Evaluating the availability of facilities in the elderly park in terms of environmental sustainability

L S Akiyah* and F D M Solihin
Urban and Regional Planning Program Study, Faculty of Engineering, Universitas Islam Bandung, Bandung, Indonesia

*lelysyyiddatul@gmail.com

Abstract. Bandung City has many thematic parks spread across several districts. One of them is Taman Lansia (Elderly Garden). Although according to Bandung City Government that parks are intended for all age groups, there should be a target for visitors based on different age groups in each park based on the theme. The elderly has physical and psychological limitations that cause the elderly age have special needs that are different from the productive and pre-productive age communities, so special facilities are needed for the elderly in Bandung. Based on observation, existing facilities in Taman Lansia had not been able to cover the elderly needs. So that, the purpose of the study was identifying visitor characteristics and analyzing the facilities needed at Taman Lansia according to the elderly characteristics. The data collection methods were getting observation and interviews. The variables must fulfill criteria for facility that the elderly needs, such as accessibility, security, and convenience. The analysis methods were descriptive analysis. This study indicated that Taman Lansia visitors were dominated by elderly residents. There were several types of facilities that have not been provided in accordance with the characteristics of the elderly such as ramp handrails. The available facilities did not consider the characteristics and needs of the elderly.

1. Introduction
Thematic park is a creative garden tour clues which is built in order to meet the demand of tourists diversified entertainment and the modern tourist destination formation of planning activities [1]. Thematic Park began to develop since the 1900s [2]. Similarly, in the city of Bandung, currently has 24 scattered thematic parks. The park has been revitalized with a thematic concept and there are many differences between one park to another, and has its own uniqueness. In addition to being unique and having good facilities and infrastructure, Bandung City thematic parks must also have complete facilities so that, visitors can be united in comfort. From each park has different visitor characteristics, one of the different characteristics of visitors is that each park has different age group characteristics. According to the World Health Organization (WHO) age classification is divided into 4 categories, one of which is old age with age ≥ 65 years [3].

According to the Department of Housing and Settlement, Land and Landscaping of Bandung City (Department of Housing and Settlements, Land and Landscape) that thematic parks are intended for all age groups. So that the Bandung City Government has provided thematic park facilities for all ages of visitors. However, with a different theme for each visitor, the facilities provided must consider the needs of visitors based on their age group.
One thematic park in Bandung City is the Elderly Garden which is intended for the elderly. This special age park must be able to meet the needs of the elderly. Bruggencate\(^1\) said that social needs are one of the most important human needs after physical needs. Abraham Maslow define social needs as the basic human need for love, acceptance and belonging [4]. When social needs are not satisfied, this can lead to loneliness and social isolation. Loneliness and social isolation are directly linked to sickness and mortality [5]. The body of literature that illustrates the protective role of satisfied social needs on physical and mental health is quite substantial [6].

Many studies on thematic parks are carried out by several researchers such as [1,2,7,8]. But no one examined the need for thematic park facilities based on the age group of the theme of the park being made. Thus, to fulfill elderly’s needs in the theme park, it is necessary to consider their social and physical needs. Cooper state that the elderly has physical and psychological limitations that cause the elderly community have special needs that are different from those of productive and pre-productive ages. So that, special facilities are needed for the elderly community in Bandung. In the elderly theme park, a change in the structure of the life of the people who are entering old age (not working, children and relatives have lived separately) causing a need for social interaction. Parks that are intended specifically for seniors can be a means of meeting and interacting with fellow elderly people. This is in accordance with UU No. 13 1998 [9] concerning Elderly Welfare, especially in article 17 paragraph 2, which states that it is necessary to provide special recreational and sports facilities for the elderly community.

Based on the results of field observations and interviews, the park has not been able to meet the needs of its visitors based on the age group, namely the elderly. So, it is necessary to know what facilities are needed in the elderly park, according to the characteristics of the age group.

2. Methods
One of the studies evaluating thematic parks was conducted by Milman who used factor analysis to identify seven key constructs that summarized important areas of concern when consumers evaluated theme parks [10]. In this research, the data collection methods are observation and interviews. Observation was carried out by identifying the availability and condition of existing facilities in the elderly park. While interviews were conducted with elderly visitors to find out their opinions and needs in the park. Interviews were also conducted with the Bandung City Government.

Referring to Law Number 13 of 1998 about elderly welfare in article 17 paragraph 2 that facilities in elderly parks must fulfill the criteria of accessibility, security, and convenience. These three variables are used in this study to determine the facilities that must exist in the park for the elderly. So, the analytical method used is a descriptive analysis by comparing the conditions of existing facilities with those that should be provided based on the 3 variables above.

3. Results and discussions
According to the World Health Organization (WHO) Age classification is divided into 4, one of which is the elderly, \(\geq 65\) years old. The age that is said to be advanced is age over 65 years. The elderly has physical and psychological limitations that cause the elderly have special needs that are different from other productive age communities [11]. Changes in the structure of the life of the elderly who are in old age (not working, children and relatives have lived separately) cause the need for social interaction. As with adults, the elderly also needs public spaces or city parks to refresh their minds and carry out social interactions.

Urban parks can be classified into several types. Classification of parks and open spaces according to Steiner and Butler are [12]:

- **Neighborhood Park**, is a basic unit of park groups with the main function as a recreational and social facility with a focus on development as informal recreation.
- **Community Park**, is a city park with a scope of service greater than the environmental park (Neighborhood Park). The main function as a meeting place, the fulfillment of recreational facilities to protect the unique landscape and open space of the region.
Large Urban Park, is a city park with a larger scope of city services and a large population.
Youth Athletic Complex, is a park / field facility provided for children and adolescents with all sports facilities.
Community Athletic Complex, is a facility that combines athletic fields for teenagers and sports facilities for the community.
Parkway, is a linear park along the road corridor that connects public parks, monuments, agencies, and business centers. This park can be a green space or adapted to its natural character
Special Use, is a park and recreational facilities with a special appearance that is used for a particular purpose such as historic areas, downtown centers, plazas, camping grounds, or golf courses.
Park School, is a school yard that can be used as a public space to play and exercise
Private Park recreation facilities, are parks and recreational facilities with private ownership and are not used as public park facilities.
Regional Park, is a park with a scale of service at the national level and is focused as a conservation area.

Based on the characteristics of the elderly who have limitations in reaching activities, the right type of park is the Community Park, where the main function of the park is as a meeting place, as well as the provision of open space in the area. In Indonesia, this type of park is equivalent to the District Park. So special facilities are needed in public spaces or city parks to be visited by the elderly, because the welfare of the elderly is listed in Law No. 13 of 1998 in article 17 paragraph 2, which states that it is necessary to provide special recreational and sports facilities for the community elderly. The following facilities can be provided for the elderly in the park according to their needs.

| Characteristics of needs | Facilities |
|--------------------------|-----------|
| Accessibility            | Zebra cross  
Pedestrian Area in City Park  
Sidewalks are pedestrian paths that are generally parallel to the road and are higher than the pavement surface to ensure the safety of the pedestrians concerned.  
Guiding Block  |
| Security                 | Pedestrian ramps are reserved for seniors or people with disabilities so that security is maintained.  
Park Guard Post or security by security in every corner of the park.  |
| Convenience              | An open space or activity area such as a field where the function can be used for the needs of the elderly to exercise, a gathering place for the elderly or recreation with family.  
Integrated health service center will greatly facilitate the elderly in a park to check their health if something happens do not have to go far to other health services.  
Shading trees or shady vegetation to blend with nature and cool to calm the mind  
Seating is a facility that must be in every public open space, because no matter how good the public open space, if there is no seat, will reduce the interest of visitors to visit again  
Special facilities for wheelchair or disabled users |

Taman Lansia's initial purpose before revitalization is to provide for the elderly so that the elderly has a place for them to move and be safe. After conducting research, visitors who came to the park were not only elderly there were also other ages, but the dominant one was old age, 60 years and above. Elderly visitors usually visit the elderly park for recreation or just sports. They usually visit the park once a week, usually the main purpose was not to Taman Lansia (Elderly Park), because the location of the elderly park is close to Gasibu and the surrounding park on Sunday is always crowded because there are spilled spills, then visitors will automatically visit the elderly park. They visit the elderly park for about one until two hours, this time is influenced by their activities. If seen from the activities and intensity of
visitors who are so regular eating needs to be supported by facilities that support their activities and adjusted for age, namely the elderly.

Changes in the structure of the life of the elderly who are in old age (not working, children and relatives have lived separately) cause the need for social interaction. As with adults, the elderly also needs public spaces or city parks to refresh their minds and carry out social interactions. Based on the elderly characteristics who have limitations in reaching activities, the right type of park is the Community Park, where the main function of the park is as a meeting place, as well as the provision of open space in the area. In Indonesia, this type of park is equivalent to the District Park. So special facilities are needed in public spaces or city parks to be visited by the elderly, because the welfare of the elderly is listed in Law No. 13 of 1998 in article 17 paragraph 2, which states that it is necessary to provide facilities that support special needs for the elderly community. The following are the availability of facilities in Taman Lansia based on observations.

Table 2. The need for park facilities for the elderly.

| Characteristics of needs | Facilities                                      | Availability | Information                                                                 |
|--------------------------|------------------------------------------------|--------------|-----------------------------------------------------------------------------|
| Accessibility            | Zebra cross                                    | -            | The availability of facilities at Taman Lansia are very minimal to support the needs of the elderly. This park has a very large area compared to the previous park, which is 16,257 m² wide. The problem is the arrangement and layout of the existing facilities are irregular so it takes place. Facilities that are needed by the elderly, the form of facilities will not take up a wide space, then for the future further studies are needed to assess the needs that are still not available. |
| Pedestrian Area in City Park | Sidewalks are pedestrian paths that are generally parallel to the road and are higher than the pavement surface to ensure the safety of the pedestrians concerned. | ✓            |                                                                           |
| Guiding Block            | Security Pedestrian ramps are reserved for seniors or people with disabilities so that security is maintained. Park Guard Post or security by security in every corner of the park. | -            |                                                                           |
| Convenience              | Open space                                     | ✓            |                                                                           |
| Integrated health service center | Shading trees or shady vegetation              | ✓            |                                                                           |
| Seating                  | Special facilities for disabled users          | -            |                                                                           |

From the table above it can be seen that the facilities to support the elderly visitors needs still do not fulfill they needs. There are a number of things that must be considered in the provision of special facilities for the elderly, including the ramp handrails and the wheelchair-specific track listed in Permen PU No. 30/2006 [13], as follows:

- Hand Grip Ramp is very important for the elderly, considering that the elderly for their endurance have begun to diminish or their strength is no longer young. Hand grip ramp specifications includes: the horizontal length of one ram with a ratio between height and slope of 1:8 must not exceed 900 cm; the minimum width of ram is 95 cm without the edge, and 120 cm with the edge; the flat surface of the prefix or suffix of a ram must have a texture so it is not slippery either when it rains; ram / low curb safety edge width of 10 cm; ram must be illuminated with sufficient lighting so that it helps the use of ram at night; ram must be equipped with a handrail that is guaranteed to have a suitable height. Here is an example of a picture of hand ram for the elderly.
Facilities for wheelchair users need to be considered as well, considering that not all elderly people are still strong on foot. There are several things that must be considered in the provision of special wheelchair lanes listed in Permen Pu No. 30 of 2006, namely: the road surface must be stable, strong, weather resistant, fine-textured but not slippery; avoid joints or bumps on the surface, even if forced to exist, the height must be no more than 1.25 cm; the maximum slope ratio is 1:8 and at any maximum distance of 900 cm there must be a flat section of at least 120 cm; minimum pedestrian path size is 120 cm for one-way and 160 cm for two-way; and safety edges are made as high as 10 cm minimum and 15 cm wide along the pedestrian path.

4. Conclusion
The characteristics of the thematic park visitors studied were in accordance with the target audience based on age group. Taman Lansia has visitors ≥ 60 years old. Elderly park visitors can spend time in the park with a visit time about 1-3 hours with the aim of recreation or sports. Facilities of the park that have been analyzed, do not consider age. So, it needs facilities to support the needs of visitors according to their age. For example, Taman Lansia does not have a handrail ramp available, the function of the ramp is one of the needs of comfort for the elderly while in the park, it is necessary to provide these facilities. Based on the research, in building a park should consider the theme, age of visitors, and facilities provided based on the age of visitors.
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