

The Role of City Parks: The Case Study of Central Surabaya, East Java, Indonesia

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Abstract

Public space has a certain role in life in urban areas, as a place that is easily accessible, safe, have influence, and benefits of user. This study aims to (1) Determine the quality of city parks in the use of space for their users (2) Identify the role of land use around city parks in the relationship between physical patterns and their activities (3) Identify user behavior patterns. Behavior mapping is a process of observational methods and gear for observation at a location in conditions and times of weekday and weekend. In getting an accurate map of the scale of the observed area, first know and determine the types of activities and details of the behavioral activities to be observed, scheduling within a certain time. And do the system of recording activities, counting, coding the types of activities, taking pictures, and analyzing. The results of this study consists of the role of internal and outside (land use) circulation, and social interaction space. This observation identifies the relationship between land-use with the on-site of park and mapping techniques that produce a pattern of park user activity. The results in counting have a very significant difference between weekday and weekend, results in 3 parks, namely Ekspresi Park weekday (50 visitors), weekend (132 visitors); Lansia Park weekday (50 visitors), weekend (104 visitors); and Bungkul Park weekday (235 visitors), weekend (705 visitors). In conclusion, based on several analyses and observations: Ekspresi Park has a special characteristic that is an educational park with several facilities owned, children dominate the average visitor, Lansia Park has a special characteristic that is an elderly park with several facilities owned, elderly people dominate the average visitor, and Bungkul Park has a special characteristic that is a community park with some complete facilities, visitors dominate the average visitors.

Keywords

Role of City Park

Behavior Mapping

City Park

Quality of City Parks

Surabaya

1. Introduction

City parks in Central Surabaya have a different character, this can be seen from the land-use area around city parks. In the following research, 3 city parks in Central Surabaya have been determined, including Bungkul Park (BP) located in the Southern part close to office area, Lansia Park (LP) located in the middle area close to residential area, and Ekspresi Park (EP) located in the Northern area close to Government area and Education area. The following parks can represent city parks in Central Surabaya. The location of the city park is a reference to the success of the city park. The success of city parks can be seen from community visits, public space facilities that can facilitate the community to carry out activities, and also have the comfort and safety of visitors in the City Park. According to Stephen Carr, Mark Francis, Leanne G. Rivlin & Andrew M. Stone, 1992, literature in urban planning and design shows that public spaces are both responsive, democratic and meaningful. The environment around city parks is expected that by mixing various land uses we can achieve a more vibrant, attractive, safe, comfortable, appropriate, and sustainable urban lifestyle. The area around 3 city parks has various land uses including shops retail, residential areas, education areas, government office areas, office areas, business areas, and commercial places. In this observation, observing the behavior setting by paying attention to the activities and physical environment. This supports research because it has several public facilities around the city park. This public space is used by the surrounding community and visitors who are in a variety of activities such as playing, sports, eating, training, community gathering, and various public activities.

The use of city parks in Central Surabaya has uneven visitors, some places are very crowded by visitors and some places are rarely visited by visitors. One of them is in a city park that has facilities for a

community of practitioners and those who have complete facilities to carry out activities that visitors want. This is a problem because at certain times some city parks are crowded with visitors, and there are some city parks at certain times that have no visitors at all. From this, it appears that the spatial attribute is an important factor in determining success in the use of public open space. Based on (Gehl, 1936), indicator to measure successful public space: access and linkages, comfort and image, uses and activities, and sociability. The problem of city parks also arises from the lack of interest of visitors towards visiting city parks. Public open space is a place of setting behavior. Public space as part of urban space cannot be separated from the existence of a city. According to (Sunaryo, 2004), the city system is the fulfillment of the needs of life for the community which includes shelter, work, and recreation. Public space has an important meaning for the area or urban area because the main role of public space is to align the life patterns of a city's community (Dwi, Angga, Rifan & Rachadi, 2013). City residents who have activities, from morning to evening and even from the beginning of the week until the end of the week are waiting for the coming of the holiday. Doing the same activity every day will certainly cause boredom. Urban communities need a location that is different from the environment in which they work to carry out activities outside their routine. The existence of public space in a city aims to provide a location that can be used by city residents to carry out social activities in comfort (Dwi, Angga, Rifan & Rachadi, 2013).

City Park is one property that must be owned by a city for the sake of interaction between citizens and applies to the public. Public open spaces can serve the social needs of urban communities and provide knowledge to visitors. Utilization of public open spaces by the community as a place to relax, play, walk, physical exercise and read (Gehl, 1936). Public open space can be said as a collection of many setting behavior. But it will be a problem if one

setting behavior dominates and controls public open space. Regarding to (Hesty, 2005), the high number of urban population and continues to increase from time to time has implications for increasing pressure on the use of urban space, so that the spatial planning of urban areas needs attention, especially those related to the provision of public open spaces (city park) in urban areas. Public open space to function properly, then the setting behavior must be controlled. If a problem occurs in public open space, setting behavior can be controlled by looking at the pattern of activities. Interaction that occurs on an ongoing basis will bring a development, both in terms of function, provision of facilities, and activities that occur in city parks. Actually there is nothing static, as is the case with city parks as public spaces, as time goes by there must be changes. The function of the park at the planning stage might change when it is confronted with the existing reality. Provision of park facilities will certainly change, both in terms of the amount that will increase or decrease. Then the activities carried out by people who are in the city park area will also experience a development.

In the observation to search for data and analysis, the 'Behavioral Mapping' process was conducted with the aim of knowing the patterns and activities of users in the 3 city parks. Retrieval of data makes it easy to find various types of activities carried out. The behavioral map is a process of observational methods and gear for observation at a location or region in conditions and times of weekday and weekend. It was developed by (Ittelson, Rivlin & Prohansky, 1970) to write down on paper as it occurs in a behavior activity. Based on (Goličnik & Marušić, 2011), spatial features and behavior are then linked in both time and space. There are some fundamental conditions which need to be met before any recording of behavior can start. It is necessary to obtain an accurate scale map of the area to be observed, to clearly define the types of activities and details about behavior's to be observed, to schedule specific times

and their repetitions for observation, and to provide a system of recording, counting and analyzing. Behavior mapping has several processes, namely by mapping, counting, tracing, and photographing.

In this statement, it was thought that a study of public open space utilization was needed of city parks in Central Surabaya which is an active city park that has various activities, and as a tourist visit by some visitors from outside Surabaya city. In this case, to find out the pattern of public open space utilization that was carried out by visitors, the "Behavioral Mapping" methodological approach was used, to find out various activities and the spread of utilization patterns of activities that can be seen as a whole at 3 City Parks and have different characteristics of the park in Central Surabaya. The results of the study can find activities and behaviors of public open space utilization by visitors to find out the spread of activities that occur in the central Surabaya city park. After that, it can be seen that the pattern of the intensity of existing activities in the future can be a lesson for the intensity of existing activities so that the City Park in Surabaya can be used comfortably and efficiently. Therefore, this study focuses on the role of city parks in Central Surabaya and the purpose of this study is to determine the factors that are problematic according to the perception of visitors by investigating human behavior in 3 City Parks in Surabaya Centre. Perception of visitors is the perspective think of the community towards city parks both negatively and positively, which is currently the way of the public's view of city parks began to move interest in modern facilities such as cafes, malls, and facilities that have Wi-Fi. Users are activities carried out in the room where they will live. Moreover, the identification of good public space in Surabaya City will be revealed. In conclusion, it is expected that the results of this study can provide benefits as a basis for city parks management that can meet the needs of the community as social interaction in the City.

2. Literature Review

2.1 Quality of City Space

Based on (Gehl, 1936), the fifth principle is on improving the quality of city space in order to invite people to spend more time, among others:

a) Carefully locate the city functions to ensure shorter distances between them and a critical mass of people and events.

b) Integrate various functions in cities to ensure versatility wealth of experience, social sustainability and a feeling of security in individual city districts.

c) Design city space so it is inviting and safe for pedestrian and bicycling traffic.

d) Open the edges between the city and buildings so that life inside buildings and outside in city spaces can work together.

e) Work to strengthen the invitations to invite longer stays in city space because a few people spending much time in a place provide the same sense of lively space as many people spending only a short time. Of all the principles and methods available for reinforcing life in cities, inviting people to spend more time is the simplest and most effective.

Regarding to (Carmona, 2003) mentioned that there are several factors that must be considered in optimizing the use of public space, namely:

a) Use of space, where different spaces accommodate different functions and activities.

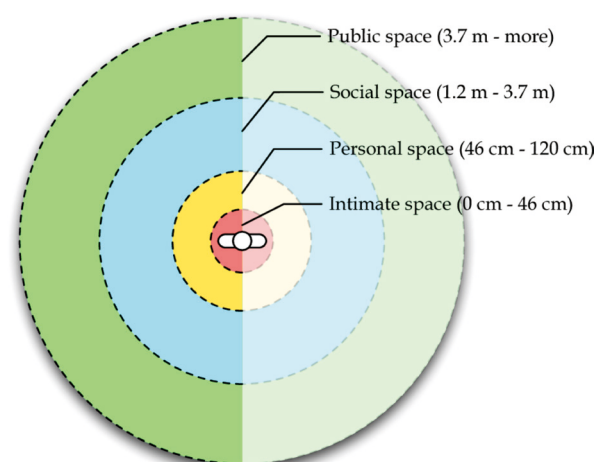
b) Space form and context, is defined as the physical character of the space. The shape of the space can be marked by the presence of physical boundaries and interesting objects or focal points. The definition of space is also related to access and transition space.

The role of architectural elements of a public space on the pattern of activity does not only occur in the public space itself, but also has an influence on the environment around the public space, in relation to the buildings around it.

2.2 People Perception of Public Spaces

Urban image is a form of perception of a city in the picture, both happening to local and external residents. This picture is not only a description of the attitudes and behavior possessed by many people, but also used as a way of socializing with the surroundings and communicating through the visual state of the city. According to (Wagner, 1981) because the image of the city is based on human activities and behavior, the following are strongly influenced by several elements formed by the city, especially the visual elements of the city.

People's perception of the surrounding environment can provide social interaction with them in the environment itself. The user himself is an activity carried out on the space where they will live. In other cases, when the community is unable to stay it only reflects an activity that does not have a sense of comfort in the space. Society inherently can be observed to have differences in their relationship with one person to another in terms of distance to space to carry out activities. Based on (Hall, 1966) has a definition of the difference in the four distances where interpersonal activities that often occur in users who have categories include intimate, personal, social and public.



Source: Hall, 1966

Figure 1. User's Levels of Space Intimate, Personal, Social, and Public

- Intimate distance is 0 to 46 cm, the distance at which strong emotions can be exchanged.
- Personal distance is 46 cm to 1.20 m, the contact distance between close friends and family members.
- Social distance is 1.20 m to 3.70 m, describes the distance at which conversations about work, vacation memories and other types of ordinary information can be exchanged.
- Public distance is more than 3.70 m to more, describes the distance of more formal contact and one-way communication.

2.3 Successful of Public Open Space

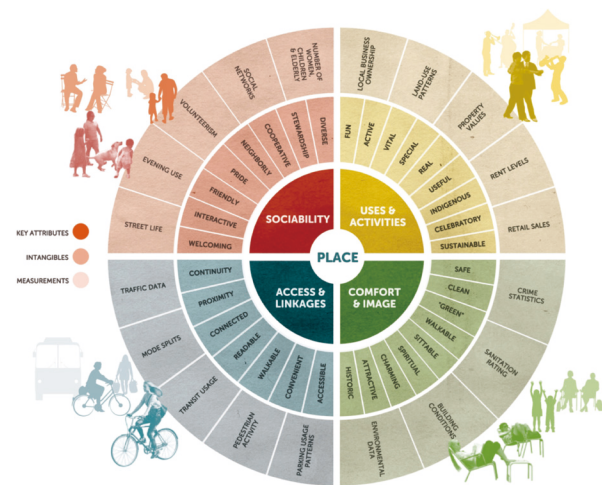
The good function of a public spaces services as one important element in our public and social life. Based on (PPS, 2012) Public space projects by evaluating the quality of public spaces by many people around the world considers the successful of these places in four following key qualities:

- Assess and communication; accessibility of public space.
- User and activity; cooperation and involvement of people in public space activities.
- Relief and imagine ability the sense of relief in space and creating a good mental image from public space.
- Sociability of public space; it means a place that people get together to meet each other.

According to (PPS, 2012), a principle to evaluate usages and activities of a place:

- Usage and activities that have more opportunity to take part in involvement of people with Space.
- There is good equivalence between men and women usages and activities
- Various age groups such as old, young and children used spaces.
- Space is used during morning, noon, after noon and night.
- Using space by individuals, groups or social.

A successful public space is where the place is able to provide community social activities, provide health, a place to meet one another, without any difference, and provide good quality for the community. In evaluating public space, according to (PPS, 2012) Project of Public Space has found a method that to be successful public space, they have the following four qualities of public space: easily accessible; many people are involved in various activities there; friendly and comfortable place; a social place to meet one another and able to provide an interest in visiting public space automatically. Project of Public Space draws the diagram below as a tool to assess the place for good or bad.



Source: Project of Public Space, 2012

Figure 2. What makes a Great Place?

2.4 Activities of Public Space

According to (Ittelson, Rivlin & Prohansky, 1970) in introduced the “activity map” in environmental psychology for a summary of the observed frequency of activities. This method involves recording the patterns of people’s activities within a space on a map. Based on (Ittelson, Rivlin & Prohansky, 1970), pointed out that how people perceive and experience the urban environment affects what they do with it and as a result influences how they experience a place.

An activity can also consist of various sub-activities related to each other, known as the system of activity” (Hariyadi et al., 1995). The activity system in a public space is closely related to three main elements, namely street vendors as an activity support area, parking lots, and pedestrians related to their circulation patterns. The pattern of activities associated with the use of existing space, divided into three types, namely fixed elements, semi-fixed elements and non-fixed elements (Rapoport, 1977).

Based on (Donggen Wang et al., 2012) propose a framework for studying the social implications of community activities through travel and activities. They use the four characteristics of the activity space to find out the extent to which individual societies carry out social activities:

1) Extensity: the spatial distribution of activity space, to measure the level of mobility and ability to achieve space;

2) Intensity: the duration of the visit of the public to the public space area, which is measured in an open area contained in daily life;

3) Diversity: different places in the space of community activities, measured by various social lives and activities in daily life;

4) Exclusivity (non-exclusivity): the level of one’s activity in mobility, which is seen in the use of private transportation (for example, cars and motorbikes) and exclusive spaces (for example, special club members) with those using public transportation and public spaces (non-exclusivity).

3. Methodology

3.1 Location and Time of Research

The location focus of this research was conducted in the Central Surabaya section, which is located in the Central Business District (CBD). With some considerations that have been made by researchers, the location of the park in Central Surabaya is the park that is said to have the most

character and a great impact on the people of Surabaya.

The observations carried out in this study were carried out in December 2018 - January 2019. The time taken for observation was divided into 4 parts: Morning, Afternoon, Evening, and Night. Performed regularly or every day at a time that has been determined by researchers. The researcher’s observation was the distribution of questionnaires to each park visitor, mapping the patterns of visitor activities, and counting park visitors.

3.2 Data Processing Techniques

Data processing techniques are a way to present data from the results of observational activities conducted by researchers to provide some results that can be presented properly in this Research Thesis. The steps taken by researchers for data processing are as follows:

3.2.1 Data Reduction

Data reduction is the first component in the analysis which is the process of selection, focusing, simplification, and abstraction of all types of information written in full in the field notes. The data obtained at the time of onsite observation is very numerous and various, so it needs to be reduced, which is to summarize, choose things that are important, focus on things that are important, look for themes and patterns and discard unnecessary. Data reduction has been carried out since the researcher took the decision, selected cases, compiled research questions that emphasized a particular focus on the conceptual framework and also the time to determine how data collection will be used because data collection techniques depend on the type of data to be used, this type of data has been directed and determined by various questions contained in the research problem statement. Reduced data will provide a clear picture and make it easier for researchers to do further data collection, and look for it if needed.

3.2.2 Data Presentation

The next step after data reduction is data presentation. Presentation of data can be done in the form of brief descriptions, drawings, diagrams, and relationships between categories. This data presentation is arranged based on the points contained in the reduction of the presentation data. Presentation of data in this study will be presented using sentences and research language, which is a logical and systematic sentence, so that it is easy to read and understand.

3.2.3 Conclusion

Conclusions are carried out until the time the data collection process ends. Conclusions in qualitative research may be able to answer the problem formulation that was formulated at the beginning, but maybe not, because the problems and the formulation of problems in qualitative research are still temporary and will develop after the research is at the research location. The conclusion in this study is expected to be a new finding that has never before existed. The findings can be in the form of a description or description of an object that was previously still unclear, so that after examination, it becomes clear. Moreover, provide some results and recommendations related to the situation at the research location

3.3 Case Study Identification

That researchers identify case studies based on existing conditions both in terms of the availability of supporting facilities, user activities, and the character of the research object.

3.4 Behavior Mapping Methodology

Collect data about open space utilization patterns. The approach taken in this study uses Behavior mapping. Behavioral mapping is described in the form of sketches or diagrams about areas where humans carry out various activities with the aim of describing the behavior on the map and

identifying the types and frequencies of the actors and showing the relationship between behavior and specific forms of design.

Some information needed in this method can be recorded, including:

- The number of users of outside space.
- The pattern of grouping users in outer space.
- Duration of activity.
- Type of activity.
- Characteristics of users of outside space: gender, lead, and so on.

Appropriate data recording is needed to capture behavioral information very dynamic. Some of the tools needed include:

- Digital cameras, useful for recording static images of observation situations. The disadvantage of using this tool is that it cannot record long (duration) the user carries out an activity.

- Video camera, useful for recording dynamic images where recording is old (duration) activities can also be done. The results of this recording need to be compiled using tables or behavior folder.

To simplify data recording and compilation, observation segments need to be set first. Generally, the tools are simple and immediate, and the studies can be conducted on a very modest budget. Most studies only require a pen, a piece of paper, and perhaps a counter and stopwatch. The same tools can be used for large or small studies. In order to compare the results within a study or compare with later studies in the same or some other place, it is essential to make precise and comparable registrations. The following are the methods used (Gehl & Svarre, 2013).

a) Counting. Counting is a widely used tool in public life studies. In principle, everything can be counted, which provides numbers for making comparisons before and after, between different geographic areas or over time.



Figure 3. Counting

b) Mapping, Activities, people, places for staying and much more can be plotted in, that is, drawn as symbols on a plan of an area being studied to mark the number and type of activities and where they take place. This is also called behavioral mapping.

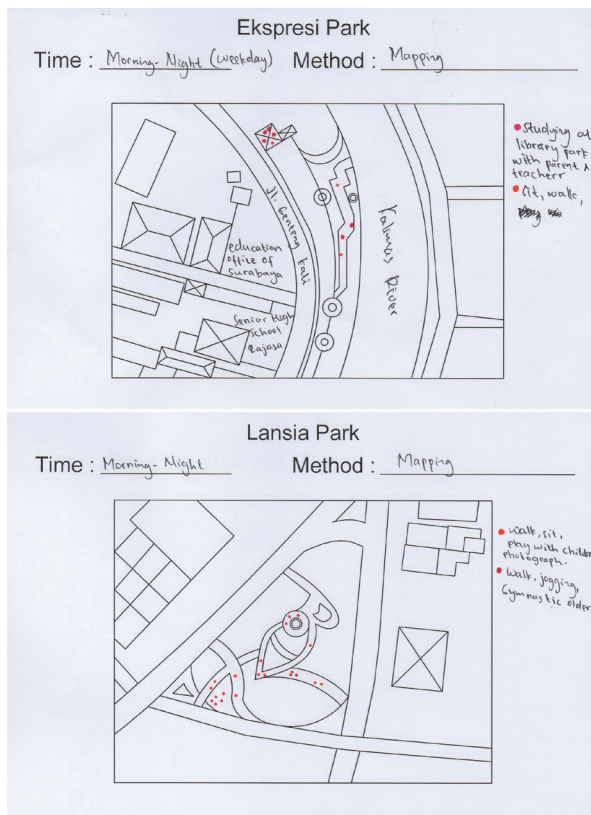


Figure 4. Mapping

c) Photographing, Photographing is an essential part of public life studies to document situations where urban life and form either interact or fail to interact after initiatives have been taken.



Figure 5. Photographing

d) Tracing, looks at the movement of one's activities from one place to another and pulls lines according to one's movements and shifts at the research location.

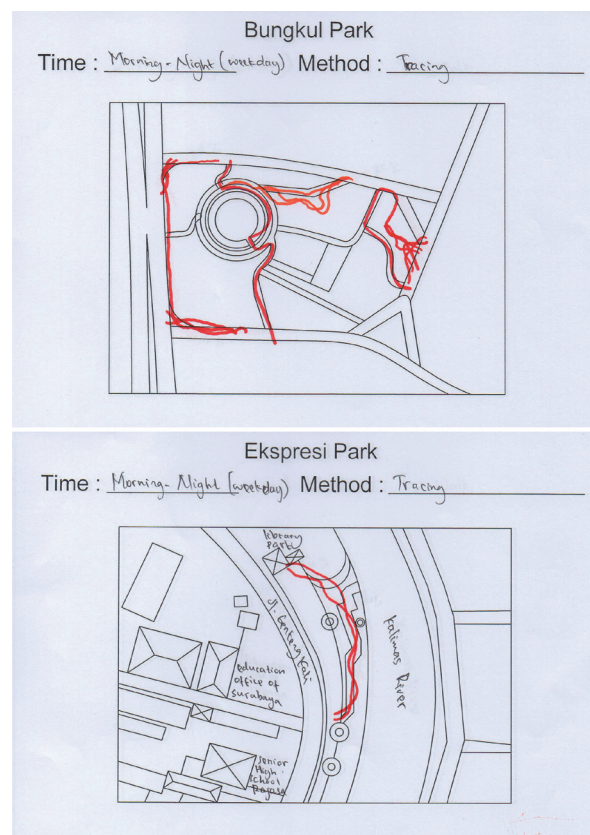


Figure 6. Tracing

All the methodologies based on (Jan Gehl & Svarre, 2013) used because of the need to know the quality and response of city park users. The following methodology includes the need for researchers to conduct Behavior Mapping, including researchers will count the number of visitors every day from morning to night to find out the public response rate of the number of visitors using the Counting technique. (1) Where the Counting Technique of the researcher conducts a survey and calculates the number of

visitors in several locations of city parks in the Central Surabaya carried out every day in some time morning, afternoon, evening and night. (2) Then the researchers conducted a search by doing mapping techniques that function to find visitors often doing activities in several facilities in the park and also knowing the activities of the visitor groups. After the Mapping technique was carried out, researchers continued to record visitor points aimed at knowing the types of activities every day, the level of visitor activity with diagrams taken from calculations, types of visitor age groups, types of community activities, and knowledge of park activities every day. (3) The process of mapping and counting techniques is also supported by Photographic techniques to obtain evidence in the form of photos visitor activities at City Park.

3.5 City Parks of Surabaya

The city of Surabaya has many city parks, which are scattered in every corner of the city. This city park has a variety of functions. One of them functions as the lungs of the city. Surabaya City Park consists of a garden view and an active park. Taman view, a city park that only displays the beauty of ornamental

plants. Serves as the lungs of the city. While what we mean by an active park, is a city park where visitors can do various activities in it. Here are the parks of the active city:

a) East of Surabaya Park : Mundu Park, Teratai Park, Paliatif Park, Lansia Park, Sulawesi Park, Karimun Jawa Park, Prestasi Park, Surya Park, Flora Bratang Park, Wonorejo Park, Kunang-kunang Park.

b) South of Surabaya Park : Ronggolawe Park, Pelangi Park (Welcoming Park), Wira Surya Agung Park, Harmoni Park, Jagir Park, Jangkar Park.

c) North of Surabaya Park : Jayengrono Park, Krembangan Park, Kalongan Park, Barunawati Park, Tanjung Sadari Park, Petekan Park, Bulak Banteng Park, Nyamuk Park

d) West of Surabaya Park : Pakal Park, Undaan Kulon Park, Kayoon Park

e) Central of Surabaya Park : Bungkul Park, Keputran Park, Indonesia-Korea Park, Apsari Park, Ekspresi Park, Police Struggle Monument Park, Skate & BMX Park, Government of Surabaya Park, Monument of Bambu Runcing Park, Lansia Park, Persahabatan Park, Balai Pemuda Park, Surabaya Zoo

Table 1. Central Park of Surabaya

No.	Park	Activity										
		Jogging Track	Central Food	Wifi Area	Green Park	Community Park	Toilet	Sit, Talk, and Meet with Friend	Monument	Recreation	Religious Park	Playground
1	Bungkul Park	*	*	*	*	*	*	*		*	*	*
2	Keputran Park				*			*				*
3	Indo-Korea Park				*			*	*			
4	Apsari Park				*	*		*	*			*
5	Ekspresi Park	*		*	*	*	*	*		*		*
6	Police Monument Park				*				*			
7	Skate & BMX Park			*	*	*	*	*				*
8	Government of Surabaya			*	*			*				*
9	Monument Bambu Runcing				*	*			*	*		
10	Lansia Park	*		*	*	*		*		*		*
11	Balai Pemuda	*	*	*				*				
12	Persahabatan Park	*		*	*	*	*	*	*	*		*
13	Surabaya Zoo	*	*	*	*		*	*	*	*		*

From table 1, explained 13 city parks in the Center of Surabaya have different character activities ranging from jogging activities, visiting the food court, Wi-Fi area, green park, community park, toilet, sit, walk, meet-up with friend, recreation monument, Religious Park, and playground. In some of these activities, it can be concluded that being able to meet the needs of this study is seen in the number of visitors and the different types of activities in that. So that the conclusion was chosen that the criteria have active city parks, which have facilities for the community because of these facilities have many different activities, attract the number of visitors, the length of time visitors stay, group activities (social), and various age groups are more varied. The active park is shown in the table colored 'green', drawn by a table with the type of Community Park.

In the following table it can be concluded that the following research focus consisted of 3 city parks among others; Ekspresi Park (EP), Lansia Park (LP), and Bungkul Park (BP). In conclusion, the following 3 city parks have various facilities and types of activities, it is expected that researchers can determine differences and comparisons to achieve Good Public Space that can be applied and become a benchmark for designing urban parks in several major cities. The determination of Good Public Space is done employing field observations using the data collection methodology, behavior mapping, and value determination using the Good Public Space Index (GPSI).

3.6 Study Area

The results of the study in the 3 city parks, among others; Ekspresi Park (EP), Lansia Park (LP), and Bungkul Park (BP). The following criteria for choosing a park are based on the type and characteristics of an active park with a variety of parks in Central Surabaya. The park has a quality garden in terms of design, the active response of the community to use the park has activities, has adequate facilities to carry out activities, and covers

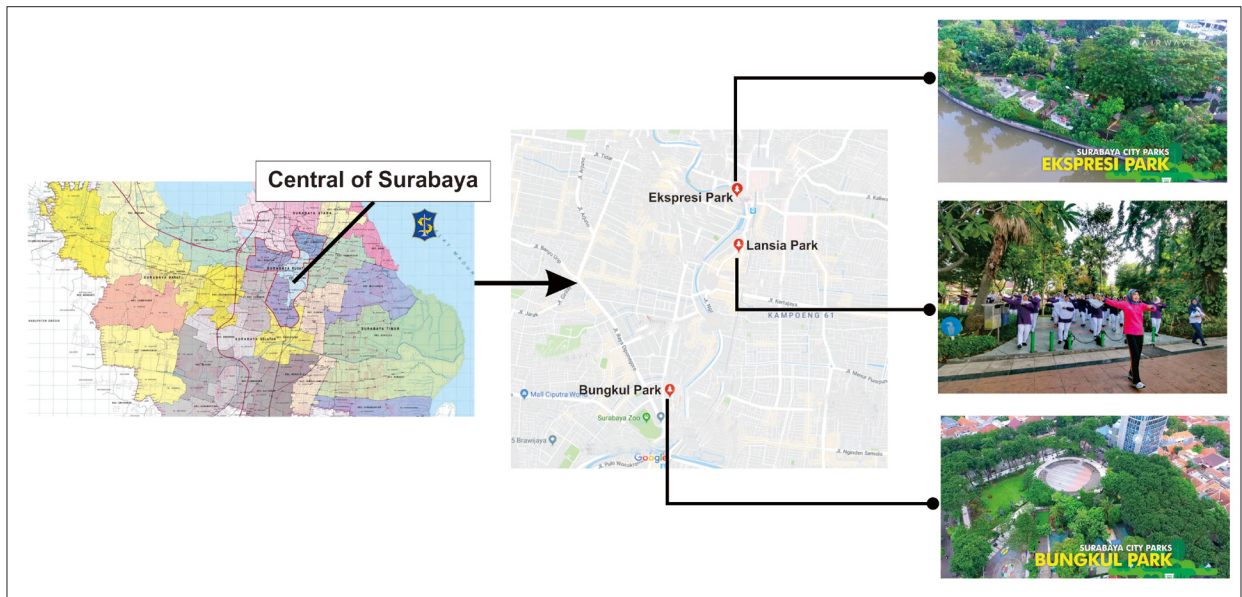
a variety of users and activities. From the following criteria, several parks were selected to conduct this research based on Good Public Space from the general public response.

From the several city parks in Surabaya Center, it was concluded that there were 3 city parks to study, the park was chosen because it had quite a number of quality city parks both in terms of park facility, position of the community area, diverse activities, and special features. In the following park. There are three main guidelines in assessing public space according to (Stephen Carr, Mark Francis, Leanne G. Rivlin & Andrew M. Stone, 1992) that is, public space should be responsive, democratic, and meaningful. And have some Good Public Space criteria according to (Barger, 1982) The following criteria are found in 3 city parks, among others:

1. Ekspresi Park is good in terms of the location of the park adjacent to educational facilities, public facilities, and Government offices, has a library, children's playground facilities and is friendly to children, close to urban roads, and has a distinctive garden design by displaying used items for the park. Representatives of city parks located at the top and Central Business District.

2. Lansia Park is good in terms of has a special characteristic of elderly visitors, with facilities that can support the elderly to exercise and be friendly to the whole community, have child-friendly play facilities, and representatives from city parks located in residential area. More precisely located in the middle part of Central Surabaya.

3. Bungkul Park is good in terms of the following parks receive awards several city parks in the center of Surabaya City received the "Asian Townscape Award 2013" award from the United Nations as the best park in Asia because of its very complete and integrated facilities, namely the economic area (PKL center), green open area, park, disability area, free internet (Wi-Fi), and good green space settings (Ir. Antiek Sugiharti, 2016). The following parks have complete facilities and have



Source: Googlemap, 2020

Figure 7. Study area, Central Park Surabaya

various types of activities, various types of age groups, and have a level of socialization that is directly formed in the Bungkul Park. Located in the community residential area, offices, several retail facilities, and the Surabaya monument center. Park representatives in the southern part of Central Surabaya.

3.7 The Relationship between Land Use and Distance to the Park

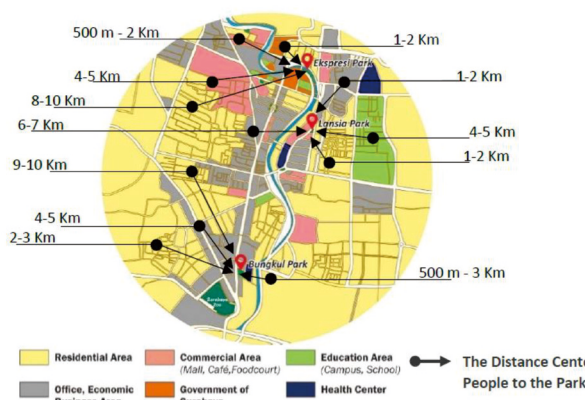


Figure 8. Land Use Mapping in the Central of Surabaya

On figure 8, is a land use in about 3 city parks in Central Surabaya. The location of the city park is in the Central Business District (CBD) which is the largest business activity center in Surabaya, especially in East Java. The location supports to bring in the number of people doing activities, while the activities that are very often done are business activities, meeting with friends, working in the office, playing, and sports or just enjoying the city crowd. In the picture above there are 3 city parks that have different characteristics and even locations, including those in the northern part of the map there are Ekspresi Park, in the middle there are Lansia Park, and in the southern part of the map there are Bungkul Park.

Starting from the following land use explanation can be seen on the cream color map is the Residential Area, the area is a community residence in Central Surabaya that can be seen very dense; pink is a commercial area which means a shopping center, café, hotel, and food court. The location is very much visited by the community, one of which is a shopping center that is never empty and the café is just enjoyed for Wi-Fi and even meet with friends. And the land use is close to Ekspresi Park distance 4-5 kilometers; for the color green is the Education Area which

consists of Primary Schools, Junior High Schools, High Schools, to Universities. The location is closer to Lansia Park distance 5-6 kilometers; the grey color is a Business Center consisting of offices and working space. These land uses have an effect on business activities in the city of Surabaya, and some of the workers also come from outside the city of Surabaya. The location is very close to the area around Bungkul Park distance 500 meter-3 kilometers; the orange color is the Government of Surabaya which consists of the Surabaya City Government and East Java Government offices. The area has support for city parks when the community has a need for the Government bureau so that many come and pass through the city park area; and the last is one of the most important facilities, namely in blue color is a Health Area facility, including Hospital, pharmacy. The location is close to Lansia Park distance around 4-5 kilometers.

3.8 Framework of the Methodology

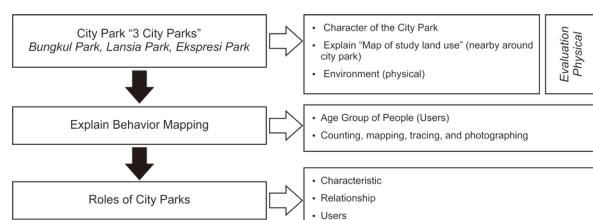


Figure 9. Framework of the Methodology

4. Results

4.1 The Result Counting Users of Parks

Based on A Friendly City Park for All Ages is a dream that can be realized as a good City Image. The needs and interests of users ranging from children (6-15 year), young people (16-25 year), adults (26-45 year) and elderly people (46-65 year) are often complement each other in carrying out individual and social activities in city parks.

4.1.1 Ekspresi Park

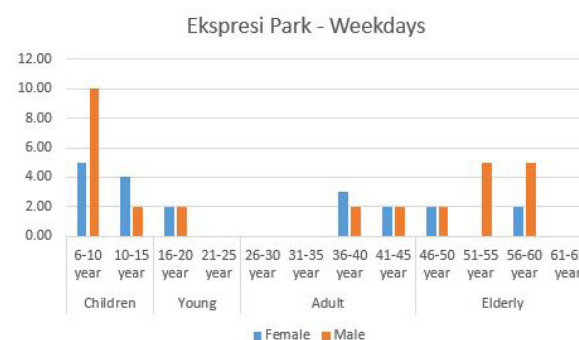


Figure 10. Ekspresi Park - Weekdays

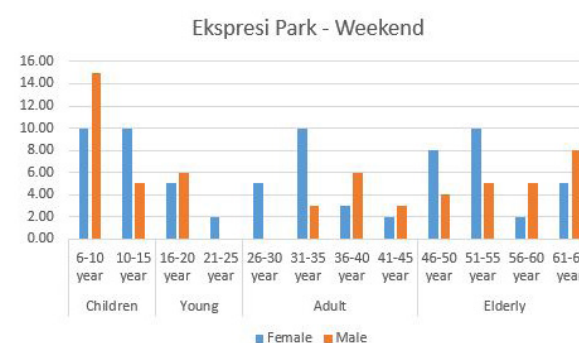


Figure 11. Ekspresi Park - Weekend

Figure 10 and figure 11, is the calculation of users on weekdays with data on female has 20 people and male 30 people with the most visits in the Children age group of 6-15 years with a total of 21 people. The increasing number of Ekspresi Park users on holidays. Seen from diagram 2, has 72 female users and 60 male users. This is also due to holidays in the age group with users ranging from children, young, adult, and elderly. At 06.00 pm the Park is closed, it is a rule set by the Surabaya City Government because the location of the park is feared to be abused by visitors such as going out at night. So that the regulation is set to maintain the safety for the other people of Surabaya City.

On the comparison of the two diagrams, on weekend has several varied users of all ages. And the most visible is at the age of 21-35 years started visiting on weekend, because on weekdays these users have other activities, namely study and work. Has very significant user at the age of children because the park has library facilities for children,

and at the age group of adults and the elderly they mostly deliver children to come to the Library and accompany play while enjoying the fresh air and even sports.

4.1.2 Lansia Park

Based on figure 12 and figure 13, has 20 female visitors and 30 male visitors because on weekdays it is an active work day that only a few people visit, even in the afternoon until the evening when researchers observe there are only about 20-30 people for women and men. However, the number of visits increases when weekends can be seen in diagram 4 which has 50 female visitors and 54 male visitors. This number is quite good with an increase of about 50% of workdays, this is because people visit more when Saturday afternoon at 4:00 p.m. to Sunday morning at 10:30 a.m.

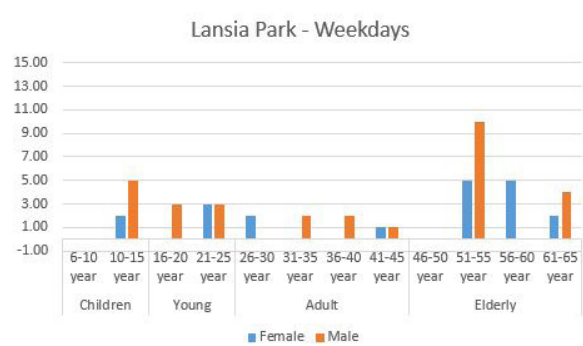


Figure 12. Lansia Park - Weekdays

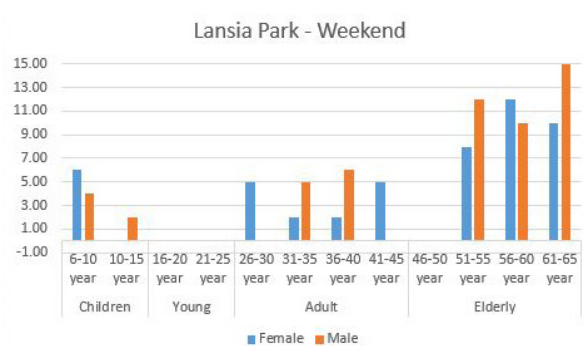


Figure 13. Lansia - Weekend

Diagram 4 has an increase in the number of users which is greatly increased in Elderly. The diagram is on holidays, so the park has an increasing number of users. On Sunday Morning, Lansia Park has visitors from the age of 51-65 years to come to

exercise and also the Government of Surabaya often holds event for a joint gymnastics agenda specifically for the elderly. This park provides special benefits for the elderly age group because it has facilities that support the activities of elderly such as gymnastics areas, pathways reflection, and also has a trees so shade.

4.1.3 Bungkul Park

In figure 14, it is a calculation table of Bungkul Park users on weekdays that has a very large number of visitors compared to Lansia Park and Ekspresi Park because this park is the most favorite park in the city of Surabaya. Bungkul Park has various city park facilities that support the community to carry out activities. On weekdays from 08.00 am - 2.00 pm has a total number of visitors up to 235 people because it has a motorized vehicle administration activity provided by the Surabaya City Police. The number of visitors increased dramatically on weekends because this park when Saturday from 04.00 pm - 12.00 pm has various activities such as community gatherings, events, playing with children, playing skateboarding & BMX, and various other activities. On Sunday morning, Bungkul Park has a Car Free Day (CFD) event which is a kind of morning sports together even going on well into the night. Therefore, Bungkul Park seen in diagram 6 has a number of users from various age groups consisting of 340 females and 365 males even the total increase when having events at night such as music events, gathering events, gymnastics events and various supporting events the other.

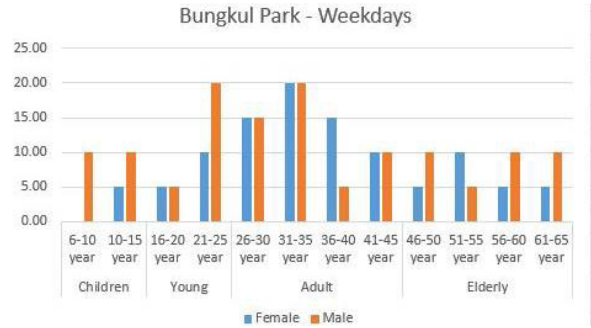


Figure 14. Bungkul Park - Weekdays

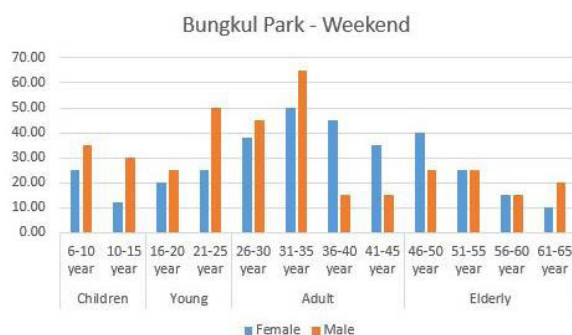


Figure 15. Bungkul Park - Weekend

Figure 15, has the highest value of visitors on the weekend. The total of visitors in Bungkul Park on weekend until 700 peoples, the total in this study is the highest value. Bungkul Park is a very popular city park in Surabaya and even the following park has received various National and International awards. The available facilities support a variety of activities including food court facilities, Wi-Fi area, pathways reflection, BMX & Skate area, plaza area, gathering area, toilets, friendly seating, playgrounds and various types of shade plants to ornamental plants. The types of age groups of users in this park are very varied. Seen from the data diagram above, ranging from children to elderly park Bungkul favored by all groups. Supporting things that make the number of visitors is to have facilities that are very supportive for users to do their activities. So that this park becomes excellent in Surabaya and even out of town, even this park can also be said to be a Park Friendly to visitors. In terms of health, safety, cleanliness to the arrangement of the park which gives a positive impression on the people and the city of Surabaya.

4.2 Mapping Result

4.2.1 Ekspresi Park

In the picture below is the result of taking pictures at the time of observation, these activities are found on the morning of weekdays and weekends. Ekspresi Park has facilities including a library, alphabet bench, playground, parking area, and reflection path. This park has characteristics by giving knowledge to users, especially to children, this park is friendly for

the development of children's knowledge by providing striking colors, alphabet-shaped park chairs, and there is a library.



Figure 16. Library (A)



Figure 17. Alphabet Bench (B)



Figure 18. Playground (D)



Figure 19. Shape and bench (E)

On figure 20, the result of mapping methodology techniques in the form of activities and behavior patterns of park users. Ekspresi Park user behavior has dominant activities in the form of reading books, sitting, walking around, standing, and just watching the park. The observation every days on weekdays and weekend, and the time start from 08.00 am – 09.00 pm.

The pattern of activity in the Ekspresi Park is generally influenced by the physical characteristics of the park which directly shape the pattern of activities on users and types of users. The characteristics of this park are very strong, namely education for children so that users who come are children who come to visit to enjoy the facilities available, including alphabet bench, playground, and library.

The activity pattern in figure 20, shows that the intensity of the activity is mostly done in the library and playground. The intensity of activities on weekdays, in general, the intensity is not too crowded because the children's park users are still at school hours, and this park has regulations when visiting during school hours around 08.00 am - 12.00 pm it is not permissible to visit the Expression park. Allowed to visit if children have companions such as teachers, parents or have certain activities outside school hours and also the park closes at 06.00 pm. Whereas on

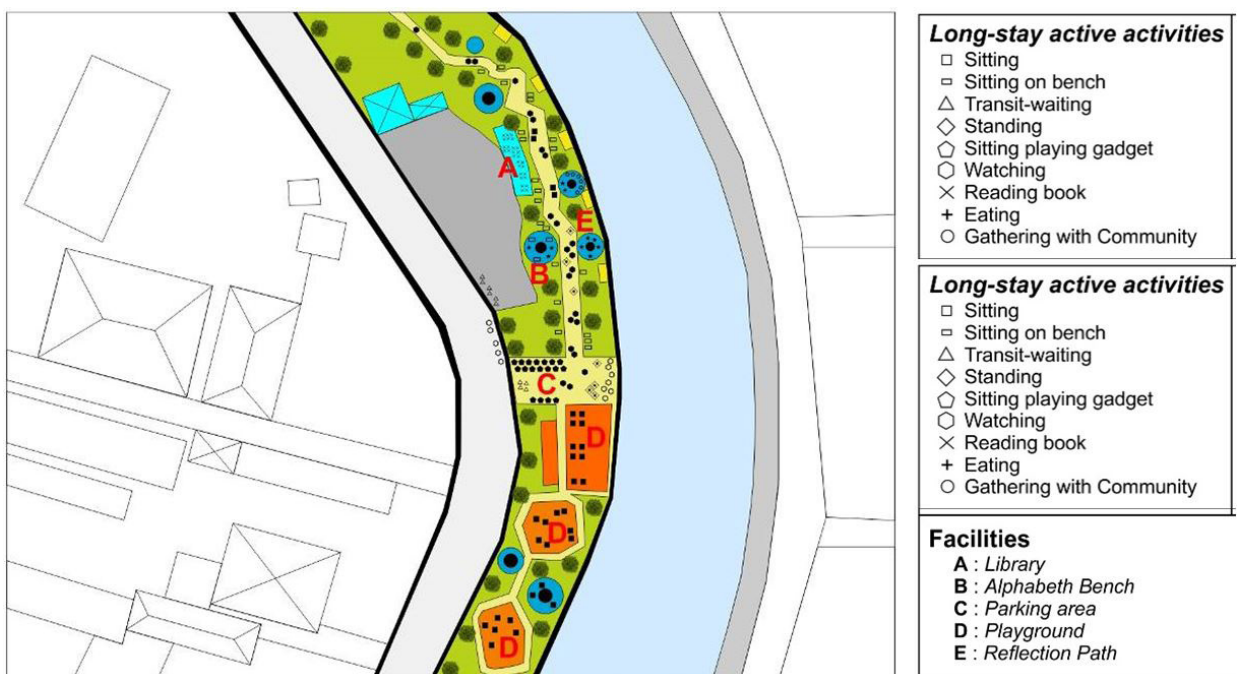


Figure 20. Mapping Ekspresi Park

holiday the intensity is quite crowded can be seen in figure 16 of Ekspresi Park mapping. The difference in intensity in some zones such as playgrounds, reflection areas, libraries, alphabet bench, and other supporting facilities. This has a difference between workdays and holidays. Ekspresi Park has a special characteristic that is an educational park with several facilities owned, so that the average visitor is dominated by children.

4.2.2 Lansia Park

In figures 21-26, are photos taken while observations were made on the weekday's and weekend and start 07.00 am until night on 10.00 pm. Lansia Park has facilities including shade of trees, reflection pathways, gymnastic areas, water fountains, and healthy areas. This park has characteristics with the presence of users who are dominated by the elderly. With the existence of these characteristics, this park has supporting facilities that are able to accommodate the activities of its users. Below are the results of photography created by having special properties in it.

In figure 27, the result of mapping methodology techniques in the form of activities and behavior patterns of park users in the Lansia Park. This observation records various kinds of activities, user age groups, duration of stay and some distribution of user activities. This methodology is to determine the intensity of the activities carried out by users in the Lansia Park.

The pattern of activities in the Lansia Park is generally influenced by the physical characteristics of the park which directly shapes the pattern of activities on users and types of users. The characteristics of this park are very strong which deliberately formed for users of elderly people. Supporting facilities that give the park strong characteristics include a gymnastic area, reflection path, jogging track and shady plant supporters to provide fresh air to the elderly and surrounding gardens. This park is one of the parks designated specifically for the elderly, but also has children and adult users also enjoy the facilities available at Lansia Park.



Figure 21. Gymnastic area (A)

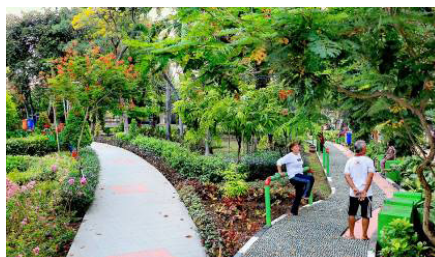


Figure 22. Reflection pathways (B)



Figure 23. Shade of trees (C)



Figure 24. Fountain (D)



Figure 25. Healthy Service from Government of Surabaya (A)



Figure 26. Lansia Park in the night (E)

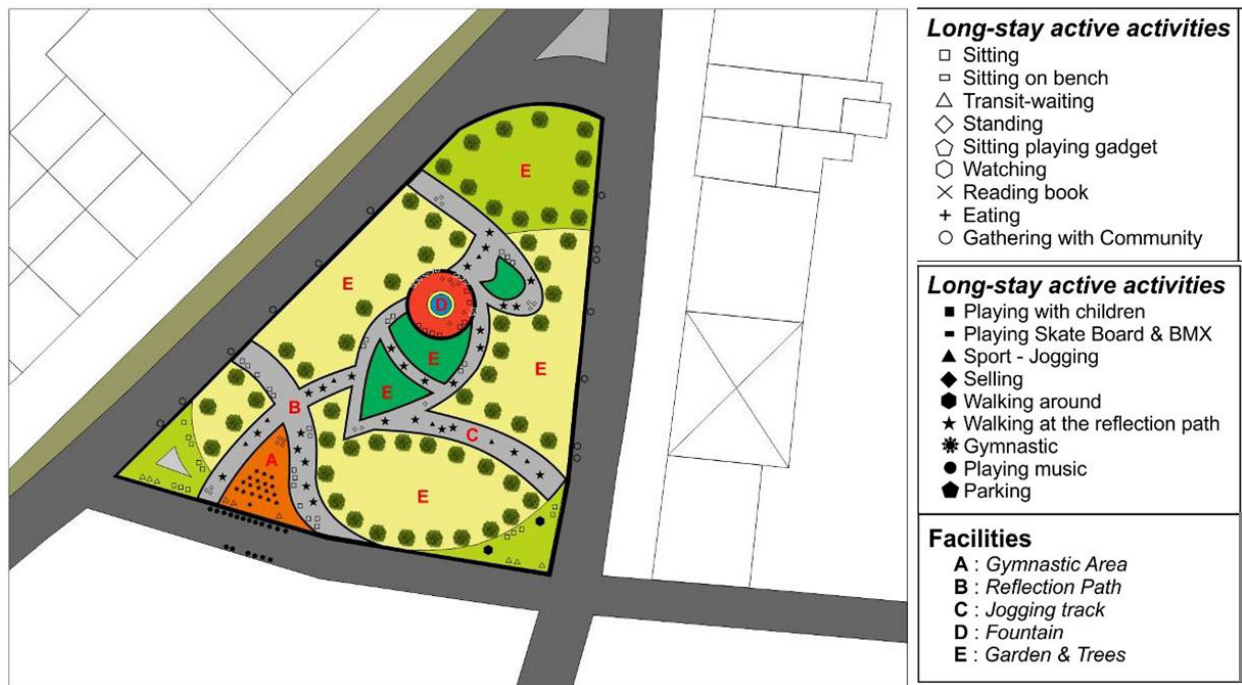


Figure 27. Mapping Lansia Park

The activity pattern in figure 23, shows that the intensity of activity is mostly done in the gymnastic area, reflection path, and jogging track. The intensity of activity in Lansia Park has a difference on weekdays and holidays, observations made on holidays there are only a few park users only about 10 people but on the afternoon on weekdays have an increase in the intensity of users of about 20 people. While having an increase in park users is more crowded on holidays starting at 07.00 am, elderly users arrive to do joint exercises which are held privately by the elderly group and at noon at 11.00 am the Surabaya government often holds health tests for elderly user groups. This park is very useful for elderly users because its facilities provide health and activities are often held specifically for the elderly. Lansia Park has a special characteristic that is an elderly park with several facilities owned, so that the average visitor is dominated by elderly people.

4.2.3 Bungkul Park

In figures 28 – 39, are photos taken while observations were made on the weekdays and weekend and start at 07.00 am until night on 10:00 pm, the same as observations made in the 2 parks

above. Bungkul Park has very complete facilities for various users who do activities, and is a very favorite park for people around Surabaya and outside Surabaya. The park has also won various awards from National to International because the park is user friendly, the park is clean and various award categories are won. Bungkul Park facilities include shade of trees, reflection pathways, water fountains, plaza areas, playgrounds, BMX skateboard tracks, food courts, toilets, religious areas, and parking areas. The following is a methodology for taking photos to find out the activities that take place in Bungkul Park.

On figure 40, the result of mapping methodology techniques in the form of activities and behavior patterns of park users in the Bungkul Park. Observations made to determine the type of activity, variations in user age, and some of the spread of user activity. This methodology is to determine the intensity of the activities carried out by users in the Bungkul Park.

The activity patterns in each zone differ according to the shape and function of the space. In the plaza area, all activities are centered in the central area, with the intensity of the most crowded or busiest



Figure 28. Administration activity from Police (D)



Figure 29. Reflection Path (D)



Figure 30. Skate BMX track (C)



Figure 31. Ways and Shade (D)



Figure 32. Playground (B)



Figure 33. Food Court (E)



Figure 34. Ways near Plaza (A)



Figure 35. Playground (B)



Figure 36. Wi-Fi Area (B)



Figure 37. Plaza area (A)



Figure 38. Watch and photo



Figure 39. Parking area (G)



Figure 40. Mapping Bungkul Park

Long-stay active activities

- Sitting
- ▢ Sitting on bench
- △ Transit-waiting
- ◇ Standing
- ◇ Sitting playing gadget
- Watching
- × Reading book
- + Eating
- Gathering with Community

Long-stay active activities

- Playing with children
- Playing Skate Board & BMX
- ▲ Sport - Jogging
- ◆ Selling
- Walking around
- ★ Walking at the reflection path
- ✱ Gymnastic
- Playing music
- Parking

Facilities

- A : Area Plaza
- B : Playground
- C : Skateboard - BMX track
- D : Grass area
- E : Food Court
- F : Religious Area
- G : Parking Area

sitting activities among other zones due to the stands which are the main attraction when visiting Bungkul Park, which accommodates the most sitting activities. In the grass area is a relatively quiet area due to not providing enough park benches that become one of the activity generators in each zone. Besides this area is the most distant from some crowd points and the direction of the majority of visitors who come from the east. Therefore, the Taman Bungkul road corridor is the most populous or has more activity intensity compared to other road corridors. In figure 36 it can be seen that the Taman Bungkul public space activity system (pedestrian, seller food court and parking activity) is most spread around Food court which includes the Taman Bungkul road. So that on these roads at peak times visitors experience spatial irregularities between the circulation space and vehicle parking, pedestrian circulation and the surrounding selling area.

The pattern of activity in Bungkul Park is generally influenced by the shape and relationship of space as well as the forming of space and the attributes of space in it. The intensity of activity on weekdays is generally of moderate-intensity or not too crowded, it's just that the people of Surabaya want to do the motor vehicle tax at 8:00 am - 1:00 pm. Whereas on holidays the intensity is very high, due to having car-free day events which are held on Sunday Morning and Saturday nights also having community gathering activities. The difference in intensity in several large zones such as the plaza area, playground, BMX track skateboard area, grass

area, and food court cause the pattern of activities to be different between workdays and holidays. Bungkul Park has a special characteristic that is a community park with some complete facilities, so that the average visitor is dominated by community visitors.

5. Discussion

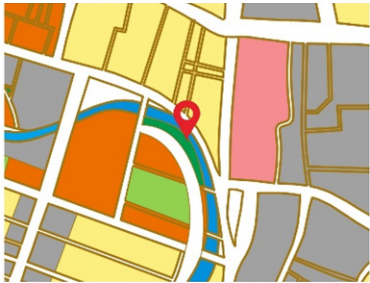


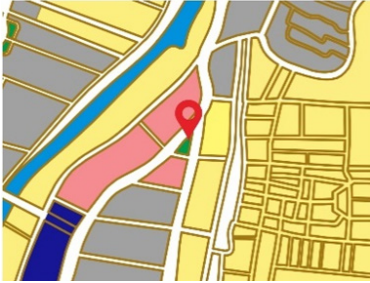


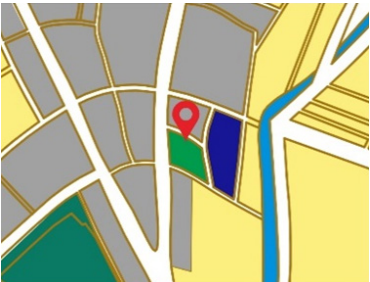
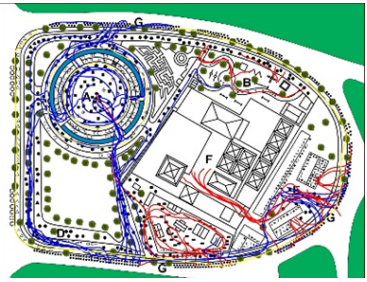
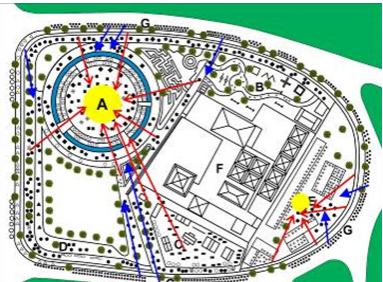
This part of the discussion is the result of the behavior mapping methodology based on the opinions of by using mapping that is done in the morning until the evening supported by taking pictures, namely methodology photography. The behavior mapping used is centered mapping. Centralized mapping places are used to find out how humans use, use or accommodate their behavior at certain times and places. This observation is to determine the movement of visitors and the various spreads of user activity in 3 city parks, including Mapping, Photographing and Tracing. (Table 2)

The results of this methodology are summarized in a table consisting of external circulation, internal circulation, and interaction space. This table is to find out the relationship between outdoor space and indoor space. The relationship between outdoor circulation (land use) with the park using tracing and mapping techniques that produce patterns of park user activities. The conclusion is based on several analyzes and observations made the results to identify the function of the park, the pattern of activities, and the accessibility of the park when viewed from the shape and external situation of the park.

Table 2. Evaluating the Quality of Public Spaces (PPS, 2012)

Park	Sociability		Uses & Activities		Access & Linkages		Comfort & Image		
	Plaza area	Water fountain	Food Court	Community area	Walk area	Signage	Rest room	Bench	Lighting
Ekspresi Park				●	●	●		●	●
Lansia Park		●		●	●	●		●	●
Bungkul Park	●	●	●	●	●	●	●	●	●

Table 3. The relationship between outside and inside the park

Park	External Circulation (Land Use)	Internal Circulation (Tracing)	Interaction Space (Center of activities)
Ekspresi Park	 <p>Ekspresi Park is an elongated park that is limited by 1 road and river. Around the park there are residential areas, Government office, office & economic business area, and education (school).</p>	 <p>The pattern in the majority park is more towards the north of the park, because in that section there is a library which is the main goal and the second goal is the reflection path. The southern part (playground) is still relatively low.</p>	 <p>It has 3 centers of activity including in the middle of the park (looking towards the river), the south towards the playground, and the highest is the North center which has reflection path and library facilities.</p>
Lansia Park	 <p>Lansia Park located in the middle of an urban street, which is surrounded by land use residential area, commercial area, office, and health center</p>	 <p>The pattern that is often passed and the main purpose of this park is a fountain and gymnastics area.</p>	 <p>This park has 2 centers of activity which include gymnastic areas and fountains as additional destinations. The path to the fountain is a reflection path.</p>
Bungkul Park	 <p>The location of this park is right at the access to the center of Surabaya and easy access. Land use around the park has a residential area, health center, Surabaya Zoo (recreation), and office (business area)</p>	 <p>The pattern of activities in Bungkul park activity includes a radial pattern which the entrance of the park can be accessed from several doors. And makes this park seem easily accessible to users.</p>	 <p>This park has 2 centers of activity that are attractive. Among the attractions of this park are the Plaza area that serves as the center of visitor activity, and the second point is the Food Court which serves as a culinary destination.</p>

Information:

- Residential Area
- Commercial Area (Mall, Café, Foodcourt)
- Education Area (Campus, School)
- Surabaya Zoo
- Office, Economic Business Area
- Government of Surabaya
- Health Center
- City Park
- Tracing activity
- Activity
- Entrance Activity
- Point of Activity

From the results of table 3, shows that the pattern of land use around the park affects the quality and characteristics of the city park. The location that is close to residential areas has a very big influence on the number of visitors. One that is very influential on the number of visits is easy accessibility that must be easily accessible by the community. Bungkul Park is a park that is easily accessible by the community because it has direct access to the city center. The role of a city park is a place that must be physically and visually accessible to the general public so that the physical element plays an important role in shaping the patterns of activity and the use of its space (Carmona, 2003).

The role of elements to the city park on the pattern of activity not only occurs in the public space itself but also has an influence on the environment around the public space, its relation to the buildings around it (Gehl, 1936). The dominant activity of park users is sitting activity with the most intense intensity

compared to other areas. In this case, it can be concluded that the presence and position of attractive elements and the adequacy of the seats become a generator of activity, which can affect the suitability of the use of existing space. In these 3 city parks which are the center of activities, among others are seating, reflection path, food court, library, and open space (plaza). It should be noted from the several patterns of visitor activity that they have more to stay longer at the facility. In addition, city parks provide a sense of security, comfort, clean, community interaction space, and parks that are more accessible.

6. Conclusion

6.1 Ekspresi Park

The pattern of activities is higher in transitional activities and subsequently in the social activity section by having a large number of visitors for activities in the Library. (Figure 41)

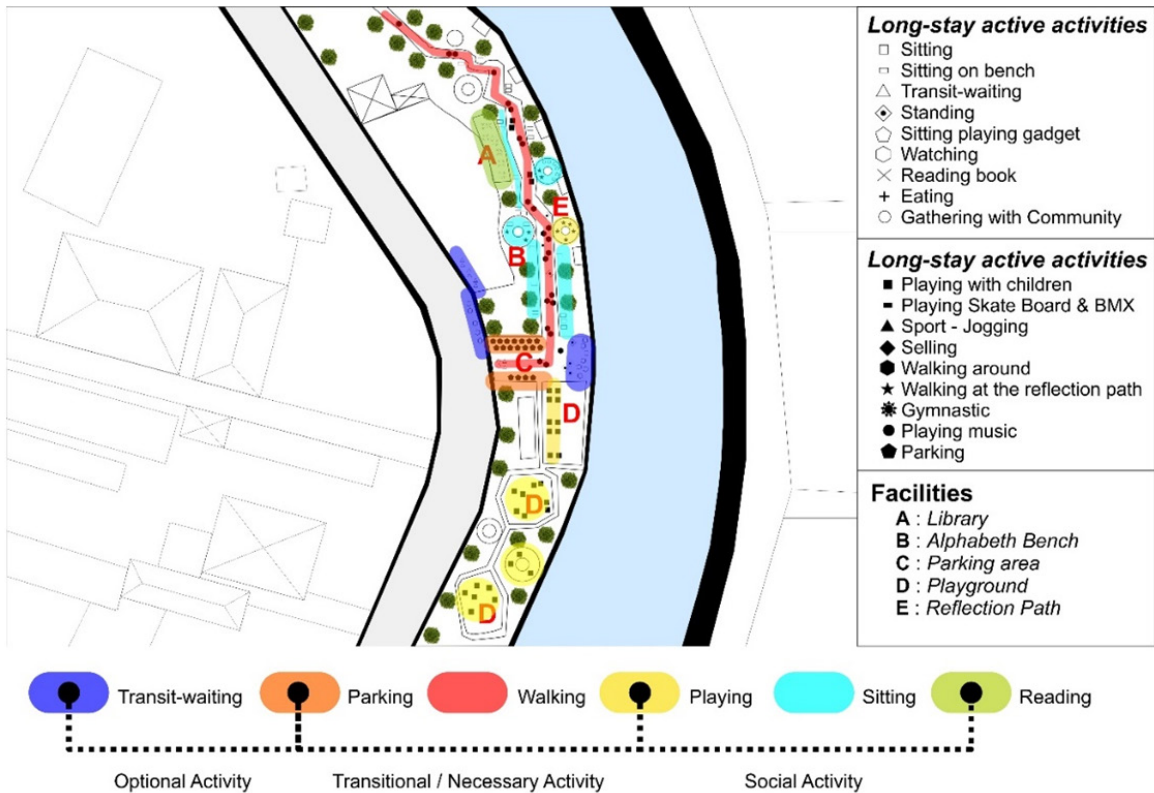


Figure 41. Activity Patterns of Ekspresi Park

- Around Ekspresi Park there are schools, Government offices, and residential areas. This needs to be considered the pattern of visitor arrivals and their desires. To maximize visitors around the park. In addition, it provides attractive signage so that it has an attraction for visitors from around even outside the scope of the park.

- This park has a view attractiveness overlooking the main river Surabaya, this is maximized by the presence of additional facilities such as water tourism. By utilizing the existing nature, this park will become its own attraction.

- Ekspresi Park characters that provide education with library facilities and Alphabets Bench that have attractive colors. This is an added value for visitors. Additional information such as plant explanation, color explanation, or some other type of education is needed.

6.2 Lansia Park

The activity pattern in the Lansia Park has the highest activity in the Social Activity section with Gymnastic activities, sports, walking at the reflection path. And then, the Optional Activity section with transit-waiting activities. It is located suitable for transit activities such as waiting for pickup, to ride a vehicle, and go home from work. (Figure 42)

- Gymnastic Area has a go od appeal, because its location is located on the front shown in Green, this area is the center of visitors' attention. To further optimize the area, it is necessary to schedule regular gymnastic activities or health checks.

- The transit area is very influential on attendance, because the location is located alongside a road. This is maximized by the addition of shuttle facilities and seating to wait to have a higher attraction to visit this park.

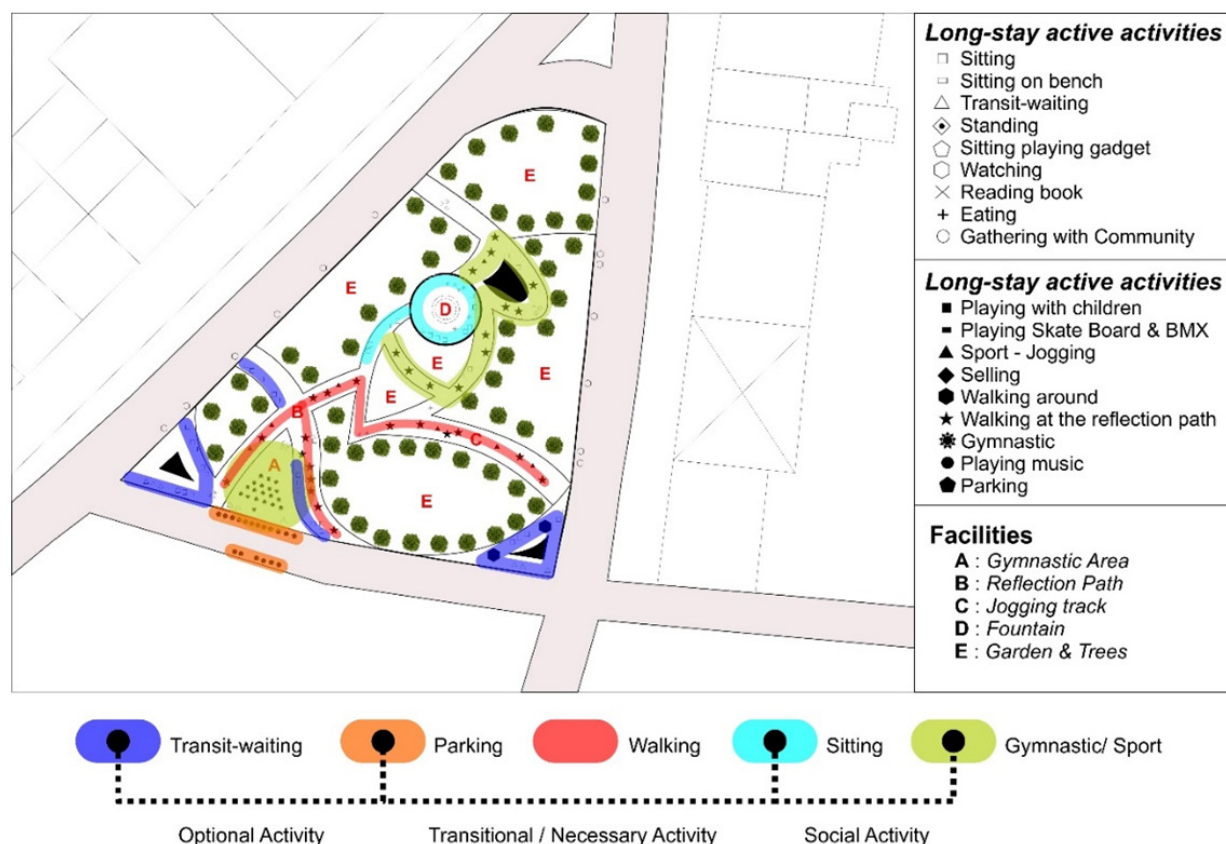


Figure 42. Activity Patterns of Lansia Park

- Settlements around the park have an influence on the number of visits, this is more maximized by holding health activities in accordance with the characteristics of Lansia Park.

- Offices and public facilities also affect attendance, so there is a need for attractive signage or signage.

6.3 Bungkul Park

The activity pattern in the Bungkul Park has the highest activity in the Social Activity section with the Food Court area, selling activity, and the second-highest activity in the Plaza area because the visitors can be sitting, watching a concert, and playing with children.

- The presence and position of attractive elements and the adequacy of seats to be a generator of activities, which can affect the suitability of the use of existing space.

- The plaza area as a seat provider with the most visitor capacity should optimize the open stage and fountain area so that it will return to function as a performance venue or be optimized according to the potential for frequent activities.

- Playground areas should pay attention to pedestrian, parking, and merchant activity systems so that they support the visit to the playground area.

- The skateboard area needs to be improved and structured in terms of position and orientation so that it can be optimally utilized as a means of skateboarding.

- Food Court Area is necessary to optimize the arrangement of tents so that the use of space in it can be maximized, there is no use of space that tends to overlap between the pedestrian circulation area, parking, and sellers, which affects the comfort of these activities.

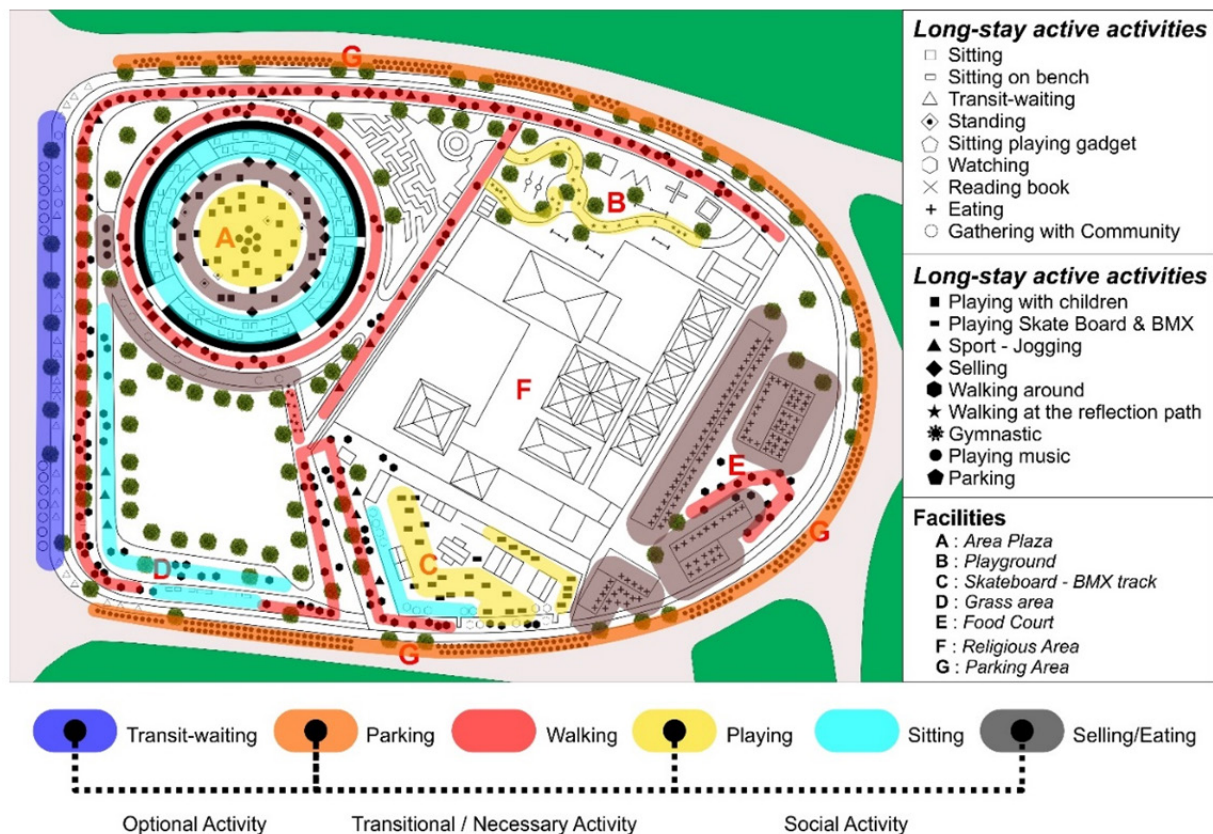


Figure 43. Activity Patterns of Bungkul Park

The method used by using “Behavior Mapping”, this method has previously been explained which the use of map sketches is carried out by researchers directly at the site, using supporting Counting Visitors, and the surrounding location area.

In this aspect, it becomes one in this section which helps to draw a result of the user’s relationship, park location, and outside the park location. This has a relationship with one another, so that it has maximum results in this research process.

The results of this section include the following:

- Being able to know the pattern of visitors’ activities by paying attention to the mapping sketch, the pattern is evidence to find out the parts that are most often used, traversed, and visited by visitors. That researchers are able to look more closely at the characteristics of visitor activity patterns that will be applied to city parks.

- The pattern will be used as a management of city parks so that more leverage on land use.

- From the aspect of the environment is one important thing that must be considered, so as to be able to maximize the park land with the surrounding land. Moreover, will be related to one another. For example: educational parks are well placed at locations that have supporting educational facilities and several other aspects.

- This section has an important role in the utilization of city park facilities, taking into account visitor patterns and number of visitors. Which facilities are very often used by visitors, and it really needs to be developed in the future.

7. Recommendation

From some of the results of the analysis and conclusions in the following thesis research, researchers provide recommendations for relevant parties namely the Surabaya City Government and even the Government in any city as well as the public and visitors of the city parks as those who use and

utilize city parks. In this recommendation has two parts, including the following:

7.1 Recommendations for City Park Improvements

- Conduct more intensive supervision and management in maintaining the condition of city parks so that they are always in conditions that are in accordance with the criteria of Good Public Space.

- Providing space for the wider community to be able to utilize city parks as a means of expressing creativity, for example by giving permission for the community or groups to carry out their activities in city parks.

- Equipping city park facilities and infrastructure with a variety of adequate facilities and needs for city park users such as the addition of toilets, seating, Wi-Fi networks, parking lots, food courts, religious facilities (prayer rooms), and CCTV. This is to improve the function of city parks, to become an attraction, comfort, and safety of city parks.

- More often, the activities carried out in city parks aim to bring out the attraction and interest of the community to visit city parks. This can improve its function as a center of community interaction and communication for the city park.

- Make efforts related to improving the function of city parks as a shade and city lungs such as the addition of vegetation to make urban forests in city parks that aim to be shade and comfort with trees.

- The city government, when designing a city park, needs to research in advance such as paying attention to locations around sites that have their respective functions, conducting interviews, or approaches to the surrounding community. It aims to achieve the function of a city park properly based on the characteristics of “Good Public Space” and achieve according to the needs of city park visitors.

7.2 Recommendation for the Further Research:

- There needs to be awareness and responsibility of the community in utilizing city parks such as caring

for public facilities that are already available in a way that does not damage the facilities and carry out acts of vandalism.

- Raise awareness to maintain the cleanliness of the city park environment by throwing garbage in the space provided, so that fellow city park users can feel comfortable doing activities.

- City communities, in general, are better off if they can take the time to visit, do activities, relax, and even just do transit activities in city parks. So that city parks can provide an effect on social life and support economic activities to social activities carried out in city parks.

- Participate in activities organized by the government, as well as other parties. So that city parks become active and have an effect on developing life.

- In conducting research, suggestions are given to make observations in advance to check the city parks and locations around the park. To better understand the characteristics of a city park.

- Forming a “Research Team” in observation activities, this is to facilitate research and obtain data that is expected by researchers. However, first, there must be a meeting and briefing to explain some of the methods and achievement of the required results.

- If the reader is a student, this research can refer to conducting a research project or design of urban design, site planning, public open space, and city parks.

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