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Alternative locations of older people-friendly city park in Bandung City, Indonesia

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Abstract. City parks play a crucial role as essential public open spaces within urban areas. Consequently, a demand exists for city parks that can cater to a diverse range of activities and accommodate individuals from various age groups, genders, and social backgrounds, with particular emphasis on the older population. These parks serve as meeting points and outlets for physical fitness, contributing to the overall well-being of the older population. However, in practice, a substantial number of older population urban residents express discontent with the quality of their city parks. Within the city of Bandung, there are twenty parks that currently do not meet the criteria for being classified as older people-friendly parks. This study is focused on identifying the precise locations of urban parks within Bandung that meet the standards of being older people-friendly. The variables under consideration encompass aspects such as location, accessibility, vegetation, lighting, and available facilities. Data collection was carried out through a survey approach and subsequently subjected to analysis using a scoring technique. The study's findings indicate that out of the twenty parks examined, eight fulfill the criteria to be designated as older people-friendly city parks. These parks are: Cikapundung Terrace Park, Inclusion Park, Cibeunying Park, Cikapundung Riversport Park, Centrum Music Park, Tongkeng Park, City Hall Park, and Alun-Alun Ujungberug Park. Parks with scores ranging from 17 to 24 points are considered to have successfully met the senior-friendly park criteria.

1. Introduction

One of the vital facilities contributing to the well-being of the older population within urban areas is public green open space, manifested as city parks. These parks not only offer recreational spaces but also yield positive effects on the physical and spiritual health of urban dwellers [1]. Parks offer an array of benefits to the older population. Particularly for those who experience social isolation, parks can mitigate such isolation, foster intergenerational interactions, and cultivate a sense of belonging and attachment [2]. Thus, city parks stand as essential components of urban environments, nurturing the mental and physical well-being of the older population.

Parks confer significant physiological and psychological advantages to the older population, enhancing their overall quality of life. For seniors residing in compact apartments devoid of personal yards or open spaces, parks serve as retreats, providing opportunities to connect with nature, walk, and engage in exercises. Green open spaces signify a hallmark of age-friendly urban development [3]. Nevertheless, research [4] highlights that urban older people often express discontent with their local



parks and face barriers that hinder their utilization.

Consequently, the older people community requires city parks that cater to diverse functional activities and are accessible to individuals spanning various age groups, genders, and social strata, including the older population. An exemplar of a successful older people-friendly city park is the Temple of Heaven Park in Beijing, China. Encompassing three acres, this park serves as a gathering spot for diverse older people communities, hosting activities such as gymnastics, singing, dancing, calligraphy, and socializing through exercise [5].

The older population demographic within the city of Bandung is an active and engaged community. According to [6], their activity level and residence location have limited impact on their engagement in city activities. With a relatively substantial population of older people residents, the City of Bandung is mandated to provide public facilities catering to all age groups, especially seniors [7]. Given the unique physical and psychological needs of the older population, distinct from those of younger demographics, the city should offer specialized facilities. Presently, the presence of urban parks serves more as a formality rather than a means to provide tailored facilities for the older population, often falling short of recommended provisions [8]. The presence of older individuals is infrequent in the Bandung's city parks. These spaces predominantly attract teenagers for leisure and free internet access. The older population often does not feel accommodated in parks primarily designed for younger individuals.

Although the city of Bandung boasts 20 city parks, none of these spaces are truly accommodating for the older population. In accordance to this matter, the research aims to identify which parks within Bandung meet the criteria of being older people-friendly spaces.

2. Methods

2.1 Research location

The location of this research study was conducted in the urban area of Bandung City, West Java Province with an area of 167.29km². The unit of analysis in this study is urban parks which are scattered in several sub-districts in Bandung City including Coblong District, Bandung Wetan District, Sumur Bandung District, Lengkong District, Ujung Berung District, and Regol District [9].

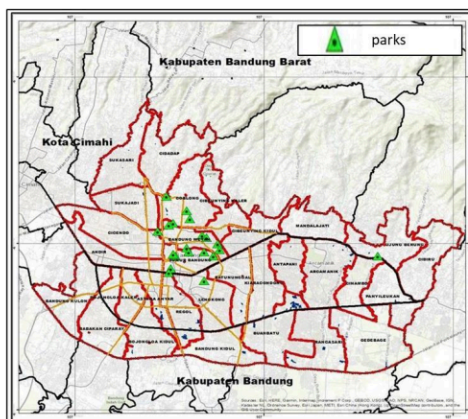


Figure 1. Research location map.

2.2 Data collection

The method used are observation and questionnaires method in obtaining primary data needed in the research. The secondary data collection method was carried out using literature studies and surveys via the internet. The literature review is carried out by seeking theory or information about the Central Bureau of Statistics for the City of Bandung, studies, research, etc. Surveys on internet pages are carried out to obtain data such as articles, journals and other publications. In collecting primary data, it will be obtained through direct observation to 20 city parks in Bandung to assess the condition of the city park by going through the criteria of an older people-friendly city park, namely location, accessibility, vegetation, lighting, and facilities.

2.3 Data analysis method

The purpose of this study is to find out city parks that are friendly to the older population in the city of Bandung as measured based on the criteria for an older people-friendly city park. In this study, data analysis uses mathematical calculations with classification scoring techniques. Before identifying the suitability of a park using the criteria for an older people-friendly city park, the data collected has several stages that need to be worked out. Scoring analysis was carried out by assessing the existing conditions against the criteria/indicators set by the researcher based on the theory regarding the older population-park which has been previously described. Assessment will be carried out with each indicator if stated "fulfilled" then given a value of 1, and if "not fulfilled" then the value is 0. Table 1 of research parameters corresponds to the scoring assessment on each research indicator:

Table 1. Scoring parameters on research indicators.

Variable	Indicator	Scoring	
		Fulfilled	Unfulfilled
Location	1. The environment is close to public transportation modes (200-400m).	1	0
	2. The park environment is far from noise (railways, traffic lights).	1	0
	3. Safe environment (Security post available)	1	0
Accessibility	1. Proximity of the entrance to the parking location.	1	0
	2. The walking paths in the park are not slippery.	1	0
	3. Walkways within the park are wide enough for a minimum wheelchair (2m)	1	0
	4. There are no pedestrians on the sidewalk leading to the park.	1	0
	5. The walkways to the park are wide enough for wheelchairs.	1	0
	6. There is a ramp with an appropriate slope and a handrail	1	0
Vegetation	1. There are shade trees.	1	0
	2. There are directional plants along the way.	1	0
	3. Vegetation does not cover planting activities.	1	0
	4. There are variations in shape, pattern and color offlowers/ornamental plants.	1	0
Lighting	1. Adequate lighting (not too dark or too dark).	1	0
	2. Lighting lamps are available in various locations.	1	0
Facility	1. Non-building facilities are available such as CCTVcameras.	1	0

Table 1. Scoring parameters on research indicators (cont.)

Variable	Indicator	Scoring	
		Fulfilled	Unfulfilled
Facility	2. Safe seats for the older population (there are rain gutters).	1	0
	3. There is a long seating area for gathering.	1	0
	4. Toilets are available and toilets are not slippery and clean.	1	0
	5. There are trash cans along every path in the park.	1	0
	6. There are directions to the toilet/mushola.	1	0
	7. There is information about the park.	1	0
	8. There are sports facilities.	1	0
	9. There are means for reflection	1	0
	10. Good drainage.	1	0
	11. There is a parking lot connected to the garden.	1	0

To identify the suitability of the park using the criteria of an older people-friendly city park, it is necessary to classify the assessment using the class interval method using two categories, namely: Fulfilled, and Not Fulfilled. The formula determines the class interval as follows:

$$I = \frac{c - b}{k}$$

Figure 2. Interval class formula.

Information:

I = large interval distance

c = Total highest score

b = total lowest score

k = number of classes desired

Based on the calculation of class intervals with many classes, this study uses two classes in order to obtain a detailed assessment. The categories used are as follows:

Table 2. Garden condition classification.

Condition Classification	
Fulfilled	17-26
Unfulfilled	9-16

3. Results and Discussions

3.1 Analysis of city parks in the City of Bandung that meet the criteria for older population friendly

The assessment of the suitability of city park elements in Bandung to the criteria for an older people-friendly city park is conducted through a scoring analysis. This analysis employs data obtained from observations encompassing both the conditions of research subjects and the park's attributes in the field. Presented in Table 3 are the observations' outcomes concerning urban parks in the city of Bandung, evaluated in accordance to the criteria for older people-friendly city parks:

Table 3. Observation results of city parks in the City of Bandung.

No.	Park	Location	Accessibility	Vegetation	Lighting	Facility	Total
1	Gesture Park	2	3	4	1	5	15
2	Cikapundung Terrace Park	3	4	3	2	7	19
3	Fitness Park	2	3	2	2	6	15
4	Pasupati Park	1	3	0	2	3	9
5	Movie Park	1	3	1	2	9	16
6	Inclusion Park	1	5	4	2	9	21
7	Kandaga Puspa Park	2	2	4	1	4	13
8	Cibeunying Park	2	5	4	2	8	21
9	Older population Park	2	2	3	1	6	14
10	Persib Park	2	3	2	2	5	14
11	Cikapundung Riversport Park	3	5	3	2	8	21
12	Vanda Park	1	4	4	2	3	14
13	Centrum Music Park	2	4	4	2	7	19
14	Tongkeng Park	1	5	4	2	7	19
15	Super Hero Park	1	5	3	2	5	16
16	Photo Park	1	5	4	2	4	16
17	City Hall Park	3	6	4	2	9	24
18	Malabar Press Park	2	3	3	2	4	14
19	Ujung Berung Square Park	3	5	2	2	9	21
20	Bandung Square Park	3	3	3	2	5	16

Based on Table 3, it can be calculated from the highest indicator value - the lowest indicator value and then divided by the desired number of classes in order to get an interval or distance in determining the criteria for an older people-friendly city park. The results of city parks that meet the criteria for older population friendly parks are 7.5 which are rounded up to 8. To determine city parks with appropriate criteria, the value of the lowest indicator is taken to the highest. For more details can be seen in Table 4.

Table 4. Classification of city parks for older population friendly.

Classification of City Parks for Older population Friendly	
Mark	Park Criteria
9-16	Suitable
17-24	unsuitable

Derived from the field analysis conducted in accordance with the criteria for an older people-friendly city park, involving five variables and twenty-six indicators utilizing the scoring method, the assigned weights are categorized as "suitable" with a score range of 17-24, and "unsuitable" (0) within a score

range of 9-16. In the context of the city of Bandung, which encompasses twenty parks, a noteworthy observation is that eight among them fulfill the criteria for being designated as older people-friendly city parks. These parks include:

1. Cikapundung Terraced Gardens (19)
2. Inclusion Park (21)
3. Cibeunying Park (21)
4. Cikapundung Riverspot Park (21)
5. Centrum Music Park (19)
6. Tongeng Garden (19)
7. City Hall Park (24)
8. Ujungberung Square Park (21)

3.2 Discussions

Based on the results of the previous analysis, here are the elements that defining an ideal older people-friendly city parks for the older population in the City of Bandung.

3.2.1. Location. Location holds immense significance in the establishment of an older people-friendly city park, ideally positioned to provide convenient access to all citizens in Bandung, particularly the older population. Among the city parks in Bandung, some fail to align with the prerequisites of an older people-friendly environment, primarily in terms of safety. Security considerations play a pivotal role in selecting an appropriate location for a park tailored for the older population.

According to [10], the older population demographic is especially attuned to safety concerns within public spaces, necessitating careful attention to security provisions in both public areas and transportation modes. Stakeholders involved must prioritize creating a sense of security, enhancing park management with security measures, and offering facilities that preemptively address potential safety issues. Hence, the selection of a well-populated location with a low crime rate becomes integral in the decision-making process for an older people-friendly park. Moreover, the city park's location should ensure proximity to readily accessible public transportation. Ideally, city parks should be reachable via public transit, private vehicles, and even on foot.

3.2.2. Accessibility. In the process of developing older people-friendly city parks, ensuring good accessibility becomes imperative to create an environment conducive for the older population. The aim is to enhance the quality of existing city parks, particularly those meeting the criteria for Older people-friendly City Parks. In this regard, parks that satisfy the criteria must focus on improving their attributes, particularly related to safe accessibility for the older population.

However, within the city of Bandung, several parks fall short of meeting the criteria for an older people-friendly environment due to inadequate accessibility features. A noteworthy example is the absence of ramps with suitable slopes for the older population to enter comfortably. Government Regulation [11] mandates that all parks or recreation areas should offer assistive devices, such as ramps with gentle slopes for wheelchair users.

Another pivotal aspect to consider in terms of accessibility pertains to the prevalence of sidewalks in Bandung's city parks occupied by traders or street vendors selling their goods. It is crucial that sidewalks leading to the park are reserved for pedestrians. Local authorities must take the initiative to enhance and uphold the condition of these sidewalks, ensuring they are secure for the older population. Additionally, allocating a designated space for street vendors will help maintain the comfort of city park visitors without causing disruption. By addressing and improving the accessibility aspects mentioned above, the overall score of a park's older population-friendliness can be elevated, contributing to its status as an ideal older people-friendly city park.

3.2.3. Vegetation. The inclusion of vegetation criteria is pivotal in the development of older people-friendly city parks. These criteria encompass indicators that serve as important support elements. One notable aspect within the vegetation criteria is the incorporation of directional plants. Interestingly, this particular indicator remains absent in the majority of parks falling under the category of older people-friendly city parks within Bandung. Directional plants serve as a unique form of signage, offering valuable information about various locations and pathways. This feature significantly aids the older population in adjusting and navigating through the park with ease. The utilization of directional plants as a form of sign language is a remarkable innovation, enhancing accessibility for older individuals. In the pursuit of creating a city park that is both soothing and beneficial to the health of the older population, the presence of well-planned vegetation is indispensable. Moreover, the integration of directional plants not only serves as a navigational tool but also contributes to the aesthetic appeal of the garden area.

3.2.4. Lighting. Generally, the lighting in the parks throughout the city of Bandung is commendably satisfactory. The lighting conditions within these parks stand out as an enticing factor for those who wish to visit. Among the eight parks meeting the criteria for an older people-friendly city park, adequate lighting is already in place. However, there is room for improvement, particularly in augmenting the quantity of lighting facilities to facilitate nighttime activities. Additionally, stakeholders should take notice of shaded areas covered by plants that can obscure sunlight during the day, leading to a somewhat dim appearance within the city park. To address this, stakeholders should consistently conduct maintenance and consider adding further lighting elements to enhance illumination.

3.2.5. Facility. The subsequent aspect of consideration pertains to the facility criteria. Numerous urban parks in the city of Bandung fall short in the security aspect, primarily due to the absence of CCTV cameras. This security concern is crucial as fear of violence and street crime deters older population individuals from venturing outside their homes [12]. Additionally, the availability of secure seating areas is essential, accompanied by adequate shading that encourages conversation among the older population and other park visitors. This factor significantly impacts the safety of older population patrons, in line with [13], which notes that seats positioned near the park entrance provide a sense of security due to increased foot traffic. It is imperative to increase the quantity of seating facilities to accommodate visitors seeking rest and relaxation. Ensuring security beyond the confines of homes becomes a pivotal consideration in designing city parks for the older population.

Furthermore, essential facilities that must be incorporated within the city park precinct include sports amenities and contemplative spaces distributed across the park area. Parks play a pivotal role for the older population, functioning as spaces for exercise, well-being, and relaxation [14-16]. As such, the forthcoming city park should offer opportunities for light exercise, fostering a setting that enables older population individuals to engage in physical activities collectively and engage in interactions with one another.

4. Conclusion

The analysis results reveal that among the 20 parks within the City of Bandung, 8 of them adhere to the criteria of an older people-friendly city park as established by the indicators employed in this study. The fulfilled value class for the criteria of an older people-friendly park falls within the range of 17-24 points. These eight parks that satisfy these criteria are Cikapundung Terrace Park, Inclusion Park, Cibeunying Park, Cikapundung Riversport Park, Centrum Music Park, Tongkeng Park, City Hall Park, and Ujungberung Square Park. Each of these city parks boasts variables including proximity to public transportation modes (within 200-400 meters), distance from noise sources (railways, traffic lights), the presence of elongated seating for gatherings, clear indications for restrooms/prayer spaces, efficient drainage systems, wide-ranging lighting throughout various areas, integrated parking facilities within the garden premises, and diverse floral arrangements in terms of shape, pattern, and color.

However, it's important to note that these city parks also have their share of shortcomings. These include the absence of security posts, sidewalks within the parks crowded with street vendors, lack of

directional plants, unavailability of ramps, and inadequate maintenance of sports and relaxation facilities.

References

- [1] Van den Berg A E, Hartig T and Staats H 2007 Preference for Nature in Urbanized Societies: Stress, Restoration, and the Pursuit of Sustainability *Journal of Social Issues* **63**(1) 79–96
- [2] Loukaitou-Sideris A, Levy-Storms L, Chen L and Brozen M 2016 Parks for an aging population: Needs and preferences of low-income seniors in Los Angeles *Journal of the American Planning Association* **82**(3) 236–251.
- [3] World Health Organization 2007 *Global Age-Friendly Cities: A Guide* (France: World Health Organization)
- [4] Levy-Storms L, Chen L and Loukaitou-Sideris A 2018 Older Adults' Needs and Preferences for Open Space and Physical Activity in and Near Parks: A Systematic Review *Journal of Aging and Physical Activity* **26**(4) 682–696
- [5] Ramadhani A 2015 *Penataan Taman Lansia Di Kota Surabaya Berdasarkan Karakteristik Kebutuhan Masyarakat Lanjut Usia (The Arrangement of Older population Park In Surabaya Based on Characteristic Of The Older population 's Needs)* (Master Theses: Institut Teknologi Sepuluh Nopember)
- [6] Isnutomo and Dwasti M 2012 Identifikasi Permintaan Kelompok Usia Lanjut Terhadap Kegiatan Rekreasi di Kota Bandung (Identification of the demand for older population groups for recreational activities in the city of Bandung) *Journal of Urban and Regional Planning* **23**(2) 119–138
- [7] Hairul I 2018 *Kajian Fasilitas Ruang Terbuka Hijau Untuk Manula Di Kota Bandung (Studi Kasus: Taman Lansia) (Study of Green Open Space Facilities for Seniors in the City of Bandung (Case Study: Older population Park))* (Doctoral Dissertation: Faculty of Engineering Universitas Pasundan)
- [8] Hetyorini H and Ngestiningsih D 2015 *Kajian Geriatri Dan Ruang Terbuka Publik Dalam Mendukung Penyediaan Taman Lansia Di Kota Semarang (Study Of Geriatrics And Public Open Space In Supporting The Provision Of Older population Park In The City Of Semarang)* (Prosiding Sn Fakultas Teknik) **1**(1)
- [9] Central Bureau of Statistics 2022 *Bandung City in Figures 2021* (Bandung City)
- [10] Föbker S and Grotz R 2006 Everyday Mobility of Older population People in Different Urban Settings: The Example of the City of Bonn, Germany *Urban Studies* **43**(1) 99–118
- [11] Peraturan Pemerintah (PP) No. 43 Tahun 2004 tentang Pelaksanaan Upaya Peningkatan Kesejahteraan Sosial Lanjut Usia (Government Regulation No. 43 of 2004 concerning Implementation of Efforts to Improve Older population Social Welfare)
- [12] Turel H S, et al. 2006 Evaluation of Older population people's requirements in public open spaces: A case study in Bornova District (Izmir, Turkey) *Building and Environment* **42** (5) 2035–2045
- [13] Francis C and Marcus C C 1998 *People Places: Design Guidelines for Urban Open Space Second Edition* (Canada.: John Wiley & Sons, Inc.)
- [14] Haliza and Nur 2020 *Strategi Pengembangan Taman Kota Ramah Lansia di Kota Pekanbaru (Strategy for Developing an Older population Friendly City Park in Pekanbaru City)* (Thesis: Universitas Islam Riau)
- [15] Payne L, Orsega-Smith E, Roy M and Godbey G C 2005 Local Park Use and Personal Health among Older Adults: An Exploratory Study *Journal of Park and Recreation Administration* **23**(2)
- [16] Nurmani N M E and Dewi I K 2017 *Pengembangan Taman Kota Ramah Lansia Di Kota Bogor (The Development of Older people-friendly City Park in Bogor City)* (Bogor: Universitas Pakuan)

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