

The development of child-friendly integrated public spaces in settlement areas as an infrastructure of Jakarta

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Abstract

The rapid development in urban areas tends to deny the needs of children as citizens. The availability of public space to interact, play, and socialize is declining with various financial or distance constraints. The child-friendly city concept is ideally a solution to overcome this problem. To support the realization of the child-friendly city concept, the construction of the necessary infrastructure to accommodate the needs of children in urban areas is needed.

This research was conducted with the case study of child-friendly integrated public spaces (RPTRA) in the Kembangan District, West Jakarta. The research used the combination methods of qualitative data from interviews and observations, supported by quantitative data from questionnaires. The finding in this study is that the RPTRA or public spaces such as parks are still mainly used by the residents in dense settlement areas. The availability of facilities, the easy accessibility, and the roles of parents are three important factors affecting the children's visit to RPTRA. With the diverse existing functions, the RPTRA areas are able to accommodate the basic general needs of children well, but the RPTRA cannot grow into a facility that develops in keeping with the development of its users.

Keywords: child-friendly integrated public space, child friendly city, settlement area.



1 Introduction

Jakarta, with an area of 661.52 km² wide in 2015, is inhabited by approximately 2,238,209 children aged 0–17 years of age (Statistics Indonesia, 2015). As citizens of Indonesia, children possess the rights to a decent life in accordance with their needs and interests. The rapid development in Jakarta has an impact on children as citizens. The availability of a play area inside malls and the tendency for parents to take their children to play at malls have made the children visit the mall more frequently than be active in open space. On the other hand, open spaces such as parks which can ideally be used for children's activities are insufficient to facilitate children's activities. There are still numerous parks as public activity space which are not child-friendly especially in case of safety issues and spatial function for children [1]. Public spaces for children are useful to facilitate the activities of children in learning and understanding the surrounding environment [2].

In addressing that issue, the Jakarta Provincial Government seeks to meet the need of facilities for children to do creative and recreational activities such as establishing multifunctional parks in densely populated areas. The development of the multifunctional parks implements the child-friendly concept and is known as Child-Friendly Integrated Public Spaces (RPTRA). The established parks have various functions focusing mainly on the education of children, as well as functioning as a community center for the surrounding community. In addition, the advantage of the RPTRA parks over other parks is that the RPTRA parks are built close to settlements, especially in densely populated areas, so the RPTRA parks can be easily accessed by children as well as by the local residents. The place for the children to do outdoor activities should ideally be around where they live, easily supervised by adults, as well as being accessible for anyone, safe from any interference, and free of charge [3].

The Jakarta Provincial Government seeks to fulfill the need of facilities for children to do creative and recreational activities such as by building multifunctional parks in densely populated areas through the development of the Child-Friendly Integrated Public Spaces (RPTRA) program. The RPTRA is a concept to create a child-friendly city. The RPTRA parks contain a variety of facilities related to the function of fulfilling the basic needs of children and the function of the RPTRA parks as public space. To provide significant benefits for the citizens of the city, the RPTRA parks are built in settlement areas especially in densely populated areas. The diverse functions included within the RPTRA parks and the limited availability of land make the RPTRA's role not optimum. This shows the need for ideal RPTRA criteria, particularly in residential areas.

This study aims to assess and analyze the position of the RPTRA parks in the settlement areas, to evaluate the role and function of the RPTRA parks in residential areas, and to propose the ideal RPTRA criteria in residential areas. This research is expected to provide academic benefits for academicians and researchers in the context of connecting science and practical benefits for professionals and practitioners in developing a social infrastructure to support the child-friendly city program.



2 Theoretical background

2.1 Child-friendly city

The needs of children as citizens must be considered because they are at the age stage in their growth as humans when they learn about everything around them [4]. Children are often not considered an essential element in the development of the city due to their immature age [5]. The rapid development of the city is dominated by the perceptions of adults, and the children's needs are often considered to have been fulfilled by these perceptions. As citizens of the city, children also have their own perceptions towards the surrounding of their city, values, experiences, and expectations of their hometown [6].

Cities play an important role in children's development. Cities can facilitate the needs of children to an open space, such as parks, fields, and other open spaces. Open spaces have many benefits for children, such as to reduce the potential for diseases [7], to enhance the creativity of children [8], and to enhance the physical abilities of children [9]. The natural environment that is represented in an open space has benefits for the growth of children, such as cognitive development, physical/motor development, social development, emotional development, and spiritual growth [2].

The concept of a child-friendly city was originally conceived by Kevin Lynch in a study entitled *Children's Perception of the Environment* in 1971. The results of Lynch's research show that the best urban environment for children is a community that is strong physically and socially, a community that has clear and unequivocal rules, provides opportunities for children, and works as educational facilities which provide the opportunity for children to learn and investigate their environment and the world. The child-friendly city (CFC) is a developmental concept of the city where the rights and perceptions of children are appreciated, facilitated, and considered within their place to live, learn, grow, and play [10]. The CFC also represents a solution for any inconvenience that has often been experienced by children in their activities in the environment [11]. A child-friendly city is a city that can facilitate the needs of children, especially the basic needs that include the need for recreation, education, and health [6].

A child-friendly city should ideally possess the infrastructure that can be used by children to meet their needs in their future growth and development. The infrastructure can be realized in the form of a place for playing and recreation, children's creative activities, and green spaces for plants and animals, as well as activity space for children and parents [12–14].

2.2 Child-friendly integrated public spaces (RPTRA)

The RPTRA is the Jakarta Provincial Government program that was initiated in 2014 in order to create the infrastructure that can facilitate the needs of its citizens, especially children. The program is a supporting program to make Jakarta a child-friendly city. The RPTRA development focuses on residential areas, especially in densely populated settlements. This is to facilitate the access



of local people, especially children, to an open space. Based on the function, the RPTRA is an element of the urban area that can be viewed as social and green infrastructure.

As social infrastructure, RPTRA can act as a social space to increase children's interactions with the surrounding environment during the growth period of children [14]. The RPTRA can also be a place for children to get to know the environment and to learn to cope with problems that occur [32]. The RPTRA as children's activity space can facilitate the needs of children for playing, sports, and education related to the basic needs of children, which are leisure, education, and health. Various types of games that are motoric can train the children's muscles and bodies, so their health can be maintained more [33]. On the other hand, the parks also have an educational function for children, such as to recognize the spatial aspect of a place, to train the intuition of children towards danger, to be closer to nature, as well as to improve their kinesthetic intelligence [34].

As green infrastructure, the RPTRA parks play the role as an urban green open space. An RPTRA park can be a place for biodiversity, a habitat for plants and animals, to create a representation of the natural environment [1]. The diversity of vegetation, especially wooden vegetation in the RPTRA, can attract animals like birds [35, 36]. The RPTRA criteria are based on the literature review on the roles of the RPTRA parks as social and green infrastructure to meet the basic needs of children and their functions as a public space requirement (Table 1).

3 Methodology

This research was conducted using a qualitative approach supported by quantitative data. The qualitative approach was carried out with the case study method. The scope of this study includes:

1. The study focused only on the planning aspect of the RPTRA based on the basic needs of children and the need for public space.
2. The location of the study was selected purposively, with the consideration based on the three conditions of different neighborhoods. The RPTRA park in Kembangan Utara is located in a dense settlement neighborhood. The RPTRA park in Kembangan Selatan is in an affluent residential neighborhood. The RPTRA park in Meruya Utara is situated in an area which is a combination between affluent residential district and settlement.
3. The objects of the observation are children limited to the age of 0–12 years, because, according to some literature, children are categorized as those at the age of 0–12 years, and have different needs to the upper age groups.
4. The adult objects of the observation are visitors aged over 17 years old who visit the park with children.

This research was conducted in several stages, namely the determination of the research topic, problems, and purpose, the literature review, the preparation



Table 1: The criteria of child-friendly integrated public spaces (RPTRA).

Element	Criterion	Note
Children's basic needs		
Education	Educational facilities;	[6]
	Educational programs/events	[15]
Recreation	Playing facilities	[6, 16]
	Playing programs/events	[15]
Sports	Sports facilities	[6]
	Sports programs/events	[15]
The need for public space		
Accessibility	Easy access	[17–19]
	Modes of transportations	
	Distance	
Surrounding environment	Security	[3,13]
	Traffic	
Design	Concept	[20,21]
	Path characteristics	[12, 20, 22]
	Supporting facilities (toilet, bench, garbage bin)	[12, 23]
	Layout	[12, 20]
	Vegetation	[1, 12, 20]
	Circulation	[12, 20]
	Lighting	[11, 19, 23]
	Comfort	[20, 23]
Visitors	Suitability for disabled people	[12]
	The number and the gender of the visitors	[25, 26]
	Visitors' activities	[27]
	The role of parents	[16, 28, 29]
Visits	The frequency of the visits	[30]
	The time of the visits	[30, 31]
	The length of the visits	[30]
	The appeal of the parks	[30]

of the survey framework, the collection of the primary and secondary data, the data analysis, and the preparation of the final report. The primary data collection was conducted by dividing the parks into several sub-areas for easier observation. The secondary data analyzed in this study include the map drawings of the RPTRA park in Kembangan Utara, Kembangan Selatan, and Meruya Selatan and Meruya Utara; as well as the demographic data at each study site.

The data analysis was performed utilizing the Post-Occupancy Evaluation Method proposed by Marcus and Francis in 1998 [37]. The analysis was complemented by the data from interviews and quantitative data obtained from the questionnaire. The Post-Occupancy Evaluation (POE) method provides an overview of the relationship between human interaction and the existing space [37]. The Post-Occupancy Evaluation Method was used to identify the space/park facilities which have been used optimally and the space/park facilities which have been underutilized. Based on this description, the advantages, disadvantages, and potentials that can be developed will be able to be identified.



The indicator evaluation was compiled based on the literature review and the best practices summarized in an evaluation framework (Table 1). The evaluation was conducted on two types of data including the evaluation on the observation results and the perception evaluation (questionnaire). The results of the evaluation would describe the appropriateness of the research site based on the criteria of the ideal child-friendly parks. The evaluation results are grouped into four scales of assessment, namely:

1. Good/child-friendly = achieving $\geq 76\%$ of the provided indicators.
2. Fairly child-friendly = achieving 51-75% of the provided indicators.
3. Less child-friendly = achieving 26-50% of the provided indicators.
4. Bad/not child-friendly = achieving $\leq 25\%$ of the provided indicators.

4 Results

The discussion will illustrate the results of the analysis of the legal, children's basic needs, and public space requirement factors. The discussion on the legal factor is a supporting factor to accommodate the basic needs of children and the need for public spaces contained in the RPTRA program. This is because the RPTRA program, in fact, is one product of a policy that cannot be separated from the legal element. The discussion on the legal factors will be adjusted between the rules on the legal products and the conditions in the real world. The basic needs of children and public space requirements factors are illustrated based on the evaluation according to the criteria composed from the literature review.

For the legal factors, most of the existing rules have been fulfilled by the field conditions of the RPTRA park in Kembangan Utara. There are several rules that cannot be applied, and those rules, among others, are related to the people with disabilities and the cultural events in the park. The availability of wheelchair ramps in the parks is not matched by the accessibility for wheelchair users, so it creates an impression that this park is not favorable to people with disabilities. One consideration of the open space planning for children's activities is actually the equality for people with disabilities [12].

The sport, arts and cultural activities can be performed in the parks, either in open areas such as the plaza in the middle of the parks or in the auditorium (Figure 1). However, there is a lack of art and cultural programs or events to be performed. Examples of art and cultural activities that can be done include local dance training, performing arts, children's drawing, and coloring activities. Art activities such as dancing, drawing, or painting can improve the children's gross motor, fine motor, cognitive, and social skills [38].

From a number of rules of the legal products, there is no rule that clearly lays down the description of the ideal location of a child-friendly park. A park as a children's playroom is ideally located in a residential area, close to where they live, accessible on foot without having to cross any highways or other physical barriers [3], and in an environment safe from crimes [28]. The rules regarding the location of the park is required to accommodate the security and safety of the children, either in the park or on the way to the park. This is because the majority





Figure 1: The facilities of RPTRA in Kembangan which is designed to accommodate children's needs for public space.

of children do not have enough awareness and ability to deal with their external surroundings, especially in terms of security and safety [13].

Based on table 2, the research sites have not been ideal RTPRA parks, but they are quite feasible as RPTRA parks that can fulfill the needs of children for recreational, sports, and educational activities although not yet optimum. They also have met the needs for public space, although they have not yet fulfilled all the indicators. This condition shows that the three parks still need to be improved, both as RPTRA parks and as multi-functional public spaces (as green open spaces and urban elements).

Several things need to be highlighted, including the ability of RPTRA parks to meet the requirements of a child-friendly city, namely a playground and recreational space, a place for creative and recreational activities for children after school, green spaces for plants and animals, as well as integrated activity rooms for children and adults. Since the RPTRA parks are not only parks to grow, which can meet the needs of visitors from children to adults, but also a public space, they should have multifunctional facilities that can be used by people of all ages. Therefore, the RPTRA parks are not merely for children, but can also be multifunctional public spaces. For children in the growing up process, the quality of the parks used for their activities during their childhood can provide an experience that creates an impression and a place attachment filled with a variety of their memories, so that when those children become adults, they have the memory of the parks as a place of activities during their childhood which will encourage them to come back to the parks [39]. The absence of the ratio provision between the needs of recreation, sports, and education will be studied further in the next research.

Of the three parks, the Meruya RPTRA park gains the highest score (72%) with the highest score in design at 90.48%. Although the Meruya Utara RPTRA has the highest percentage of the indicators compared with the other two RPTRAs, it does not mean that it is an ideal RPTRA because the highest score of

Table 2: The evaluation results on the children's basic needs and the need for public space in the research site.

Element	Kembangan Utara RPTRA		Kembangan Selatan RPTRA		Meruya Utara RPTRA	
<i>Children's Basic Needs</i>						
Recreation	87.50%	Good	62.50%	Fair	62.50%	Fair
Sports	25.00%	Less	50.00%	Less	75.00%	Fair
Education	75.00%	Fair	75.00%	Less	50.00%	Fair
<i>The Need for Public Space</i>						
Design	71.43%	Fair	80.95%	Good	90.48%	Good
Accessibility	50.00%	Less	25.00%	Less	25.00%	Less
Surrounding Environment	75.00%	Fair	50.00%	Less	75.00%	Fair
Visitors	100.00%	Good	100.00%	Good	66.67%	Fair
Visits	50.00%	Less	50.00%	Less	50.00%	Less
EVALUATION RESULT TOTAL	70%	FAIR	68%	FAIR	72%	FAIR

the indicator is obtained in its function as a public space. Meanwhile, the Kembangan Selatan RPTRA is the park with the lowest indicator score (68%), but it achieves the highest score indicators of visitors (100%). Although its visitor indicator is high, it does not fulfill the needs of the children, but the need of a public space. The Kembangan Utara RPTRA is the only park which achieves the highest indicator score in meeting the children's basic needs in terms of recreation (87.50%).

Judging from the location where the RPTRA parks are, it was identified that the most optimal RPTRA function is in the dense townships/settlements. This is because the people in dense townships/settlements need spaces to socialize and interact beyond the limited space of their settlements. The RPTRA parks have become a common space used to strengthen the kinship among the citizens. One of the ways is through voluntary work activities, morning gymnastics, as well as child education programs scheduled collectively by the residents in the mixed region. This is because the RPTRA parks can be a place that is used collectively by residents from both the affluent and settlement areas. The RPTRA parks have become a communal space for the residents who mostly know each other. The lowest use of the RPTRA parks is in the affluent residential areas. In this location, the RPTRA parks are, in fact, used by the residents of the settlement areas outside the affluent residential complex. The presence of visitors from the outer neighborhoods turns the RPTRA parks into an unfamiliar area to the

residents of the affluent residential areas. Even though the parks are located in a residential complex, the visitors are from outside the complex that the residents rarely know.

The existence of the facilities and space in the RPTRA parks, able to accommodate the needs of the local residents, can provide a memorable experience for the visitors. This experience will become a memory for these visitors that affect their preference to visit the RPTRA parks again. This is the appeal of a place (Place Attraction) affected by the quality of the experience gained by a person in a place [40]. The “Place Attraction” from a place will affect the sense of attachment towards a place (Place attachment) that affects a person’s preference for visiting a place, even though the place is not in accordance with their needs. This occurs because of the embedded memory of a memorable experience of visiting this place [41].

5 Conclusion

The diversity of functions of the RPTRA parks is limited due to the availability of the land area which restrains them to contribute optimally. Environmental conditions affect the role of every RPTRA park’s most essential function based on the most appropriate function. These environmental conditions are associated with the external and internal conditions. The external conditions include environmental conditions of the settlements where the RPTRA parks are situated, the state of the environmental safety, the accessibility, the role of parents, and the demographics of the children in the neighborhood. The internal conditions include the RPTRA park land area, the available facilities, and the design of the park. Both of these environmental conditions are associated with the basic needs of children and the need for public space. In addition, the legal factor needs to be considered as a basis for the planning and development of the RPTRA parks in the future.

As a public facility, the RPTRA park is still a product used mainly by people from dense residential areas, due to the limited space of their residence, so they need an outdoor space that is easily accessible for interacting and doing their activities. A memorable experience obtained during a visit to the RPTRA parks can be a memory that affects the preferences of citizens in visiting the RPTRA parks in the future. The quality of the RPTRA parks is influenced by the availability of the facilities and the space that suit the needs of the visitors, especially local residents in the settlement areas. In fact, there are physical limitations of the RPTRA parks namely the inability of the RPTRA parks to grow into developing parks that can grow and adapt to the needs of the citizens over time. Their place attachment obtained from the experience of visiting it will be a factor that affects them to keep on visiting the place, although the existing facilities can no longer facilitate to the age group of the increasing number of visitors.

Based on the results of the analysis, several ideal criteria of the RPTRA parks are proposed referring to the three planning factors previously discussed namely the legal factor, the basic needs of children, and the need of the public space. The



proposed criteria consist of the general criteria applied to the three settlement areas and specific criteria aimed at individual residential areas (village clusters, affluent residential areas, and the mixed between affluent residential areas and village clusters).

6 Suggestions

From these results, the suggestions that can be given to the planners and managers of the RPTRA parks include adding the RPTRA parks in Jakarta, so that every child in settlements can easily access the open spaces for playing and doing their activities; the improvement of the accessibility to the RPTRA parks facilitated by providing signposts; grouping the playing facilities by age group; avoiding the use of harmful vegetation; improving the means of education through the available park elements such as by naming the plants or by making use of the areas of the medicinal plants for families (TOGA) to introduce plant functions for children; and developing the RPTRA parks at the city level, not only at the local neighborhood level, so they can expand more and provide a wider range of services.

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