

Urban Park Arrangement Concept to Support Improvement of Active Physical Activity and Recreation Activity

(Case Study : Active Parks in Sub-District Gubeng of Surabaya City)

Rusdina Atsari*, Haryo Sulistyarso**, Adjie Pamungkas**

* Department of Architecture, Faculty of Architecture, Design and Planning, Sepuluh Nopember Institute of Technology, Surabaya

** Department of Urban and Regional Planning, Faculty of Architecture, Design and Planning, Sepuluh Nopember Institute of Technology, Surabaya

DOI: 10.29322/IJSRP.8.8.2018.p8043

<http://dx.doi.org/10.29322/IJSRP.8.8.2018.p8043>

Abstract – Some studies on parks in Gubeng Sub-District shown that there is park that can not be used optimally by the community in terms of function, design, accessibility and it's compiler materials. So how the concept of an active park arrangement that can meet and encourage active physical activities and recreational activities on active park in Gubeng Sub-District area? Mixed method sequential is the research approach that used in this research. Data were collected using field observation and questionnaire, then analyzed using descriptive analysis and correlation statistics. Observation and analysis on park characteristics shown that active parks in Gubeng Sub-District belongs to three typologies, first is an active park that available in housing area that serve neighborhood community (neighborhood park). Second is an active park that serve urban society (urban park). Third is an active park which not only serve Surabaya urban community but also citizen from other city or region (urban-regional park). Correlation analysis then show that active park on higher level of service have more variables that are correlated significantly with visitors satisfaction while they're doing activities in active park. Arrangement concept for neighborhood park is directed to use participatory with citizen in housing community. On urban park, the arrangement concept is directed to match existing park theme and major activities that occur in urban park. Next for active urban-regional park, it's arrangement directive is to optimize operational management system as well as their competence of park management personnel to support it's high intensity of park utilization at it's peak visiting hours.

Kata Kunci - active park, active physical activity and recreation activity, active park arrangement concept.

I. INTRODUCTION

Since 2002, Surabaya Local Government has sought to improve the number of parks as part of public green open space provision to fulfill mandate of Law No. 26 Year 2007 on Spatial Planning which ask that 20% (twenty percent) of city area serves as public green open space [1]. On 2016, Gubeng Sub-District Area have already had 124.548,14 m²

of public green open space. This numbers consist of 87.132,72 m² passive public green open space and 37.415,42 m² active public green open space [2].

Active public green open space in Sub-District Gubeng Area are Srikana Park, Biliton Park and Flora Park. Previous research on Biliton Park shown that this park performance is not yet optimal [2] on variables like function, design, accessibility, and it's compiler materials [3]. On Flora Park, almost every day there are students from kindergarden to college student and even out of town tourist groups visit this park and spend their time here doing various activities like studying and doing outdoor exercise [4].

Previous study mention that park accesibility is an important value in encouraging visitors interest to visit a park in almost all urban park studies [5]. Other study also note that feature or park facilities, aesthetic value of park, and perception on safety in urban park are also part of park characteristics that take effect on visitors physical activities while in a park [6]. So in this research, we try to compose concept for active park arrangement that can fulfill and encourage active recreation activity in Gubeng Sub-District active parks.

II. ACTIVE PHYSICAL ACTIVITIES AND RECREATION ACTIVITIES IN URBAN PARK

Physical activities is any body movement that produced by skeletal muscles that need that require energy expenditure, including activities performed during work, play, completion of domestic work, activities in travel or transportation, and includes recreational activities [7]. Recreation is an activity outside of earning a living which is different from everyday activities, and only done occasionally [8].

There are various types of recreational activities, one of those is recreational activity according to the subject participation. In this type, recreational activity are divided into active recreation and passive recreation. In active recreation, subject goes straight and plays a direct role to perform the recreational action for himself. Subject of this type of recreation usually performe physical activities that spent energy. Those

activities are like sports activities such as hiking and playing soccer, traveling and cplay hildren traditional plays. As for passive recreation, recreational actors are not doing much activities, they just enjoy the object of recreation and more silent. Examples : watching movie or television and listening music [9].

Ministry of Public Work Regulation No. 05 year 2008 about Guidelines for the Provision and Utilization of Green Open Space, defines an urban park as open spaces which have social and aesthetic function to be use for recreational activities. Ussually local goverment define urban park only as park [10].

Type of urban park base on its activity consist of [11] :

1. Urban park for active recreation activities
 This park is equipped with facilities that support active park use to gain fun, freshness and fitness. This park can serve as park for sports activities, children's playground, park for boy scout activities and so on.
2. Urban park for passive recreation activities
 This park is formed so visitors can enjoy it's visuals beauty and it's shady area without holding any activities while they spend time at the park. Fences usually was installed along outer side of the park to maintain the beauty of plants in the park. In this park, visitors can not hold activities because the park ussually locate at T-junction, crossroads, or on the road median. [12].
3. City's recreation park
 Is a park for active and passive recreation where in this park visitors can enjoy the beauty of the park as well as utilizing the park area for other activities.

Generally a park physical characteristics consist of two main elements which are hardscape like walkways, benches, garden lights, etc. and softscape like shady plants, shrubs, grass etc. [13]. For visitors characteristics consist of social economic characteristics such as gender, age, address, education level, occupation and income, and also characteristic of visitation pattern like type of activity, frequency, visiting duration, companion, and transportation type [14].

In Benefits of Urban Park report, it was mentioned there are few aspects considered to be influential on correlation between park provision and it's usage for active physical activities and recreational activities. Those aspects are distance or proximity, facilities, park quality in general, park size, total plants shading area, species diversity, duration of time spend in the park and park visiting frequencies (Konijnendijk, et.al, 2013) [15]. In comparison, these aspects are also in accordance with the review results by McCormak et. al. (2010) and the framework concept developed by Bedimo-Rung et. al. (2005) which explains that accessibility to parks, park features or facilities, park conditions, park aesthetic value and perception of a park's security is characteristics of parks that can overlap and influence each other, both positively and negatively and also can affect visitors active physical activity while in the park [5][6]. Based on this review, aspect of observation that used in this research includes aspects of facilities and features within the park, accessibility to the park, cleanliness and maintenance of the park, aesthetic value and the condition park vegetation, and security within the urban park.

III. RESEARCH METHODE

In this research, we are is using mixed methode sequential as the research approach. Observation aspects used in this research are park physical characteristics, visitors characteristics, and aspects that influential to visitors active physical activities and recreational activities. Those aspects are aspect of urban park feature and facilities, aspect of urban park accesibility, aspect of aesthetic value and vegetation condition in urban park, and also safety aspect of urban park. Each aspect of observation is spelled out into several research variables as presented in Table 1.

Table 1. Variables that considered to have an effect on visitors active physical activity and recreational activity in active park

Observation Aspects	Variables Number	Variables Name
(1)	(2)	(3)
Urban park feature and facilities	1	Overall quality of facilities
	2	Pedestrian paths and walkways
	3	Seating facilities
	4	Playing facilities
	5	Health and sports facilities
	6	Public toilet facilities
Urban park accesibility	7	Accessibility and ease of access
	8	Access to the park using public transport
	9	Parking area
	10	Access for people with special needs
	11	Distance from residence
	12	Travel time to the urban park
Cleanliness and maintenance	13	Quality of facilities maintenance and cleanliness
	14	Quality of facility maintenance
	15	Quality of hygiene maintenance
	16	Number and quality of the trash bin
Aesthetic value and vegetation condition in urban park	17	Aesthetic value and condition of vegetation
	18	Conformity of facility placement
	19	Quality of scenery and visual appeal
	20	Suitability of plant and plant maintenance
	21	Arrangement of informal sector
Safety of urban park	22	Urban park quality of safety
	23	Availability of security posts and presence of security personnel
	24	Condition of fences
	25	Urban park lighting conditions

Source : Research synthesis, 2017

Data collection wes done using field observation and questionnaire. Field observation was conducted to observe the condition of existing active site park. Furthermore, we conduct questionnaires distribution to 97 respondents act as samples for visitors of active park Gubeng Sub-District. Each park has different number of respondents, 20 respondents for Srikana

parcs, 30 respondents for Biliton parks, and 47 respondents for Flora Parks.

After completing data compilation, data was then analyze using some analysis technique from descriptive analysis, statistic descriptive analysis, and correlation statistics. Results from this analyzes then used as basics in drafting active park arrangement concept that can support active physical activities and recreational activities in active parks at Gubeng Sub-District.

IV. RESULT AND DISCUSSION

A. Typology and Characteristic of Active Parks in Gubeng Sub-District

Active parks in Gubeng Sub-District's can be categorized into three categories :

1. Active parks serve in level of neighborhood environment. This type of parks is used for social interaction between residents in the community of housing environment. This type of park was represented by Srikana Parks that located at 2nd Karang Wismo street RT.002 / RW.007 Kelurahan Airlangga, Gubeng Sub-District. Facilities in this park include paths, reflection paths, park benches, bins, garden lights and 25 (twenty five) vegetation species.



Figure 1. Layout of Srikana Park

2. Active parks serve in level of urban community (urban park), used for resting, sports, and transit activities. This park is represented on Biliton Park located on the west side of Biliton Street in Gubeng Sub-District. Vegetation at Biliton Park consists of 18 (eighteen) species of shade plants, 29 (twenty nine) species of shrubs and grasses. Facilities in this park which mainly support for resting acitivity, sports and transit activities including sidewalks, walkways, reflection paths, park benches, children's play areas, areas with sports equipment, parking areas, garden lights, trash bins, some informal sidewalk vendors who sells around the park and the existence of a healthy gym program that is held every Sunday morning.



Figure 2. Layout of Biliton Park

3. Active park which serve on urban and regional level (urban-regional park). This park is represented by Flora Park which previously known as Bratang Seedling Garden. In this park which dominantly use for activities related to education, playing and family recreation, this activities was accommodate with the existence of various supporting facilities such as library and reading facilities, *Broadband Learning Center – BLC*, a number of children's play areas, animal-raising areas, areas for sports equipment, fish ponds, fountain ponds and halls that are usually used for various cultural events and cultural performances. In this park, picnic activities are usually done during peak visiting times such as on weekends or on national holidays.



Figure 3. Layout of Flora Park

B. Variables Which Have Significant Effect on Visitors Satisfaction While Spending Time in Active Park

This research is using correlational statistical analysis to know about variables that have significant effect on visitors perception of satisfaction during their time in active park. In neighborhood scale active park, visitors perception of satisfaction was influenced significantly by all variables on Cleanliness and Maintenance Aspect, and also most variables on Aspect Aesthetic Value and Vegetation Condition in Urban Park. In total, there are 11 (eleven) variables that affect visitors

perception of satisfaction at neighborhood scale active parks as presented in the Table 2. below.

Table 2. Influenced Variables on Respondent's Perception of Satisfaction at Neighborhood Scale Active Park.

Observation Aspects	Variables Number	Variables Name
(1)	(2)	(3)
Urban park feature and facilities	2	Pedestrian paths and walkways
	4	Seating facilities
Urban park accesibility	-	-
Cleanliness and maintenance	13	Quality of facilities maintenance and cleanliness
	14	Quality of facility maintenance
	15	Quality of hygiene maintenance
	16	Number and quality of the trash bin
	17	Aesthetic value and condition of vegetation
Aesthetic value and vegetation condition in urban park	18	Conformity of facility placement
	19	Quality of scenery and visual appeal
	20	Suitability of plant and plant maintenance
	21	Arrangement of informal sector
	22	Urban park quality of safety
Safety of urban park	-	-

Source : Analysis Result, 2018

At active park for urban area level of service and also in urban-regional level of service, visitors perception of satisfaction is influenced by variables on aspect of urban park feature and facilities, urban park accessibility aspect, cleanliness and maintenance aspect, aspect of aesthetic value and vegetation condition in urban park, and safety aspect of urban park.

Table 3. Influenced Variables on Respondent's Perception of Satisfaction at Urban Scale Active Park.

Observation Aspects	Variables Number	Variables Name
(1)	(2)	(3)
Urban park feature and facilities	1	Overall quality of facilities
	2	Pedestrian paths and walkways
	3	Seating facilities
	5	Health and sports facilities
	6	Public toilet facilities
	9	Parking area
Urban park accesibility	10	Access for people with special needs

Observation Aspects	Variables Number	Variables Name
(1)	(2)	(3)
Cleanliness and maintenance	13	Quality of facilities maintenance and cleanliness
	14	Quality of facility maintenance
	15	Quality of hygiene maintenance
	16	Number and quality of the trash bin
	18	Conformity of facility placement
Aesthetic value and vegetation condition in urban park	19	Quality of scenery and visual appeal
	20	Suitability of plant and plant maintenance
	21	Arrangement of informal sector
	22	Urban park quality of safety
	23	Availability of security posts and presence of security personnel
Safety of urban park	25	Urban park lighting conditions

Source : Analysis Result, 2018

Table 4. Influenced Variables on Respondent's Perception of Satisfaction at Urban-Regional Scale Active Park.

Observation Aspects	Variables Number	Variables Name
(1)	(2)	(3)
Urban park feature and facilities	1	Overall quality of facilities
	2	Pedestrian paths and walkways
	3	Seating facilities
	4	Playing facilities
	5	Health and sports facilities
	6	Public toilet facilities
Urban park accesibility	7	Accessibility and ease of access
	8	Access to the park using public transport
	9	Parking area
	10	Access for people with special needs
	12	Travel time to the urban park
Cleanliness and maintenance	13	Quality of facilities maintenance and cleanliness
	14	Quality of facility maintenance
	15	Quality of hygiene

Observation Aspects	Variables Number	Variables Name
(1)	(2)	(3)
		maintenance
	16	Number and quality of the trash bin
Aesthetic value and vegetation condition in urban park	17	Aesthetic value and condition of vegetation
	18	Conformity of facility placement
	19	Quality of scenery and visual appeal
	20	Suitability of plant and plant maintenance
	21	Arrangement of informal sector
Safety of urban park	22	Urban park quality of safety
	23	Availability of security posts and presence of security personnel
	24	Condition of fences
	25	Urban park lighting conditions

Source : Analysis Result, 2018

Based on the analysis of the variables that significantly affect the perception of visitor satisfaction as presented in Table 1, Table 2, and Table 3. it can be seen that the higher the scale of green open space service (RTH) of the active park public, the more variables that significantly influence the perception of the satisfaction of the active garden visitor.

C. Active Park Concept of Arrangement in Gubeng Sub-District

The conceptual directives arrangement of each active garden are structured based on good public space criteria which is space that holds to democratic value, responsive value and value of a meaningful space as well. This arrangement also need to adapt to the park typology and characteristics.

1. Arrangement concept for typology of an active park in neighborhood environment scale (housing environment) is to apply on participatory concept. With this concept, we are trying to make neighborhood community to be more involve in every step of park management from planning, developing, and managing their neighborhood park. Hopefully this concept can help creating active neighborhood public park in accordance with specific requirements from neighborhood residents.
2. At urban scale of an active park, directives arrangement concept for this type of park can be prepared by formulating park function to be achieved in advance or it can also be done by accomodating and optimizing today existing park function. For example like what have been done in Biliton Park. Theme for this park has been set as park for elderly people and also serve it's dominant acivities which are place for resting, exercising, and place for transit. So

direction for proposed arrangement concept is endeavored to match with park theme and utilization function of the park. Efforts that can be done is like optimizing accessibility so it will be easier for elderly people to access the park even though they are using walker or wheel chair.

3. For active park at urban-regional level of services, directives arrangement concept for this type of active public park is by optimizing park operational and management system as well as competence of involved park management personnel. Hopefully this effort will greatly support visitors comfort while doing their activities in this active park. Optimum level of park operational and management are needed especially during weekends and national holidays which are the peak of visiting time to this active public park.

V. CONCLUSION

As seen in their characteristics, active public parks in Gubeng Sub-District are belongs to three park typologies which are : first, active park that serve in neighborhood and housing community with functions for social interaction of citizens in residential environment. Second is active park that serve for urban community with function for resting, exercising, and transit. Third is active park that serve in level of urban and regional area which use for education related activities, playing, and family recreation. Furthermore, result from statistical correlation analysis shows that active park in higher level of services have more influenced variables that correlate significantly with visitors perception of satisfaction while they doing activities in active park.

Conceptual directives arrangement for each active park arranged based on good public space criteria which adheres to values of democratic, responsive and meaningful public place and also adapt to characteristics of each park typology. Concept of participatory with neighborhood housing community is directed for active park in level of neighborhood community. For active park in level of urban community , arrangement concept is directed to adjust on established park theme, park function and it's dominant activities. For active park which serve in level of city and regional, the proposed conceptual arrangement directives for this park is optimizing the park operational and management system, as well as competence of it's management personnel to support the high intensity of park utilization at the peak of the visiting time.

REFERENCES

- [1] *Pemerintah Republik Indonesia (2007), Undang Undang No. 26 Tahun 2007 tentang Penataan Ruang, Pemerintah Republik Indonesia, Jakarta.*
- [2] *Ramadhani, Anindita, "Penataan Taman Lansia di Kota Surabaya Berdasarkan Karakteristik Kebutuhan Masyarakat Lanjut Usia". Master Thesis, Institut Teknologi Sepuluh Nopember, Surabaya (2015).*
- [3] *Amini, Dwi Rahayu,. Pamungkas, Sigmawan Tri, "Keamanan bagi Pengguna Lanjut Usia di Taman Lansia*

Surabaya". Jurnal Mahasiswa Jurusan Arsitektur Universitas Brawijaya Vol. 5 No.3 (2017),
<http://arsitektur.studentjournal.ub.ac.id>.

- [4] Anonim, "Taman Kota Surabaya yang Menawan", <https://www.regional.kompas.com>, 08/11/2016, (2016)
<https://regional.kompas.com/read/2016/11/08/13302981/taman.kota.surabaya.yang.menawan>
- [5] Bedimo-Rung, Ariane L., Mowen, Andwer J., Cohen, Deborah A., "The Significance of Parks to Physical Activity and Public Health - A Conceptual Model", American Journal of Preventive Medicine (Am J Prev Med 2005;28(2S2)), (2005).
<https://www.sciencedirect.com/science/article/pii/S0749379704003046>
- [6] McCormack, Gavin R., Rock, M., Toohey, A. M., Hignell, D., "Characteristics of Urban Parks Associated With Park Use and Physical Activity : A Review of Qualitative Research". Elsevier - Health & Place, Vol. 16 (2010).
https://www.academia.edu/13499212/Characteristics_of_urban_parks_associated_with_park_use_and_physical_activity_A_review_of_qualitative_research
- [7] World Health Organization (WHO), "Global Recommendation on Physical Activity for Health", WHO, Swiss, (2010).
http://apps.who.int/iris/bitstream/handle/10665/44399/9789241599979_eng.pdf;jsessionid=D595B212C578468624F4C378EDEBCDDDB?sequence=1
- [8] Putra, Aulia Ramdhana A., "Landasan Konseptual Perencanaan dan Perancangan Pusat Edukasi dan Rekreasi Kopi di Menoreh Kulon Progo Yogyakarta", Undergraduate Thesis, Atma Jaya University, Yogyakarta (2016).
<http://e-journal.uajy.ac.id/9104/>
- [9] Zuastika, Irma, "Family Adventure World (Dunia Petualangan Keluarga)", Undergraduate Thesis, North Sumatera University, Medan (2010).
https://www.researchgate.net/publication/45646344_Family_Adventure_World_Dunia_Petualangan_Keluarga_Arsitektur_Rekreatif
- [10] Pemerintah Republik Indonesia, Peraturan Menteri Pekerjaan Umum No. 05/PRT/M/2008 tentang Pedoman Penyediaan dan Pemanfaatan Ruang Terbuka Hijau di Kawasan Perkotaan, Pemerintah Republik Indonesia, Jakarta (2008).
- [11] Suharto, "Dasar-dasar Pertamanan", Media Wiyata Semarang (1994)
- [12] Hidayati, Nurul, "Kebijakan Pemerintah Kota Surabaya Dalam Memanfaatkan Ruang Terbuka Hijau Kebun Bibit Bratang. Jurnal Review Publik Volume 05. Nomor 01. Halaman 152 – 174, (2015)
<https://jurnalpolitik.uinsby.ac.id/index.php/jrp/article/view/64/64>
- [13] Arifin, Hadi Susilo, Nurhayati, "Pemeliharaan Taman, Edisi Revisi", Penebar Swadaya, Jakarta (2005).
- [14] Putra, Eka Adhitya H.P., Khadiyanto, Parfi, "Pengaruh Privatisasi Ruang Terbuka Publik Taman Tabanas Gombel Semarang Terhadap Tingkat Kenyamanan Pengunjung", Jurnal Teknik PWK Volume 3 Nomor 3 2014, Hal. 446 – 460 (2014).
<https://media.neliti.com/media/publications/214178-pengaruh-privatisasi-ruang-terbuka-publi.pdf>
- [15] Konijnendik, Cecil C., Annerstedt, M. Nielsen, A.B., Maruthaveeran, S., "Benefits of Urban Parks - A systematic Review", A Report for International Federation of Parks and Recreation Administration (IFPRA), Copenhagen, (2013).
<https://worldurbanparks.org/images/Newsletters/IfpraBenefitsofUrbanParks.pdf>

AUTHORS

First Author – Rusdina Atsari, Master Student at Faculty of Architecture, Design and Planning, Sepuluh Nopember Institute of Technology, email : dina.atsari@gmail.com.

Second Author – Haryo Sulistyarno, Lecturer at Faculty of Architecture, Design and Planning, Sepuluh Nopember Institute of Technology, email : haryo.its@gmail.com

Third Author – Adjie Pamungkas, Lecturer at Faculty of Architecture, Design and Planning, Sepuluh Nopember Institute of Technology, email : adjieku@gmail.com

Correspondence Author – Rusdina Atsari, Master Faculty of Architecture, Design and Planning, Sepuluh Nopember Institute of Technology, email : dina.atsari@gmail.com.