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Doctoral Dissertation

Research on the Adaptability of Outdoor Sites in Urban Communities  
to Meet the Needs of Elderly Activities

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# Abstract

Unlike developed countries, developing countries are aging very fast. China has the largest elderly population in the world. The aging population has brought unprecedented challenges to urban community infrastructure. The outdoor environment of communities can no longer meet the needs of the aging elderly. When the elderly population gradually becomes the main body of the population structure, their interest needs should be given enough attention. The research on the aging-friendly outdoor sites in urban communities is of great significance for the development of the elderly care model in China and the improvement of the living quality of the elderly. It also gives inspiration to developing countries that are about to enter the aging process.

The elderly livable community is a complex giant system, and its influencing factors are also characterized by pluralism and complexity. This research studies the aging-friendly outdoor sites in urban communities meeting the needs of elderly activities from the perspective of community outdoor environment, elderly activity needs and scientific evaluation.

In order to achieve the above objectives, the following three models have been constructed in this thesis. The typical communities in Dalian have been selected as examples for empirical research. 1. The supply and demand model of outdoor sites in urban communities. On the basis of the theory of supply and demand balance, the Likert scale Method and Semantic Differential Method (SD) have been used to make quantitative and qualitative research on the matching relationship between supply and demand of outdoor activity sites in sample communities. 2. Model for determining whether individual and community outdoor sites are aging-friendly. Based on P-E Matching theory, use One-way Analysis of Variance and post hoc test to study the differences in the needs of the elderly at different ages, with different physical conditions, device-aided elderly and nursing-cared elderly. Make path analysis of personal attributes, family attributes, physical conditions, activity habits and outdoor sites satisfaction and demand degree, and the relationship among several variables. 3. Outdoor environment evaluation system of elderly livable communities. Based on grounded theory, integrating literature review and in-depth interviews and in combination with the relevant specifications, the evaluation system is constructed. The evaluation process consists of the weight calculation of the evaluation index system and the index scores of each sample community, and the corresponding countermeasures are given.

The results show that: 1. The supply and demand of gated and gated group communities are well balanced. The allocation of environmental factors for the supply and demand balance should be maintained. Overdemand in open communities is obviously, which has been significantly improved after renovation. Emphasis should be placed on improving and perfecting the configuration of environmental factors in overdemand. 2. There are great differences in the activity needs of different elderly people. If the individual has no pressure in the environment, and the satisfaction of the community's outdoor environment is high, it can be judged that the person matches the environment, and the environment is aging-friendly, and vice versa. The interaction and influence among individuals, families and activity habits determine the activity needs of the elderly. Meeting the activity preferences of the elderly can effectively improve the use efficiency of the site. 3. The evaluation results reflect that the overall evaluation of the quality of the livable environment for the elderly in the sample communities is not high, indicating that most communities have not yet made adequate preparations for the coming aging society. There are some common problems in the community environment construction, but the differences between communities are also obvious. Targeted design strategies are needed.

The study on the adaptability of outdoor sites in urban communities meeting the needs of the elderly provides a positive and effective action path to solve many social problems caused by aging. This multi angle study is a scientific, comprehensive and quantitative consideration of all environmental factors affecting the outdoor activities of the elderly. On the one hand, the study reflects the significant differences of urban communities in the construction of aging-friendly

outdoor environment sites. On the other hand, it provides a practical basis and theoretical guidance for how communities adapt to the changes of population age structure and create a suitable outdoor environment for the elderly under the background of aging. It enriches the research on livable communities for the elderly, and provides a new research perspective for the research on human settlement environment science and aging geography.

Key words: Urban community outdoor sites, Aging-friendly, Supply and demand model, P-E model, Evaluation system