



Creating Age-Friendly City Through Inclusive Public Space Design

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ABSTRACT

Indonesia will become one of the countries experiencing demographic aging, and the percentage of people over 65 years old will continue to increase every year. Yogyakarta is known as a province with a higher elderly population than the national average. The Yogyakarta City Government has an integrated service program for the elderly at the sub-district level to create an elderly-friendly city. This study aims to provide design innovation through an inclusive design approach by analyzing the spatial pattern of elderly-friendly villages. This study will take a case study of the implementation of the Integrated Elderly Service program in Wirogunan sub-district as a pilot project, specifically in Bintaran village. From the results of this study, several recommendations can be put forward, one of which is the need for a green open space management program in the Bintaran village environment. This can be a more environmentally friendly solution by involving all elements of society, from young to old, working together to create elderly-friendly public facilities.

Keywords: Design, Inclusive, Elderly, Community

INTRODUCTION

The increasing number of elderly people is a global phenomenon that occurs not only in developed countries but also in developing countries, including Indonesia. Age-friendly social policies are crucial amid the growing number of older adults. The right to life, as well as protection and welfare policies for the elderly in Indonesia, are regulated in Law Number 13 of 1998 concerning the Welfare of the Elderly. Despite the existing legal framework for older adults, it is crucial to establish a sustainable, strategic roadmap to support their welfare in Indonesia. Various government efforts have been made to address the elderly, who are considered vulnerable or nonproductive members of the Indonesian population. Indonesia will become one of the countries experiencing demographic aging; the percentage of people aged 65 years and older continues to increase annually (Djamhari, Eka Afrina, et al., 2020). The problem of population aging is a development challenge that must be addressed before Indonesia enters the demographic bonus era in 2030. The Demographic Bonus phenomenon, commonly known as the Population Explosion, is characterized by a much larger number of productive-age people than non-productive-age people

(Sutikno, Achmad Nur, 2020).

Aging population, or population aging, according to the United Nations, is a phenomenon that occurs when the median age of a region's or country's population increases due to rising life expectancy or declining fertility rates (Heryanah, 2015). The aging population trend has important implications for the International agreement embodied in the SDGs, particularly the principle of "Leave No One Behind," which aims to ensure healthy living and improve welfare for all ages (Dugarova, Esuna, 2017). The elderly are among the vulnerable groups that have not yet received sufficient attention from all parties. Three main factors make older adults vulnerable: reduced economic productivity, health problems, and the need for companionship and caregiving (National Team for the Acceleration of Poverty Reduction, 2020). However, the level of vulnerability differs from one another, the social department divides the elderly into two categories; (1) potential elderly who are still able to carry out activities and are not dependent on others, and (2) non-potential elderly who are no longer able to carry out activities and need help from others (Ministry of Social Affairs of the Republic of Indonesia, 2008). The welfare of the elderly

is one of the targets in the Indonesian government's National Medium-Term Development Plan (RPJMN), increasing this welfare can be realized in the form of increasing social welfare through community development, the environment, and infrastructure for the elderly and respect, protection, and fulfillment of the needs of the elderly (Indrianti, Nur., et.al, 2022).

Yogyakarta has a population of older adults exceeding the national average; rising life expectancy contributes to this (Suriastini et al., 2013). One factor contributing to Yogyakarta's status as the province with the largest elderly population nationally is its increasing life expectancy. This increase is influenced by sociological conditions that support elderly people in maintaining active lifestyles. Empowering rural areas as residential areas affects the quality of life of the elderly residing there. Anticipating the growing number of elderly residents, the city government is preparing policies to make Yogyakarta an elderly-friendly city, including the launch of the Integrated Elderly Services (LLT) program. The first pilot project was launched in Wirogunan Village in 2022. The program was expanded to three villages a year later, demonstrating the implementation of LLT in Baciwo, Gedongkiwo, and Purbayan (news portal: warta.jogjakota.go.id, 2022). In an effort to realize an elderly-friendly city, support from various stakeholders is needed to improve the physical environment, social environment, living environment, infrastructure, and economy as indicated by the World Health Organization (WHO) in the eight dimensions of an elderly-friendly city, including: (1) Availability of open space, (2) An elderly-friendly transportation system, (3) Elderly-friendly housing, (4) Social participation, (5) Respect and inclusion of the elderly, (6) Civic participation and employment, (7) Availability of information and communication, and (8) Community support and health services (J., Van Hoof, 2021).

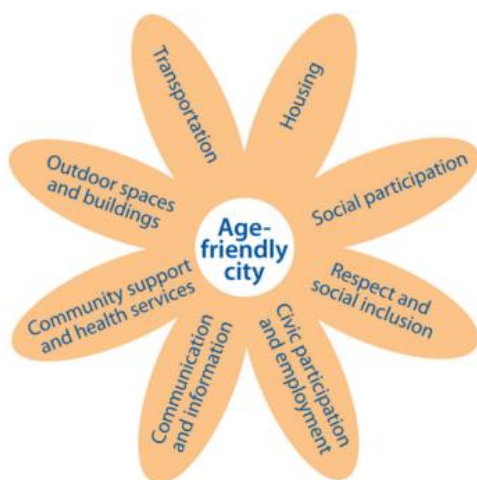


Figure 1. Dimensions of Age-Friendly Cities and Communities
Source : Adaptation from WHO, 2007

To achieve the dimensions set by WHO, the

Yogyakarta City Government will prepare a "YOGYAKARTA CITY REGIONAL ACTION PLAN TOWARDS AN ELDERLY-FRIENDLY CITY". The development of Yogyakarta as an elderly-friendly city can be achieved through commitment and consensus on work program indicators, including mapping potential, mapping deficiencies, and analyzing the elderly-friendly city of Yogyakarta (Roadmap of Yogyakarta City Towards an Elderly-Friendly City, 2019). Given the high and rapidly increasing number of elderly people, Yogyakarta should serve as a role model for other regions in managing the elderly. Although not yet an age-friendly city, the presence of various facilities for older adults, particularly in the health sector and senior schools, can serve as a model for other provinces. In addition to projecting a productive generation as a demographic bonus that will peak in 2035, the vision of Indonesia Emas 2045 also acknowledges that one-fifth of Indonesia's population is elderly. It is estimated that by 2045, the elderly population will reach 19.9%. As the second stage of the demographic bonus, this reality must be faced with appropriate strategies and policies (Sustiwi, Fahmi, 2024).

The results of the assessment study of Yogyakarta as an elderly-friendly city have been conducted by (Suriastini., et.al, 2013), from the results of the assessment conducted on a sample of several cities in Indonesia, it shows that the level of suitability of the town of Yogyakarta based on 8 WHO parameters is quite good, namely 48% Better than the general situation in 14 Indonesian cities which only reached 43%. The leading dimensions of the Elderly-Friendly City in the City of Yogyakarta are Social Participation (64%), Community Support and Health Services (63%), and Respect and Social Inclusion (58%). These three dimensions are also leading compared to the general situation of other cities in Indonesia. The dimensions of the Elderly Friendly City that are still lacking in the City of Yogyakarta and also in Indonesia in general are Civic Participation and Employment (19%), Housing (31%), Buildings and Open Spaces (40%), and Transportation (43%) (Hermawati, Istiana, 2015). The path to realizing Yogyakarta as an elderly-friendly city is already quite clear; above all, what is needed is a commitment from the city government and other stakeholders to achieve this goal by 2030.

To build an inclusive and sustainable city, spatial design must support mobility for all groups. A city that is accessible to all groups of residents with various genders, ages, and levels of physical ability. The fulfillment of the needs of vulnerable groups, including the elderly, is often not involved in the city development planning process. This is evidenced by the lack of facilities that support their mobility during daily activities. Efforts to create public spaces that can

accommodate the needs of all residents can be realized through an inclusive design approach. Inclusivity is essential to consider in design, but it is also a challenge for designers. The basis of inclusive thinking can change designers' perspectives by making more users, especially extreme (vulnerable) users, the primary focus of design development (Guspara, Winta Adhithia, 2019).

As a city entity, Yogyakarta cannot be separated from its villages. Although, from its inception, it was a royal center centered on the palace and fortress area, the existence of the palace, city, and villages is inseparable. The city of Yogyakarta developed alongside its villages, and these villages also contribute to the city's character. Organizing and preserving the city of Yogyakarta also entails organizing and preserving its villages, as the villages are part of the city's history and identity (Setiawan, Bobi, 2020). Building an inclusive city of Yogyakarta can begin by improving village facilities and infrastructure that are friendly to vulnerable groups, including women, children, the elderly, the poor, and people with disabilities. This aligns with Yogyakarta City's development vision to strengthen the city as a comfortable place to live and a center of services that are highly competitive for community empowerment, grounded in the value of specialization.

The city of Yogyakarta, with its urban villages, requires design contributions in its development. Implementing inclusive design is one strategy to ensure the welfare of all citizens. A comprehensive understanding of the application of inclusive design practices is the largest investment local governments make to realize sustainable urban development, particularly in creating a built environment that supports older adults' active participation in society. Inclusive design is a design process in an effort to create a built environment that can be recognized and used by each person of various ages, abilities, and conditions, and gender to eliminate barriers in social, political, technical, and economic processes that support buildings and designs (Meirita, Arnia Iga & Hardiman, Gagoek, 2023). According to (Fletcher (2006) inclusive design has the following principles:

- **Places people at the heart of the design process**
Putting the user at the heart of the design process, a design and its development creates a space that forms a strong, vibrant, and sustainable character.
- **Acknowledges diversity and difference**
Recognizing diversity and differences, inclusive design aims to meet the needs of as many users as possible and to accommodate diverse user needs, including those related to disabilities, sensory impairments, mental health, children, and older adults.

- **Offers a choice where a single design solution cannot accommodate all users**

Providing options when design solutions cannot accommodate all user types. Accommodating the needs of each user without limiting age, gender, ethnicity, or circumstances.

- **Provides for flexibility in use**

Flexible in use, the space is designed to facilitate user adaptation while adhering to sustainability principles regarding how the design is used and by whom.

- **Convenient and enjoyable places for everyone**

By providing a design that is easy and enjoyable for all users, buildings and roads can be connected so that all users know where they are and where they are going.

The application of inclusive design to open spaces is crucial because people with disabilities and the elderly have the same rights to utilize public spaces without being treated differently from non-disabled people. This can foster self-confidence and happiness and provide opportunities for community participation and interaction (Dwiputri, Marianne Tunggadewi Juluk, 2024). Inclusive design aims to eliminate the limitations and barriers that thwart many efforts by people with disabilities. This approach is fundamentally based on the idea that people from all walks of life can participate in exploring their environment fairly and with confidence (Salsabila, A.S., and Rizqiah, F., 2021).

METHOD

This research employs a case study of a village that was the first pilot project for implementing the Integrated Elderly Services (LLT) program in the Wirogunan sub-district, specifically in Bintaran village. This research will analyze the quality of the built environment in Bintaran village as a residence for elderly residents. The method used is a qualitative method based on eight parameters for the realization of an elderly-friendly city as determined by the World Health Organization which consists of (1) Availability of open space, (2) An elderly-friendly transportation system, (3) Elderly-friendly housing, (4) Social participation, (5) Respect and inclusion of the elderly, (6) Civic participation and employment, (7) Availability of information and communication, and (8) Community support and health services. These 8 parameters are adjusted to the environmental characteristics and community conditions in Bintaran village. Another consideration included in the analysis is the spatial needs of the elderly, which include private, semi-private, semi-public, and public areas.

Bintaran Village is divided into three classes:

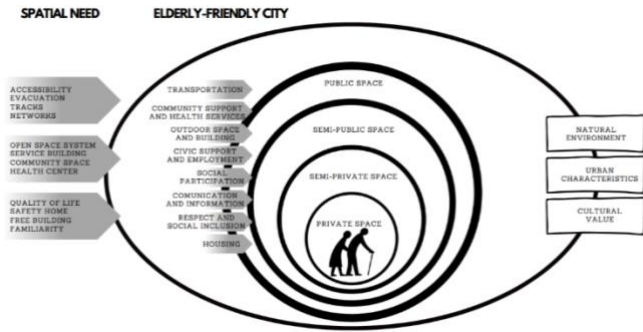


Figure 2. Elderly-Friendly Space Zone Analysis
Source: Adaptation from J., Van Hoof, 2021




This research analyzed the implementation of an integrated elderly service program at the sub-district level, which began in 2022. Bintaran Village is the first pilot project for the program's implementation. The selection of Bintaran Village as a case study for this research is not only based on the large elderly population, but also on the local capacity, especially human resources in supporting elderly care and involving the elderly in village development. The research method used in this study is a descriptive qualitative approach, which describes the elderly service programs in Bintaran Village that are adapted to the surrounding environmental conditions. The need for space for the elderly is a primary consideration; the division of private, semi-private, semi-public, and public zones will be adjusted to the environmental, social, and cultural characteristics of Bintaran Village.

RESULT AND DISCUSSION

Bintaran Village is known as a heritage village due to its ancient buildings in the Indies or colonial style. The village's long history informs its name, which was once the residence of Prince Haryo Bintoro, a relative of Sri Sultan Hamengku Buwono. The Bintaran village area was once an elite residential district during the Dutch colonial era, and, to this day, physical features such as spatial planning and historic buildings are preserved. This village is located in the Wirogunan sub-district, which borders the Code River. Bintaran Village is a cultural heritage site in Yogyakarta that warrants preservation.

Despite its status as a heritage village, Bintaran Village also faces potential issues related to the care of older adults in the city of Yogyakarta. Bintaran Village is the first pilot project for implementing the Integrated Elderly Services (LLT) program, initiated by the Yogyakarta city government. The selection of Bintaran Village as the first pilot project was based not only on the large number of elderly residents but also the capacity of the community to care for and empower the elderly in their daily activities. The elderly population in

Table 1. Criteria for the elderly in Bintaran Village

Criteria	Description
Level 1 (55-65th) 	Elderly people who are still able to carry out general activities, the same as those of productive age in general
Level 2 (66-74th) 	Elderly people who have physical limitations but can still be active
Level 3 (74-90th) 	Elderly people need caregivers for every activity because they are generally limited.

The majority of elderly residents in Bintaran Village are classified as Category III, aged 74-90, and require the assistance of a companion or caregiver for daily care. These elderly residents often face challenges, including narrow village alleys that impede ambulance access and evacuation.

The capacity of the Bintaran village community to care for the elderly is quite good. Residents are aware of and help one another with the care of elderly residents in their area. The younger generation cares enough about the elderly to volunteer to provide in-home care for class III elderly individuals, with support from health workers. Bintaran Village also has an elderly-friendly community program, including BPJS (Self-Help Corpse Management Assistance), which provides assistance or compensation to bereaved elderly families, and a Peer Support program that trains the younger generation to prepare for old age and to increase empathy for the elderly. In addition, there is an elderly school that provides non-formal education on health, religion, social issues, and culture, so that the elderly can live happily and prosperously.

Bintaran Village borders the Code River, a vital waterway in Yogyakarta. Its environmental conditions are similar to those of other riverside villages, often characterized by slum-like conditions with narrow alleys. Residents' activities are typically conducted in the village hall, which frequently serves as the center of community activities. Bintaran Village requires a multifunctional public space to accommodate more inclusive community activities, particularly for the elderly, whose contributions remain essential to the community.

The site is an abandoned residential building (house) that is no longer used; it is the object of design in this research. The lack of open land, health facilities, and road access for elderly evacuation is the focus of the problem-solving. Based on observations and interviews with Bintaran village administrators, village residents require a community activity center capable of accommodating community gatherings for specific events. The involvement of all segments of society, from young to old, contributes to the development of the village.



Figure 3. Bintaran Village Environment
Source : Hanafi, 2024

Based on its environmental conditions, Bintaran Village is not yet considered elderly-friendly. This is because the city is densely populated and centrally located within Yogyakarta. In addition to supporting facilities such as roads and sidewalks, these still require improvement. Transportation services for older adults are not yet optimal. Several issues still need attention, including the lack of specific routes that facilitate access to public transportation for older adults.

With respect to the housing dimension, it does not fully protect the interests of the elderly. Existing house layouts must accommodate older adults or comply with applicable guidelines. Meanwhile, the social participation dimension is generally quite good. Overall, the respect and inclusion/social involvement dimensions are appropriate, indicating that in this dimension, the elderly are valued and respected rather than ostracized and are even considered family. Furthermore, older adults receive high-quality public services. In the community participation and work dimensions, there is still no appreciation of the contributions of older adults; these are primarily voluntary. Communication and information dissemination are well supported, but attention to how elderly people with physical limitations access information is needed. In the community support and health services dimensions, the elderly have

adequate access to health services, including home care.



Figure 4. Bintaran Village Age-Friendly Design
Source : Hanafi, 2024

CONCLUSIONS

In general, the condition of Bintaran Village is not yet conducive to older adults, particularly with respect to environmental quality. Several factors indicate that the ecological conditions should be more conducive to the elderly, including the village's location in a densely populated area of Yogyakarta. Furthermore, the need for more elderly-friendly public facilities makes this area less accessible to older adults. However, the social conditions in the Bintaran Village community are already favorable, supporting an age-friendly environment. Elderly residents are accepted in the community and encouraged to participate in village development. This human resource potential can serve as the basis for developing a more age-friendly village action plan. The path to realizing Yogyakarta as an elderly-friendly city is well-defined, and careful planning is required for elderly-friendly public facilities. Based on the study's results, several recommendations can be made, including the need for a green open space management program in the Bintaran Village environment. This can be a more environmentally friendly solution by involving all elements of society, from young to elderly, to realize elderly-friendly public facilities jointly.

This research can be extended into further studies on participatory design that involve all elements of society in building sustainable cities. The completeness of elderly-friendly facilities does not guarantee regional prosperity without the ability to care for and maintain the environment. Issues of climate change and ever-changing sociocultural dynamics require citizen participation in mutual care and environmental preservation, which can begin at the village level.

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