

# Spatial analysis related to the location characteristics of park supply. Case study: Music Park and Pendawa Park, Bandung City, Indonesia

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**Abstract.** Public space plays a role in defining the character of a city and is a valuable asset for a city and one of the indicators in assessing whether a city is considered successful or not. In the context of urban sociology, high-quality public spaces with well-maintained environments can improve the quality of the heterogeneous life of urban social communities by creating economic, social, or environmental value-added. Urban societies tend to be heterogeneous, individualistic, and characterized by high competition that often causes conflicts. Another reason for conflicts is the relatively high social differentiation because of the level of religious differences, customs, languages, and sociocultural aspects brought by immigrants from various regions. In the context of space, the city is a system that does not stand alone because internally the city is a unified system of functional activities in it. Meanwhile, externally, the city is influenced by its surrounding environment. As part of the public space, park has an important role in the environmental, aesthetic, recreational, psychological, social, educational, and economic aspects of the city. Public space can be understood as open spaces in urban areas, where everyone regardless their interests and backgrounds can be intersectional and have social contact and serve as an "urban regenerator" including educational functions through innovation and technological intervention. Moreover, park can also absorb carbon dioxide emissions, produce oxygen, improve air and water quality, regulate the microclimate, reduce noise, protect soil and water, and maintain biodiversity. However, many things cause the function of parks to decrease. One reason relates to the distribution of parks related to the characteristics of their location. Research has not seen many studies on the characteristics of locations in the planning of public space. The provision of public space should consider these location characteristics. This study will use a descriptive methodology, by first explaining the policy of public space provision, the existence of the reality of public space, its function and role, the park as public space, the time of visiting the park by the community, and the various problems that occur in it. This research will look at the characteristics of neighborhood parks based on the aspect of the location of park supply and the spatial policies of Bandung City. The analysis comprised ArcGIS (Geographic Information System) and direct observations to evaluate the locational characteristics of the area around the park by using the case study of Music Park and Pendawa Park.

## 1. Introduction

According to Bintarto [1], the city can be defined as a system of human life network characterized by heterogeneous socio-economic strata and its materialistic features. In the context of space, the city is a system that does not stand alone because internally the city is a unified system of functional activities in it, while externally, the city is influenced by its surrounding environment. Urban societies tend to be heterogeneous, individualistic, and characterized by high competition that often causes conflicts. Another reason for conflicts is the relatively high social differentiation because of the level of religious differences, customs, languages, and sociocultural aspects brought by immigrants from various regions.



The people who are unfamiliar with each other combined with the heterogeneity of society makes the system of behavioral social supervision among members of the community difficult to control [1].

According to John Ruskin, an English pioneer of urban planning who lived in the 19th century, the greatness of every civilization and the greatness of a city can be seen from the quality of public spaces, parks, and squares. The existence of the public sphere is so important that it is the focus of the Sustainable Development Agenda by the UN Human Settlements Program. The 11th objective of target 11.7 states "(...) by 2030, provide universal access to safe, inclusive and accessible, green and public spaces, especially for women and children" [2].

### *1.1. The role of public space*

Public space plays a role in defining the character of a city and is a valuable asset for a city. Public space is a space that can be accessed freely without a profit motive [3][4]. Public space is also one of the indicators in assessing whether a city is considered successful or not. In the context of urban sociology, high-quality public spaces with well-maintained environments can improve the heterogeneous quality of social life of urban communities by creating economic, social, or environmental value added [5]. The public spaces in question include roads, sidewalks, parks, and plazas that everyone can access [6]. According to Acasandre [7], current urban realities show the notion of "modern public space" formed from activities related to urban life and culture as a result of globalization. Public spaces are considered as living spaces, spaces of interaction and socialization for all urban communities; public spaces are social magnets. If the public space is the center of urban space then it must be "responsible" for attracting various urban activities and become the "image of the city".

To make public space "public" is very difficult. Lehtuvuori [8] describes this situation as the "unhappy marriage" between critical urban theory and the concept of space in rapidly evolving realities. Public spaces often become ambiguous in relation to the utilization of urban space. Many of the things that resulted in the functioning of the public space have switched into private spaces; conceptually and practically, this is very difficult to solve [8]. Commercialization sometimes also affects the essence and sense of the space itself. Some observations of the park as part of the public sphere indicate a transition of spatial function and activity over time. This transition often keeps the park to function continuously but the activities in it often create a certain spatial perception. Space activity is a positive activity and can be accepted by a certain circle in the community of urban communities, then this will form an image that the public space has a good function.

The urban sociologist Mark Gottdiener [9], in his book "The Social Production of Urban Space", articulates space in a social approach from the Marxist perspective by describing space as a form of translation of the capitalist ("the second circuit of capitalist"). In the end, the idea of planning as "communicative action" [10][11] states that space and place are not only understood as stable but also as events influenced by political and economic aspects as well as actors which is related to the planning itself. According to Ray Oldenburg [12], the public sphere is an informal meeting place, called the "third place" (bars, coffee shops, shops) that is essential to society and public life and to support the economic vitality of the community. While work is the "second place", the "third place" allows people to put their concerns aside and just enjoy the conversation around them. The third place "host the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work". This understanding can reinforce the value of daily urban life in research related to public space.

### *1.2. The park as public space*

One of the important functions of public space (parks) is the social function. In the context of urban sociology, public space can be understood as open spaces in urban areas where everyone regardless their interests and backgrounds can be intersectional and social [13]. According to various research, parks play an important role in encouraging physical activity; parks are social bonding nodes between community groups that create a "sense of community" and improve the quality of life of urban communities [13][14][15]. The park also plays a role in reducing social problems, including urban crime [16][17].

Some studies have claimed that in successful space, in this case, public space (parks), the economic impulse factor appeals to people to live, work, recreate and invest in urban areas [14]. Since 2003, the Commission for Architecture and the Built Environment (CABE) has provided evidence showing how parks can offer economic, social, cultural and environmental benefits. Their study also confirms the relationship between high-quality green space (parks) and increased home prices; benefits in enhancing regional image and attracting investment; the contribution of open space to biodiversity; the contribution in promoting sports; the benefits to health; and the role of public space in tackling social issues such as anti-social behavior.

The role of the park has gradually changed since the mid-nineteenth century when it was first introduced as a shelter from increasingly crowded urban centers. A study of the history of green open spaces identified four types of parks based on urban characteristics, social goals, and user base [13]:

- (1) "Pleasure park" (1850-1900), where environmental parks are organized to reduce the impact of the industrial cities;
- (2) "Reform park" (1900-1930), which gave birth to the park concept for children of working-class families and immigrants;
- (3) "Recreation facility" (1930-1965), to extend the concept of recreation to suburban and urban areas with the entry of stadiums, swimming pools, and indoor facilities; and
- (4) "Open space system" (1965-1990), where public space trends such as roads, plazas, and waterfronts are used for recreational purposes.

Harnik [18] pointed out that the desire for park utilization declined after World War II because development focused more on the outskirts of the city. As a result, many urban parks have deteriorated due to lack of funds for maintenance and operations. Interest in the development of city parks was renewed in the early 1990s when urban populations began to grow. In the last two decades, social and environmental issues concerning the provision green open space are being discussed [19]. In addition to providing aesthetic value and a place for recreation, city parks play an important role in fostering economic development, improving public health, providing employment opportunities, and being self-sufficient in the use of existing resources [19][20].

### *1.3. Urban park issues in urban space*

The park should host a variety of activities such as relaxing, playing, exercising, eating and drinking, interacting, and so forth [21]. According to Lei and Zhang [22], five main factors affect the quality of park services, namely landscape elements, sports activities, cultural quality, night activities, and traffic support facilities. Research has not seen many studies on the characteristics of locations in the planning of public space. The provision of public space should consider these location characteristics.

The strategic planning of urban green open spaces is insufficient because it is considered as a public space (common property), which is economically unfavorable. The maintenance of urban green open is inconsistent and nonroutine. Urban green open space is often regarded as a waste bin, wild hut, disease-carrying vector nest, and more of a problem than a benefit. Population growth has resulted in a rapid and uncontrolled densification of inhabitants and settlements in the city. This causes increased space requirements to accommodate its interests. The increasing demand for space, especially for settlements and waste, has an impact on the declining quality of the environment. The existing spatial plans are unable to prevent land conversion in urban areas so that the presence of green open space is increasingly threatened and the city becomes increasingly uncomfortable. The majority of green open spaces have been converted into urban infrastructure and new settlement areas. The main problem of the decrease of urban green open spaces is the too limited availability of land and inconsistently applying the spatial plan.

Although the facts state that the presence of urban green open space is far below the ideal proportions, dominant market forces change the function of land, thereby increasingly marginalizing urban green open spaces and even neglecting its functions and benefits. Spatial planning is expected to withstand the market mechanism. Thus, the legal tools governing spatial arrangements should be well implemented by decision makers and the government must be consistent in implementing spatial planning. Moreover, the provision of green open space must be adjusted to the designation specified in the spatial plan. To this end, the

Spatial Planning Law that contains sanctions can be used as a legal umbrella to meet the needs for urban green open spaces. The government should be able to provide green space for the community so as to provide comfort because of its quality environment. The identification of the availability of urban green open space needs to be done so that the government knows the availability of green space as one of the evaluation materials in determining the policy direction and protection of green open space.

#### *1.4. Methods*

This study will use a descriptive methodology, by first explaining the policy of public space provision, the existence of the reality of public space, its function and role, the park as public space, the time of visiting the park by the community, and the various problems that occur in it. This research will look at the characteristics of neighborhood parks based on the aspect of the location of park supply and the spatial policies of Bandung City. The analysis comprised ArcGIS (Geographic Information System) and direct observations to evaluate the locational characteristics of the area around the park by using the case study of Music Park and Pendawa Park.

## **2. Discussion**

This section contains the justification of the study area, the characteristics of the region, and an analysis of the provision of the park at the study site. The initial discussion will explain the general image of Bandung, the problems and the distribution of public spaces, especially of parks. Music Park and Pendawa Park will be used as the discussion in the analysis of the provision of parks related to the use of land around the parks. The results of this analysis will demonstrate whether the spatial characteristics of the park location are an important factor in the provision of green open space urban.

### *2.1 Justification of study areas*

Residential parks are selected as an effort to see the existence and utilization of the park as an urban facility that must be prepared based on SNI 03-1733-2004 Concerning Procedures for Urban Housing Urban Planning [23]. Based on the Regulation of the Minister of Public Works No.5/PRT/M/2008 [24], the neighborhood park is an open land with social and aesthetic function as a means of recreational activities, education or other activities at the neighborhood level. The study areas were selected by considering the social function, affordability for the users and the location of the park. The selected thematic parks are Music Park and Pendawa Park in Bandung City.

Bandung was selected as the study location based on the following considerations:

1. Based on Bandung Green Open Space Master Plan Year 2012-2031 [25] the existing park area in the city is 218.07 Ha, while parks are planned to contribute 15.92 percent (2713.9 Ha) of urban green open space requirements. This means that 2495.8 Ha of land needs to be made available for parks in the city of Bandung.
2. The data obtained from the Housing and Settlement Area, Land and Park Office of Bandung City in 2017 states that Bandung has 627 parks (including thematic parks) scattered throughout the city [26]. The provision of thematic parks in residential neighborhoods is the main driver of the new movement for public space that functions as a source of entertainment and recreation for the urban community with attractive physical design and facilities. Ideally, the provision of urban parks targets on the basis of the needs, desires, and problems faced by the urban community based on bottom-up policies [27].
3. The first selected park is a Music Park, located at Sumur Bandung Sub-district, Bandung City. This busy park one of the 20 thematic parks in the city of Bandung and is made for music lovers with a music-themed design. It was inaugurated in 2014 with an area of 2100 m<sup>2</sup> and is equipped with Wi-Fi facilities for visitors. The park is unique because of its musical monument as a reminder of the tragedy that occurred in the AACC Building on Asia Afrika Street due to music performances that exceeded the capacity of the building.
4. The second park location is Pendawa Park, located on Pendawa street, Cicendo Sub-district, Bandung City. This park is one of the busy parks in the city of Bandung is equipped with various facilities

including children's play facilities. The park is popular among skateboarders. It is located in a residential area and has an area of 3.900 m<sup>2</sup>.

## 2.2 Preliminary description of the provision of parks in Bandung City

The Bandung Urban Spatial Plan 2011-2031, based on Regulation of Minister of Public Works No.5/PRT/M Year 2008 Concerning Guidance of Green Open Space Utilization and Utilization in Urban Areas [24], stipulates that Bandung needs at least 2.858 parks (with a required area of about 1,272,500 m<sup>2</sup>). This number of parks is made up of 256 Community Unit (RT/RW) parks with a required area of about 644,000 m<sup>2</sup>; 258 neighborhood parks with a required area of around 322,500 m<sup>2</sup>; 18 sub-district parks of about 162.000 m<sup>2</sup>; and 6 urban parks with a required area of about 144.000 m<sup>2</sup>.

The parks in the city of Bandung have been distributed over all its districts. The Bandung City Department of Housing and Settlement Areas, Land and Landscape (DPKP3) stated that the provision of parks in Bandung is determined by the availability of land owned by the government of Bandung. The aspect of the availability of land belonging to the city government is the basis for the preparation of the Master Plan based on the Spatial Plan and the Detailed Spatial Plans of Bandung. Table 1 below presents an overview of the distribution of parks in Bandung.

**Table 1.** The number and distribution of parks in the city of Bandung in 2017

Region	Sub-district	Sub-district Size (km <sup>2</sup> )	Population in 2016	Population Density (per km <sup>2</sup> )	Park Size (m <sup>2</sup> )	Number of Parks
Bojonagara	Sukasari	6.27	81,908	13,063	48.356.27	24
	Sukajadi	4.30	108,375	25,203	57.759.53	29
	Cicendo	6.86	99,752	14,541	47.823.83	31
	Andir	3.71	97,553	26,295	44.368.18	15
Subtotal		21.14	387.588	15,580 (average)	198,307.81	19
Cibeunying	Cidadap	6.11	58,672	9,603	9.766.08	8
	Coblong	7.35	131,530	17,895	255.264.72	38
	Bandung Wetan	3.39	31,124	9,981	310.661.75	54
	Sumur Bandung	3.4	36,579	10,759	62.329.44	26
	Cibeunying Kidul	5.25	107,806	20,534	13.516.89	12
	Cibeunying Kaler	4.5	70,924	15,761	32.372.58	13
Subtotal		30	436.635	14,089 (average)	683,911.46	151
Tegallega	Astana Anyar	2.89	68,830	23,817	8.873.61	5
	Babakan Ciparay	7.45	147,096	19,744	3.036.00	2
	Bandung Kulon	6.46	142,411	22,045	6.709.23	3
	Bojongloa Kidul	6.26	85,668	13,685	549.20	4
	Bojongloa Kaler	3.03	120,405	39,738	10.389.83	16
Subtotal		26.09	564.410	23,806 (average)	29,557.87	30
Karees	Kiara Condong	6.12	131,972	21,564	8.866.50	17
	Batununggal	5.03	120,927	24,041	29.173.85	8
	Lengkong	5.90	71,187	12,065	60.126.90	41
	Regol	4.30	81,467	18,946	209.341.14	13
Subtotal		21.35	405.553	19,154 (average)	307,508.39	79
Ujungberung	Antapani	3.79	74,461	19,647	25.439.44	29
	Arcamanik	5.87	69,313	11,808	687.045.69	34
	Mandalajati	6.67	63,578	9,531	92.452.57	20
	Ujungberung	6.40	76,902	12,016	7.067.00	7
	Panyileukan	5.10	40,248	7,892	48.451.65	53
	Cibiru	6.32	72,016	11,395	8.409.00	6
Subtotal		34.15	396.518	12,048 (average)	868,865.35	149

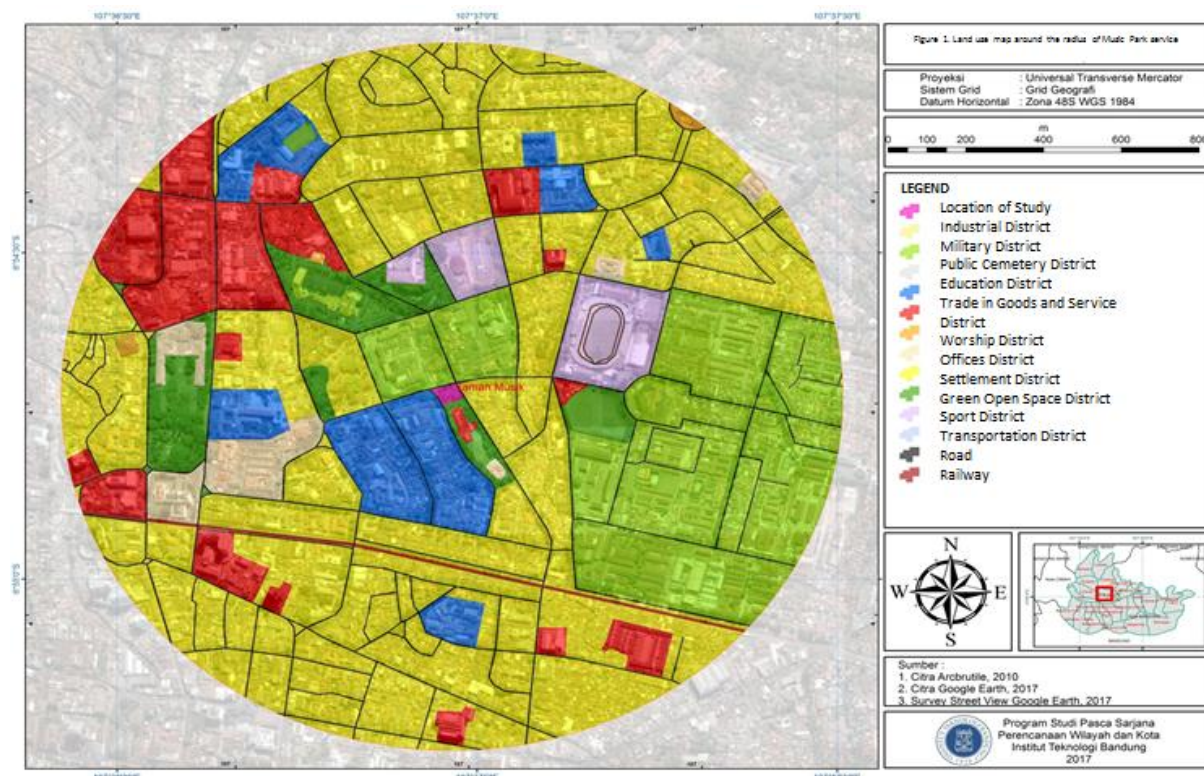


Region	Sub-district	Sub-district Size (km <sup>2</sup> )	Population in 2016	Population Density (per km <sup>2</sup> )	Park Size (m <sup>2</sup> )	Number of Parks
Gedebage	Buah Batu	7.93	95,108	11,993	29,491.20	39
	Rancasari	7.33	76,895	10,490	32,449.81	49
	Bandung Kidul	6.06	58,957	9,729	29,173.85	27
	Cinambo	3.68	25,231	6,856	5,745.00	5
	Gedebage	9.58	37,082	3,871	(updating)	(updating)
	Subtotal	34.58	293,363	8,588	96,859.86	120
	TOTAL	167.31	2,484,037	15,544	2,185,010.74	627

Based on this overview, the population of Bandung City is spread unevenly; Gedebage Sub-district has the lowest density with 3,871 people/km<sup>2</sup>, while Bojongloa Kaler Sub-district has the highest density with 39,738 people/km<sup>2</sup>. Based on data from the Bandung Central Bureau of Statistics, in 2016, Bandung had a population of 2,484,037, where Babakan Ciparay is the most populous sub-district with 147,096 people, while Cinambo Sub-district has the smallest population with 25,231 inhabitants. The region of Cibeunying has the largest parks availability with 151 parks, with Bandung Wetan is the sub-district with the largest number of parks with 54 parks. Bojonagara is the region with the least number of parks (19), while Cicendo Sub-district has the largest number of parks (31). The analysis shows that the Tegallega is the region with the smallest area of parks with 29,557.87 m<sup>2</sup> (although it has a number of 30 parks), compared with Bojonagara which only has 19 parks. Looking at the area in the city of Bandung shows that the area of Ungjung Berung is the largest but the park availability is still below that of Cibeunying. The above analysis also shows that the parks are not evenly distributed over every sub-district in Bandung. This can be seen in Ciparay Sub-district with an area of 7.45 km<sup>2</sup> but only two parks, compared to Buah Batu Sub-district which has an area size of 7.93 km<sup>2</sup> and 39 parks).

### 2.3 Land use analysis of Music Park

Music Park is one of the thematic parks in Bandung. It is located on Belitung street, Merdeka Urban Village, Sumur Bandung Sub-district and has an area of 4.200 m<sup>2</sup>. Based on data from the Central Statistics Agency of Bandung in 2016, Merdeka Urban Village has an area of 1.40 km<sup>2</sup>, 9 Community Units (RW), 58 Neighborhood Units (RT) with a population of 8,697 (24.22% of the population of Sub-district Sumur Bandung), a population density of 6.12 people/km<sup>2</sup> and a population growth rate of 0.427%. Merdeka Urban Village is dominated by settlements and has military complexes, educational facilities, and trade facilities of goods and services. The Bandung Spatial Detail Plan 2015-2025 [28] strongly supports the sustainability and existence of the Music Park in Merdeka Urban Village. These policies include the development of road access networks and light railways in anticipating congestion problems, structuring services and trading linear (informal sector activities/street vendors, pedestrian infrastructure including disability and bike lanes integrated with mass transport, providing space for small and medium enterprises are part of the development of government offices, trade, and services zone), and the policy of upgrading the electricity network (for park lighting). Figure 1 shows the land use around Music Park, while Table 2 shows the extent of land use around the park.

**Figure 1.** Land use around Music Park**Table 2.** Land use around Music Park

No.	Information	Area (m <sup>2</sup> )	Area (ha)	Area Percentage (%)	Number of Buildings
1	Roads	150,278.88	15.03	4.78	-
2	Railway	15,429.56	1.54	0.49	-
3	Military Facility	554,207.53	55.42	17.62	1115
4	Education	217,124.34	21.71	6.90	133
5	Trade in Goods and Services	305,375.35	30.54	9.71	385
6	Worship	6,362.05	0.64	0.20	2
7	Offices	86,310.89	8.63	2.74	18
8	Settlements	1,553,716.51	155.37	49.40	16,787
9	Green Open Space	149,510.96	14.95	4.75	-
10	Sports	103,782.77	10.38	3.30	10
11	Study Location	3,066.11	0.31	0.10	-
Total		3,145,164.95	314.52	100.00	18,450

The spatial analysis using ArcGIS shows that the land use around Music Park is dominated by residential area, 155.37 ha (49.40%) and military complexes, 55.42 ha (17.62%). The strategic location of the park, close to educational facilities and settlements offers great potential in presenting a beautiful environment, a place to socialize, and the location for the surrounding community to improve their economic level. Observations in September showed that the intensity of use of Music Park is highest from 14:00 to 18:00, while the lowest use is between 23:00 and 09:00, except on Saturday when the intensity of use is highest at 20.00-21.00. The pattern of intensity of use of Music Park shows that the high intensity of use of Music Park coincides with the school hours of high school students of SMA 3 and

SMA 5. Moreover, the park is used as a place to gather, study, relax, eat and play. The observation results related to the intensity of space use in Music Park can be seen in Table 3 below.

**Table 3.** Intensity of use of Music Park based on time of visit (per day/per hour)

Day	Time (00.00-23-00)																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sunday																								
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								
Estimation																								

Note:

Red: High (>50 people)

Yellow: Medium (20-50 people)

Green: Low (<20 people)

The analysis result of Music Park shows that the location of the park is in accordance with its function as a neighborhood park because most of its land use around the park consists of residential neighborhoods. However, the intensity of its usage time shows Music Park is still not utilized optimally.

#### 2.4 Land use analysis of Pendawa Park

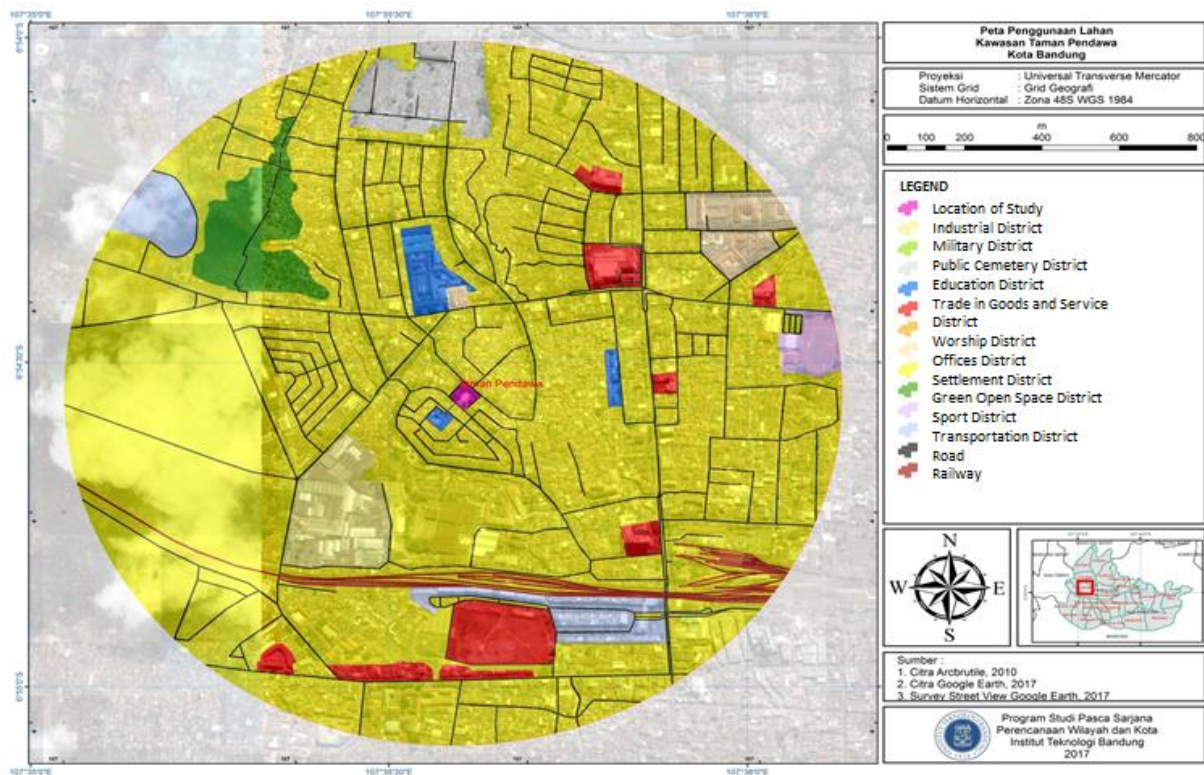
Pendawa Park is one of the non-thematic parks in Bandung, is located on Pendawa Road, Arjuna Urban Village, Cicendo Sub-district and has an area of 3,000 m<sup>2</sup>. Based on data from the Central Statistics Agency of Bandung in 2016, Arjuna Urban Village has an area of 63 ha and consists of 8 Neighborhood Units (RT), 68 Community Units (RW) and has 15,133 inhabitants. Arjuna Urban Village is dominated by settlements and other urban land use such as educational facilities and trade facilities of goods and services.

The Bandung Urban Spatial Plan 2015-2025 [29], related to Arjuna Urban Village strongly supports the sustainability of Pendawa Park in the present and in the future. This is evident from the development of the road network in anticipation of congestion problems around the location of the park, the arrangement of trade and linear services (informal sector activities/street vendors, pedestrian infrastructure including disability and bike paths integrated with mass transportation, and medium enterprises are part of the development of government offices, trade and services zones). Figure 2 shows the land use around Pendawa Park, while Table 4 shows the extent of land use around the park.

The spatial analysis using ArcGIS shows that the use of land around Pendawa Park is dominated by residential settlements with an area of 240,48 ha (79,46%), and trade and service 10.76 ha (3,42%). The strategic location of the park, close to educational facilities and settlements shows Pendawa Park's great potential in presenting a beautiful environment, a place to socialize and a location for the surrounding community to improve their economic level.

The observation in September showed that the intensity of the use of Pendawa Park was highest between 13.00-16.00 and lowest between 18.00-11.00. Except on Saturday and Sunday, the intensity of park visits was low. The low use of the park in the afternoon until the evening was caused by the lack of activity in the settlements of Arjuna Urban Village. One of the factors influencing the low the intensity of use at night is the absence of park lighting. This makes the Arjuna urban areas vulnerable to criminal acts such theft and robbery. The pattern of intensity of the use of Pendawa Park shows that the high use of the park coincides with the time the elementary school students of SD Kresna finish school. Moreover, the park is used to gather, relax, eat, exercise, and play. The intensity of use of space of Pendawa Park can be seen in Table 5.



**Figure 2.** Land use around Pendawa Park**Table 4.** Land use around Pendawa Park

No.	Information	Area (m <sup>2</sup> )	Area (ha)	Area Percentage (%)	Number of Buildings
1	Road	169,658.19	16.97	5.39	-
2	Railway	46,406.91	4.64	1.48	-
3	Industry	76,768.60	7.68	2.44	67
4	Public Cemetery	72,409.99	7.24	2.30	-
5	Education	32,532.54	3.25	1.03	30
6	Trade in Goods and Services	107,572.36	10.76	3.42	75
7	Offices	48,420.10	4.84	1.54	34
8	Settlements	2,404,772.39	240.48	76.46	28,708
9	Green Open Space	81,928.29	8.19	2.60	-
10	Sports	23,568.89	2.36	0.75	2
11	Transportation	77,941.46	7.79	2.48	28
12	Study Location	3,071.71	0.31	0.10	-
Total		3,145,051.43	314.51	100.00	28,944

**Table 5.** Intensity of use of Pendawa Park based on time of visit (per day/per hour)

Day	Time (00.00-23-00)																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sunday																								
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								
Estimation																								

Note:

Red: High (&gt;50 people)

Yellow: Medium (20-50 people)

Green: Low (&lt;20 people)

Based on the analysis of Pendawa Park, the location of the park has been in accordance with its function as a neighborhood park because most of the land use around the location residential housing. However, viewed from the intensity of its usage times, Pendawa Park is not used optimally.

### 3. Conclusion

Based on the study, the following conclusions can be drawn:

1. Parks in the city of Bandung are distributed to all districts in the city but the analysis shows that parks are unevenly distributed over the sub-district in Bandung. This can be seen in the sub-district of Ciparay, which has an area of 7.45 km<sup>2</sup> but the amount of park is small with two parks. In contrast, Buah Batu Sub-district has a total area of 7.93 km<sup>2</sup> and 39 parks.
2. The Bandung Detailed Spatial Plan 2015-2025 strongly supports the sustainability and existence of the Music Park in Merdeka Urban Village. The policies in the Spatial Plan include the development of road access networks and light railways in anticipating congestion problems, structuring services and trading linear (informal sector activities/street vendors, pedestrian infrastructure including disability and bike lanes integrated with mass transport, providing space for small and medium enterprises are part of the development of government offices, trade, and services zone), and the policy of upgrading the electricity network (for park lighting).
3. The spatial analysis using ArcGIS shows that the land use around Music Park is dominated by residential area, 155.37 ha (49.40%) and military complexes, 55.42 ha (17.62%). The strategic location of the park, close to educational facilities and settlements offers great potential in presenting a beautiful environment, a place to socialize, and the location for the surrounding community to improve their economic level.
4. Observations in September showed that the intensity of use of Music Park is highest from 14:00 to 18:00, while the lowest use is between 23:00 and 09:00, except on Saturday when the intensity of use is highest at 20.00-21.00. The pattern of intensity of use of Music Park shows that the high intensity of use of Music Park coincides with the school hours of high school students of SMA 3 and SMA 5. Moreover, the park is used as a place to gather, study, relax, eat and play. The analysis result of Music Park shows that the location of the park is in accordance with its function as a neighborhood park because most of its land use around the park consists of residential neighborhoods. However, the intensity of its usage time shows Music Park is still not utilized optimally.
5. The observation in September showed that the intensity of the use of Pendawa Park was highest between 13.00-16.00 and lowest between 18.00-11.00. Except on Saturday and Sunday, the intensity of park visits was low. The low use of the park in the afternoon until the evening was caused by the lack of activity in the settlements of Arjuna Urban Village. One of the factors influencing the low the intensity of use at night is the absence of park lighting. This makes the Arjuna urban areas vulnerable

to criminal acts such theft and robbery. The pattern of intensity of the use of Pendawa Park shows that the high use of the park coincides with the time the elementary school students of SD Kresna finish school. Moreover, the park is used to gather, relax, eat, exercise, and play. The Based on the analysis of Pendawa Park, the location of the park has been in accordance with its function as a neighborhood park since most of the land use around the location residential housing. However, viewed from the intensity of its usage times, Pendawa Park is not used optimally.

6. Location characteristics are important (in addition to landscape elements, sports activities, cultural quality, night activities, and traffic support facilities) in the provision and planning of public spaces (parks). However, the study shows that the physical characteristics of the neighborhood around the park location should be supported by looking at the social characteristics of the community as users of the park. This can be seen in the use of space in Pendawa Park; although the land use is more dominated by the settlement area than Music Park, the field observations showed that its use is ineffective.

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