out the existing issues in urban construction, where the focus is predominantly on traffic functions, overshadowing the significance of outdoor activity places [8]. To address this, the paper suggests applying urban environmental psychology to approach facility design and construction from a human-centric perspective. Furthermore, it offers recommendations concerning the mechanisms and management of the facility design and construction process on domestic streets. Urban road green spaces are the structural framework for urban greening and serve as key visual and sensory venues for people to comprehend the city, playing a pivotal role in shaping people's impressions of the city [9]. Beyond acting as corridors and windows to display the city's character, these green spaces primarily serve the users within them. The paper strives to marry the foundational theories of environmental psychology with the practical aspects of creating road green landscapes. By considering the psychological profiles of the users and tailoring to local conditions, the goal is to design urban road green space landscapes that are genuinely human-centric.

4. Guangzhou Urban Transportation System and Road Environment Design

Located in the Pearl River Delta, Guangzhou is one of the most economically vibrant regions in southern China. The transportation system and road environment design in Guangzhou, due to its unique geographical location and population density, hold a distinctive status both domestically and internationally. The city emphasizes coordination and balance between public transportation and non-motorized vehicles, which characterizes its urban transportation system design.

The road environment design in Guangzhou includes aspects such as the physical layout of roads, the design of pedestrian facilities, the setup of public green spaces, and public art. This comprehensive design thoroughly considers pedestrians' needs and psychological experiences, aiming to create a pedestrian environment that is aesthetically pleasing, practical, comfortable, and safe. This design method in Guangzhou not only profoundly influences residents' daily lives but also serves as a model for other cities to learn and draw from.

4.1. Development of Guangzhou's Urban Transportation System

In Guangzhou's public transportation system, the main modes of transport include subways, buses, and taxis. The subway network covers the entire city, providing convenient services to millions of residents and visitors daily. Buses run through urban and suburban areas and are an essential supplement to the subway network. Taxis offer citizens more personalized and flexible travel options.

However, Guangzhou's urban transportation system is not limited to public transportation; it also includes non-motorized modes of transport such as walking and bicycling. In terms of road design, Guangzhou prioritizes pedestrians over vehicles. Spacious sidewalks, well-equipped bicycle lanes, and comfortable public rest areas are spread throughout the city, fully meeting the needs and safety of pedestrians and non-motorized vehicle users. This design concept in Guangzhou has won widespread acclaim domestically and internationally.

4.2. Features of Guangzhou's Road Environment Design

Guangzhou also emphasizes the integration of green and artistic elements in its road environment design. Many areas in the city are adorned with green belts and public art pieces. Green belts beautify the urban environment while also mitigating the urban heat island effect and improving ecological quality. Public art pieces enrich the visual experience of the citizens and enhance the city's cultural atmosphere.

While fulfilling functional demands, Guangzhou also strives to achieve high aesthetic and ecological standards in its road environment. This thoughtful and meticulous transportation system and road environment design have positioned Guangzhou at the forefront of promoting urban sustainability and improving the quality of life for its citizens. The experiences and practices in Guangzhou will provide valuable references for future urban planning and design nationally and globally.

5. Environmental Art in Architecture

The art of the built environment plays a critical role in urban design, shaping and influencing the psychological perceptions and behaviors of pedestrians. By beautifying the urban environment, enriching urban space, and enhancing the quality of the city, the art of the built environment has a positive impact on the psychology and behavior of pedestrians [10]. In Guangzhou, the art of the built environment has been deeply integrated into all aspects of urban design and planning, including public spaces, building complexes, and road design.

5.1. Concept and Application of Environmental Art in Architecture

In public space design, Guangzhou has fully utilized the methods of the art of the built environment to create a series of charming public spaces. For example, parks,

squares, and street art projects have adopted elements such as sculptures, murals, and installations, providing residents and tourists with rich visual and interactive experiences. These designs not only enhance the aesthetic level of the city but also endow the city with more vitality, encouraging pedestrians to stay and walk more in the city.

In the design of building complexes, Guangzhou has also vigorously integrated elements of the art of the built environment, shaping unique and locally characterized building complexes. For example, unique sculptures and art installations can be seen in newly built residential communities and commercial complexes. These artistic elements allow the building complexes to provide a rich art experience while meeting functional needs, enhancing the urban experience of pedestrians, and having a positive impact.

The city of Guangzhou applies elements of the art of the built environment to road design, creating beautiful and comfortable road environments. For example, public art works and landscape designs have been cleverly integrated into some major roads and streets. Such designs meet traffic needs while also providing an art experience, enhancing the visual effects of the roads, and improving the comfort and safety of pedestrians.

Overall, the application of environmental art in architecture in Guangzhou undoubtedly has a positive impact on the psychology and behavior of pedestrians. This practice shows us that integrating the art of the built environment into urban design and planning can enhance the aesthetic level and quality of the city and contribute to the sustainable development of the city.

5.2. Lingnan Culture and Environmental Art in Architecture

As a unique form of culture in southern China, Lingnan culture has had a profound impact on urban design and planning in Guangzhou. Guangzhou extensively integrates the deep historical accumulation and unique artistic style of Lingnan culture into the art of the built environment, providing pedestrians with a rich cultural experience and positively influencing their behavior.

The design of public spaces is an important area where Lingnan culture is manifested. Guangzhou uses elements such as Lingnan gardens, traditional Lingnan architecture, Lingnan stone carvings, and other elements to enrich public spaces with local characteristics. For example, some parks and squares incorporate antique Lingnan garden designs, Lingnan stone carving decorations, etc., into their designs. This not only enhances the aesthetic quality of the space but also enriches the cultural connotations of public spaces, positively influencing pedestrian behavior.

In the design of building complexes, Guangzhou also fully utilizes elements of Lingnan culture, such as traditional Lingnan architecture and Lingnan painting, making the building complexes full of local flavor. For example, newly built residential communities and commercial complexes incorporate elements like antique Lingnan architectural styles, Lingnan painting decorations, etc. These designs enrich the cultural connotations of the building complexes while enhancing aesthetic quality, positively impacting pedestrian behavior.

Guangzhou introduces elements of Lingnan culture, such as Lingnan stone carvings and Lingnan paintings, into road design, making the road environment full of local color. For example, some main roads and streets incorporate elements such as

Lingnan stone carving decorations, Lingnan painting decorations, etc. These designs not only enhance the visual effects of the roads but also add to the cultural connotations of the roads, providing pedestrians with a rich cultural experience and positively influencing their behavior.

In conclusion, Guangzhou has successfully incorporated elements of Lingnan culture into the art of the built environment, injecting rich local color into urban spaces, providing a rich cultural experience, and positively influencing pedestrian behavior. This provides valuable experience on how to effectively use elements of local culture in urban design and planning.

6. Impact of Lingnan Cultural Elements in Architectural Environmental Art on Pedestrian Behavior in Guangzhou

6.1. Research Methods and Processes

This study explores how Lingnan cultural elements in architectural environmental art affect pedestrian behavior in Guangzhou through qualitative and quantitative methods. Qualitative research involves observing the architectural environmental art of Guangzhou and conducting interviews with pedestrians to gain a deep understanding of their feelings and experiences. At the same time, quantitative research involves tracking and recording pedestrian behavior and using questionnaires to quantify the impact of Lingnan cultural elements on pedestrian behavior.

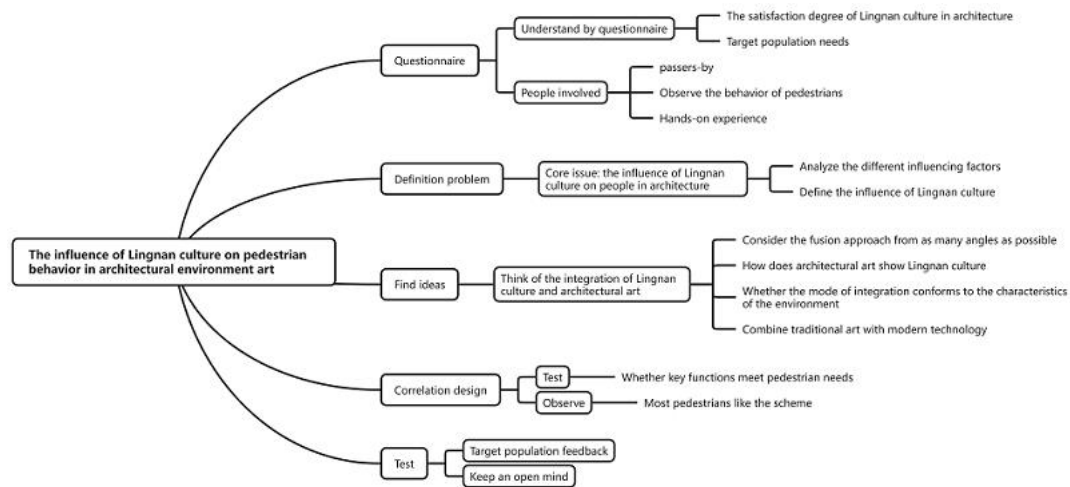


Figure 1. Research project schedule.

6.2. Research Results

a. Improvement in Comfort and Safety: The comfort and safety of pedestrians in Guangzhou have been enhanced to some extent due to the use of Lingnan cultural elements. For example, pedestrians can find pleasant resting and activity environments in public spaces designed with Lingnan gardens, while the broad eaves of traditional Lingnan architecture provide places for pedestrians to shade and avoid rain.

b. Enhancement of Identity and Belonging: The application of Lingnan cultural elements helps to strengthen the sense of identity and belonging of pedestrians. Our research found that the presence of Lingnan cultural elements makes pedestrians identify more with Guangzhou and feel more deeply that they are a part of Guangzhou.

c. Improvement in Pedestrian Behavior and Urban Experience: According to our data, Lingnan cultural elements play a positive role in improving pedestrian urban experiences and influencing pedestrian behavior. For example, when pedestrians pass roads decorated with Lingnan stone carvings and paintings, they naturally stop to admire and take photos, enjoying the pleasure brought by the cultural atmosphere.

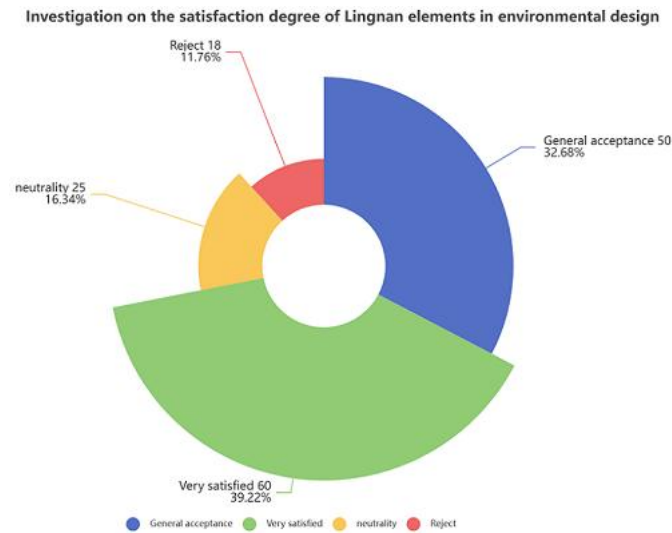


Figure 2. Questionnaire statistics.

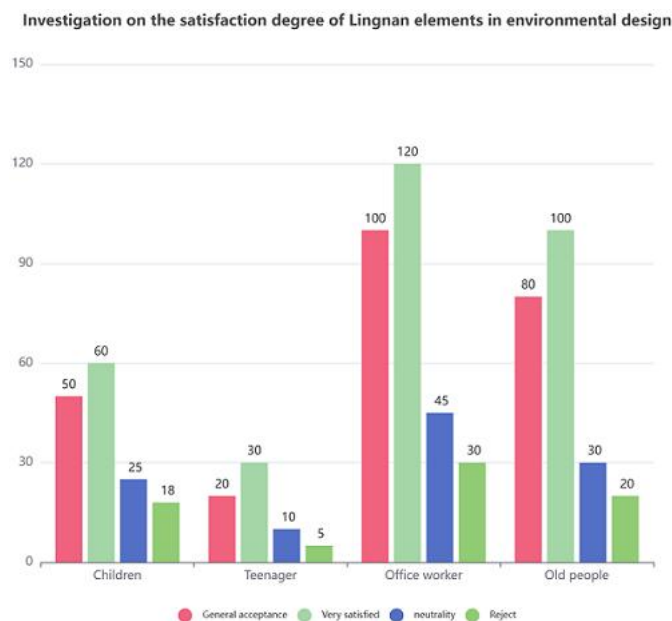


Figure 3. Questionnaire results of different populations.

6.3. Analysis and Interpretation

In general, Lingnan cultural elements in architectural environmental art have had a positive impact on pedestrian behavior in Guangzhou. These impacts are manifested in improving pedestrian comfort and safety, enhancing their sense of identity and belonging, and improving their behavior patterns and urban experiences. These research results further prove that it is very important to fully consider and integrate cultural elements in urban design and planning. This not only can enhance the livability of the urban environment, but also guide positive pedestrian behavior, thereby improving their quality of urban life.

7. Conclusions

This study, by specifically examining the road environment design in Guangzhou and its integration with Lingnan cultural elements, demonstrates the subtle interaction between pedestrian behavior, the environment, and culture. The application of Lingnan culture not only enriches the urban cultural landscape but also positively impacts the behavior patterns of pedestrians in Guangzhou, enhancing their urban living experience [11].

Though observed that quality road environment design is crucial for enhancing pedestrian comfort and safety. At the same time, the introduction of cultural elements enhances pedestrians' sense of local belonging and cultural experience, indirectly guiding and influencing their behavior choices. This provides us with a new perspective: in urban planning and design, it should be fully considered the impact of environmental and cultural factors to enhance the quality of urban life.

While this study has, to a certain extent, clarified the impact of the integration of architectural environmental art and culture on pedestrian behavior, many related issues remain to be further explored. For example, pedestrians with different cultural backgrounds may have different levels of acceptance and reactions to cultural elements, which will help us understand more deeply the role of cultural elements in influencing pedestrian behavior. Moreover, in a rapidly urbanizing society, how to more effectively integrate cultural elements into urban design is also a topic worthy of study.

Therefore, future research can build on this study to explore from more angles and dimensions the application of the integration of architectural environmental art and culture in urban design, and their impact on pedestrian behavior and psychology. This will provide more insights for urban planning and design, making a greater contribution to enhancing urban sustainability and the quality of life of residents.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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