

Title

Planning Age-Friendly Health Communities in Rural Guangzhou

Project Statement

Aging is a global trend that presents significant challenges, especially in China's rural areas. In these regions, the elderly population experiences heightened loneliness due to the dramatic changes in the rural environment brought about by urbanization. Current statistics highlight that a staggering 78.1% of elderly individuals in rural China suffer from moderate to severe levels of loneliness, posing a serious threat to their mental and physical health.

This project utilizes fieldwork and spatial analysis to gain comprehensive insights into the causes of loneliness and the environmental factors influencing it. Extensive interviews were conducted with a diverse group of local elders, community workers, psychologists, sociologists, and landscape architects, resulting in multifaceted and interdisciplinary perspectives. By integrating spatial mappings of loneliness scores, local Moran's I autocorrelation, population density heatmaps, and three rural space typologies, we have identified the specific spaces that require targeted planning and design interventions.

Additionally, we propose three strategic toolkits: environmental design, interpersonal interaction, and social support. By implementing these toolkits in the identified spaces, we aim to improve the rural outdoor environment and encourage elderly participation in social activities. These toolkits are designed to alleviate loneliness, enhance the well-being of the elderly, and ultimately foster harmony and sustainable development in rural communities.

Project Narrative and Contents

Background

Aging has emerged as a global trend, posing significant challenges, particularly in China with its substantial elderly population. The advancing trends of urbanization and industrialization have led to an outflow of the younger population, leaving the elderly to maintain their homes alone, which exacerbates the prevalence of loneliness among the elderly. Wang et al. (2019) reported that approximately 78.1% of the elderly in rural China experience moderate to high levels of loneliness, posing serious threats to their physical and mental health.

Weiss (1975) distinguished between "social loneliness" and "emotional loneliness," while Bolmsjö et al. (2019) introduced the concept of "existential loneliness." Emotional loneliness arises from a lack of intimate relationships, social loneliness from not integrating into larger

groups, and existential loneliness from a sense of meaninglessness. Our study delves into these three dimensions of loneliness.

Research indicates that natural spaces and social interactions can effectively reduce loneliness. However, existing studies lack insights into how specific green spaces and supportive groups affect various dimensions of loneliness. Therefore, this research explores why the rural elderly feel lonely, what factors contribute to their loneliness, and how to alleviate it.

Location

As a key city in the Guangdong-Hong Kong-Macao Greater Bay Area, Guangzhou is experiencing rapid economic development while gradually transitioning into a mildly aging society. Huadu District, in particular, is undergoing significant transformation. By the end of 2020, Huadu District had approximately 100,000 individuals aged 65 and above, marking it as one of the most aging-prone areas in Guangzhou. Notably, Huadu District has a high proportion of "pure elderly households," "empty nesters," and "elderly living alone."

To explore the relationship between loneliness among the elderly and rural spaces, this project selected densely populated streets with diverse types of rural public spaces in Huadu District, Guangzhou, as the case area. After conducting field investigations, specific villages were chosen for the study, including Changgang Village, Dongbian Village, Daling Village, Guangtang Village, Qingxi Village, Shitang Village, Dongjing Village, Qishan Village, Jiutan Village, and Maxi Village.

Our team engaged in extensive discussions with local elderly residents, village committees, community service personnel, and professionals specializing in psychology, sociology, and environmental studies. Utilizing a panoramic camera, we captured 50,532 panoramic images across ten villages in Huadu. Concurrently, we disseminated 449 questionnaires, employing the ULS-6 scale to assess the loneliness experienced by the elderly in rural Huadu. We also applied computer vision techniques to extract elements from all image data and calculate their visual metrics. Finally, we analyzed the correlation between loneliness scores and visual metrics to identify environmental factors impacting the sense of loneliness among the elderly in rural areas.

In light of this analysis, coupled with local Moran's I analysis and population heat maps, Maxi Village was chosen as a case study for comprehensive planning. The study aims to redesign leisure, cultural, and production spaces to offer tangible solutions aimed at mitigating elderly loneliness.

Strategies and Applications

We integrate insights from field interviews on the needs of the elderly, multi-party dialogues on principles for designing rural environments conducive to the elderly, and spatial analysis results. These findings are aligned with three dimensions of loneliness—social, emotional, and existential—to develop corresponding strategy toolkits:

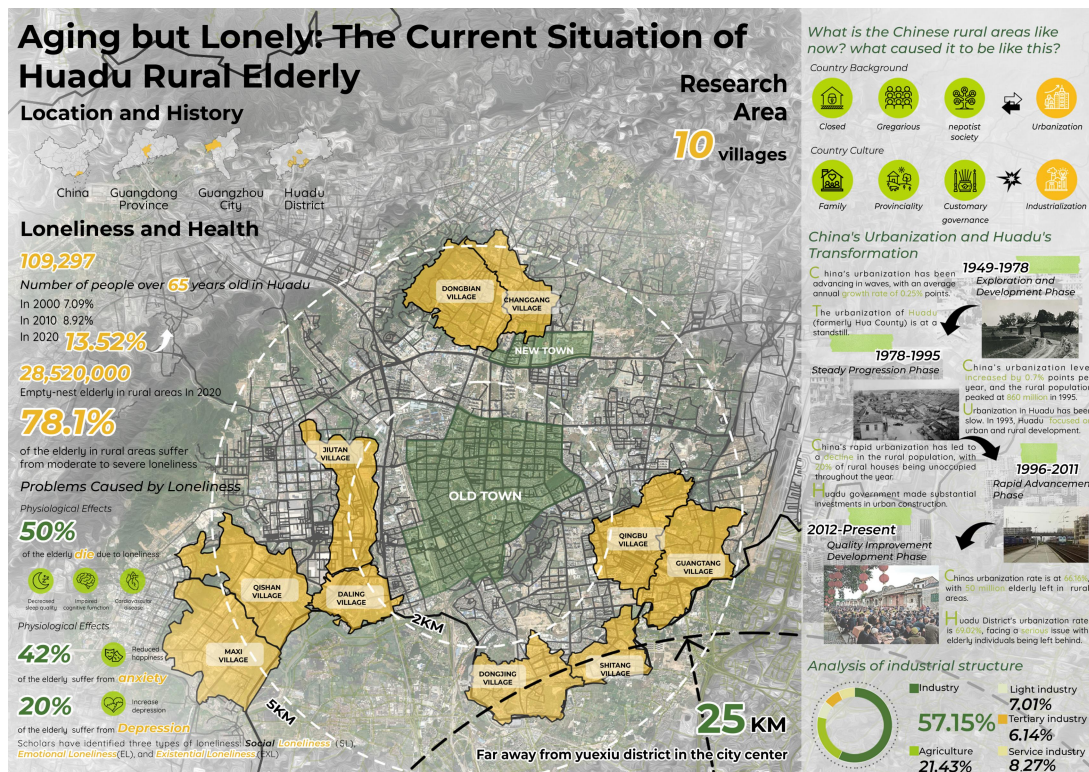
a. Environmental Design Toolkit: This toolkit focuses on enhancing infrastructure for better accessibility, including mobility facilities and improved lighting. It also seeks to preserve the authentic character of rural areas by creating cultural plazas and renovating ancestral hall squares,

thereby maintaining the cultural identity and historical significance of these spaces. Additionally, it promotes the development of leisure and social spaces such as intergenerational activity areas and venues for board games and entertainment, fostering social interaction and community engagement among the elderly.

b. Interpersonal Interaction Toolkit: This toolkit involves collaborative efforts among family members, neighbors, and non-governmental organizations to meet the elderly's need for companionship and social interaction through community activities that enrich their daily recreational pursuits.

c. Social Support Toolkit: This toolkit addresses healthcare security, economic support, and services within the elderly care industry provided by official institutions, facilitating the utilization of societal resources in an elderly-friendly manner.

These toolkits enable landscape architects and rural practitioners to better understand the nuances of loneliness experienced by the elderly and to implement targeted improvements. They hold significant value in guiding the creation of elderly-friendly environments and advancing initiatives for healthy aging in rural areas.



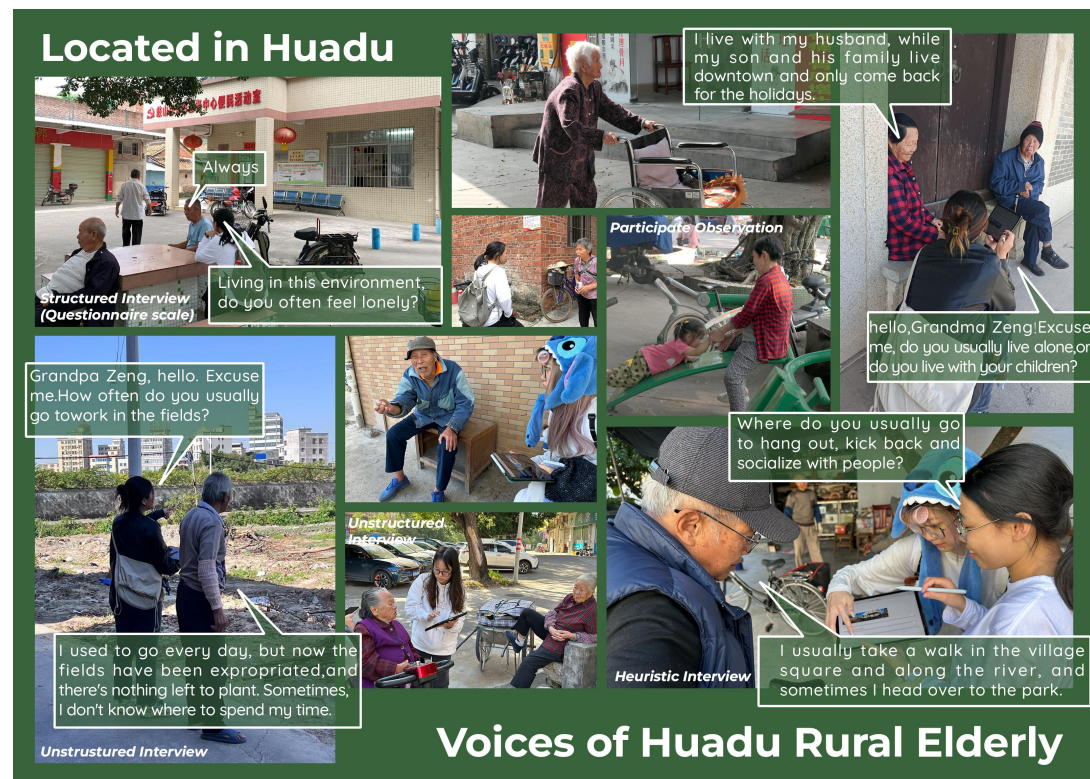
1. Aging but Lonely: The Current Situation of Huadu Rural Elderly

Reports and studies reveal a stark reality: urbanization, industrialization, and marketization are intensifying the aging crisis in China's rural areas, with a staggering 78.1% of the elderly experiencing moderate to severe loneliness.



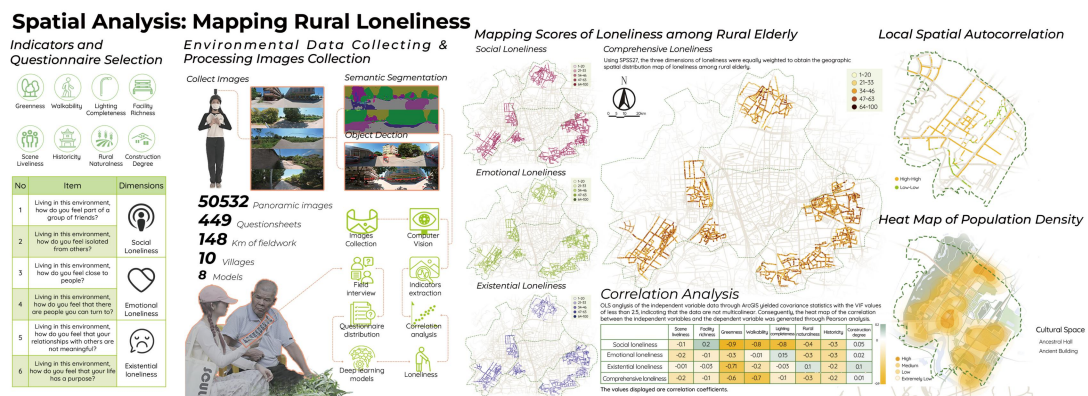
2. Voices of Multi-party Professionals

Interviews with community workers, psychologists, sociologists, and landscape architects to gain comprehensive insights into elderly loneliness in rural areas.



3. Voices of Huadu Rural Elderly

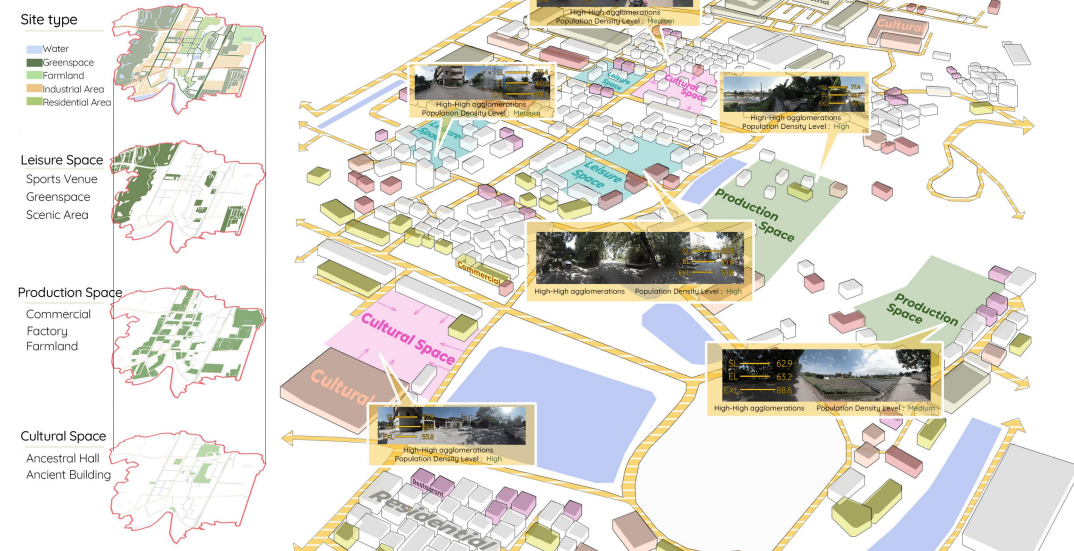
Employing four fieldwork methods to identify the varying genuine needs of the elderly in Huadu's rural areas.



4. Spatial Analysis: Mapping Rural Loneliness

Deep learning and spatial analysis methods were used to train regression models based on loneliness questionnaires and we predict and visualize loneliness distribution.

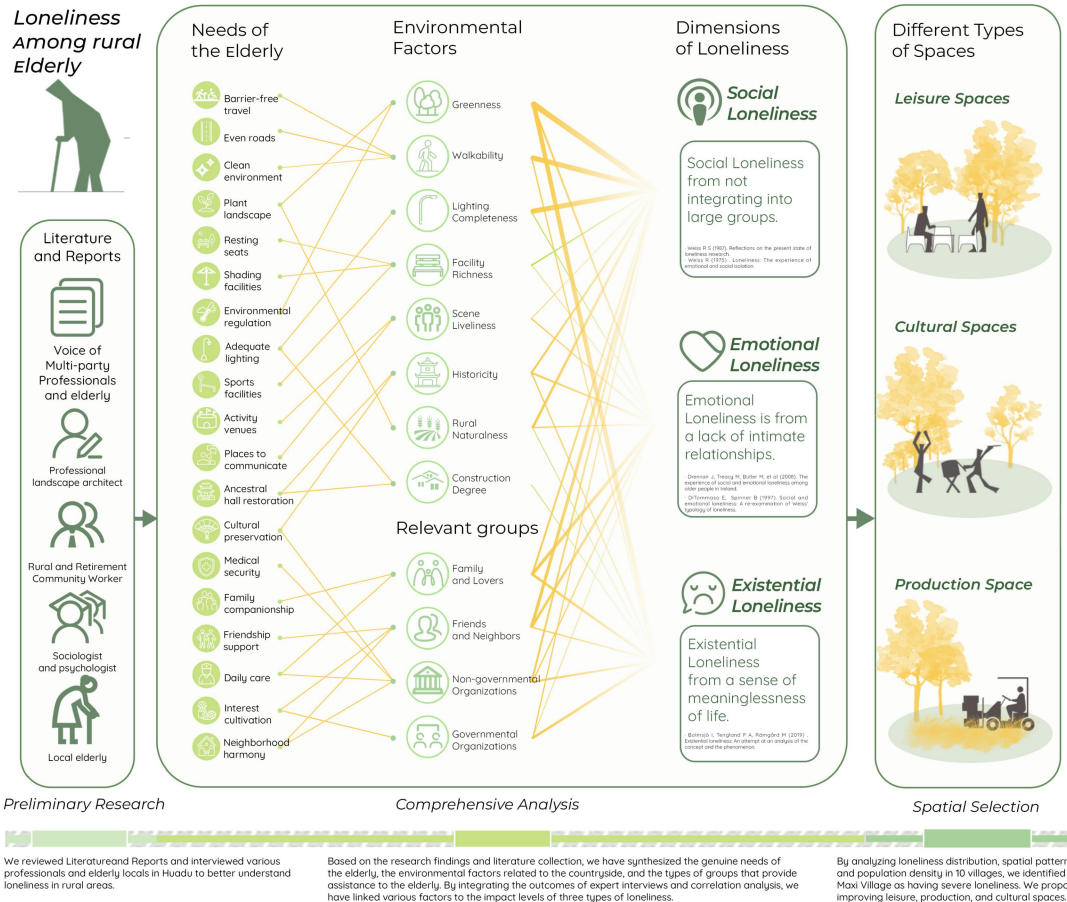
Assessing the need for reform in certain areas based solely on the distribution of loneliness is not a holistic approach, as it is essential to consider spatial heterogeneity and the efficiency of spatial utilization. Therefore, using Maxi Village as a case study, we categorize three types of rural spaces that are candidates for reform by integrating key factors such as the distribution of loneliness, local spatial autocorrelation, population heat maps, and land use plans: recreational spaces, cultural spaces, and production spaces.



5. Spatial Diagnostics: Targeting Three Rural Spaces

By combining the distribution of loneliness, the local Moran's I autocorrelation and population density heatmaps, we determine the target space based on three spatial types.

Evidence-Based Toolkits in Healing Loneliness



6. Evidence-Based Toolkits in Healing Loneliness

Based on the conclusion and analysis of the above research results, a toolkit for three dimensions of loneliness is proposed.

Comprehensive Toolkits for Healing Loneliness in the Rural Elderly

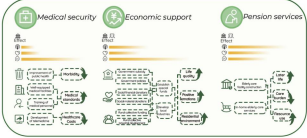
Environmental Design Toolkit



Interpersonal Interaction Toolkits



Social Support Toolkits



Application of Environmental Design Toolkit Toolkits

Focusing on enhancing the built environment for the elderly by improving infrastructure, such as adding accessible pathways, shade, and lighting. It also fosters social interaction and community engagement among elderly by providing spaces for cultural activities and intergenerational events.

Application of Interpersonal Interaction Toolkits

This toolkit involves family, neighbors, and NGOs working together to provide companionship and social interaction for the elderly through community activities, enriching their daily lives.

Application of Social Support Toolkits

The provision of healthcare security, economic support, and elderly care-including services is supported by official institutions, which is benefit utilization and interaction of social resources in an elderly-friendly manner.

7. Comprehensive Toolkits for Healing Loneliness in the Rural Elderly

Proposing three toolkits to heal it: Environmental Design, Interpersonal Interaction, and Social Support.

APPLICATIONS OF TOOLKITS: ENHANCING RURAL LEISURE



8. Applications of Toolkits: Enhancing Rural Leisure Spaces

Enhancing spaces for the elderly with native plants and activities promotes family and generational ties, with integrated healthcare ensuring health access.

APPLICATIONS OF TOOLKITS: TRANSFORMING RURAL



9. Applications of Toolkits: Transforming Rural Cultural Spaces

Planting to foster a refreshing microclimate, and developing cultural spaces and festive events to enhance elderly community engagement and a sense of belonging.

APPLICATIONS OF TOOLKITS: REVITALIZING RURAL PRODUCTION SPACES

The current status of Production Space



10. Applications of Toolkits: Revitalizing Rural Production Spaces

Shade and lighting improvements ensure an accessible and convenient environment; government subsidies foster sustainable, ecological agriculture.