

7-31-2022

RANGE OF CHILDREN'S OUTDOOR PLAYING AREA IN DENSELY POPULATED AREA TOWARDS SUSTAINABLE CITY

Dewi Lestari Simanjuntak

School of Environmental Science Universitas Indonesia, Jakarta, Indonesia, dewi.lestari93@ui.ac.id

Hayati Sari Hasibuan

School of Environmental Science Universitas Indonesia, Jakarta, Indonesia, sarihsb@gmail.com

Donna Asteria

Department of Communication, Faculty of Social and Political Science, Universitas Indonesia, Depok, West Java, Indonesia, donna@ui.ac.id

Follow this and additional works at: <https://scholarhub.ui.ac.id/jessd>



Part of the [Environmental Studies Commons](#), and the [Life Sciences Commons](#)

Recommended Citation

Simanjuntak, Dewi Lestari; Hasibuan, Hayati Sari; and Asteria, Donna (2022). RANGE OF CHILDREN'S OUTDOOR PLAYING AREA IN DENSELY POPULATED AREA TOWARDS SUSTAINABLE CITY. *Journal of Environmental Science and Sustainable Development*, 5(1), 149-164.

Available at: <https://doi.org/10.7454/jessd.v5i1.1131>

This Case-Based Article is brought to you for free and open access by the School of Environmental Science at UI Scholars Hub. It has been accepted for inclusion in Journal of Environmental Science and Sustainable Development by an authorized editor of UI Scholars Hub.



RANGE OF CHILDREN'S OUTDOOR PLAYING AREA IN DENSELY POPULATED AREA TOWARDS SUSTAINABLE CITY

Dewi Lestari Simanjuntak¹, Hayati Sari Hasibuan¹, Donna Asteria²

¹School of Environmental Science Universitas Indonesia, Jakarta, Indonesia

²Department of Communication, Faculty of Social and Political Science, Universitas Indonesia, Depok, West Java, Indonesia

*Corresponding author: dewils1921@gmail.com

(Received: 19 December 2021; Accepted: 12 July 2022; Publish: 31 July 2022)

Abstract

Children need to play, either alone or with friends, especially in outdoors spaces, to benefits their growth and development. Many densely populated areas do not provide children's playgrounds due to the limited area and not planned from the start of development. As a result, children play in the remaining space around the residence, which can threaten the safety and comfort of children. It is essential to pay attention to the safety and comfort aspects of children. This paper aims to explain the spatial reach of children when playing outdoors and children's perceptions about their playing area. This research was conducted in Kelurahan Kalianyar every day from Monday to Sunday, in the morning and afternoon. Conducted interviews with 347 children accompanied by one of their parents and studied literature. The study found that most of the children playing near home (about less than 40 meters and 40-100 meters from their home). Second, 64% of children believe that playing space is unsafe, and 69% believe that playing space is uncomfortable for all children. This study explains that although no play area meets the elements of safety and comfort, children can still play at a distance that is still affordable from their home. Thus, efforts are needed to enhance the safety and comfort of children's play spaces.

Keywords: Children's play space; Comfortable environment; Densely populated area; Safe environment.

1. Introduction

In big cities, including Jakarta, urbanization impact significant land changes and reduces the provision of public freen open spaces that are safe and comfotable for children to play (Ekawati, 2015; Prakoso & Dewi, 2018). In densely populated Hong Kong, even the smallest spaces are of great value due to the lack of land in the city and many playgrounds and recreation areas that are not planned but use up areas left between significant constructions (Lai & Low, 2019). In densely populated settlements, inhabitants use roads, neighborhood roads, alleys, or

small roads as public open spaces available in dense settlements. They are used for various social functions, including children's playing area (Titisari, 2012). In general, people will look for an affordable and safe place to do daily activity and play. However, it would not be easy to find such a place for children to play in a densely urbanized residential area. Therefore, children play by using public areas or leftover spaces as their playground (Prathama & Ellisa, 2020). The lack of children's outdoor play spaces or open spaces has become a severe problem in urban areas. As a result, the safety and comfort of children while playing are very vulnerable, especially children who live in dense urban settlements (Saptorini & Apricilianingtyas, 2017).

In urban areas with high population density, green open space is essential. The existence of green open space can encourage interaction between humans and the environment where children as part of urban society are most affected by the lack of green open space because the children's incredible growth and development can determine the nation's future (Yuniastuti & Hasibuan, 2019).

Children should be able to play outdoors as well as indoors. Outdoor play is a better option that offers opportunities for physical, social development and improves observational skills in children. There are various benefits of playing outdoors and multiple options and challenges and providing opportunities for better development, namely social, physical development, adaptability, and observation, in children's growth and development (Munroe & MacLellan-Mansell, 2016). Each child has the right to play, grow along with their peer, get the chance to develop their potential (according to their interests, capabilities, and capacity level for self-development), and to form a good personality without being limited by the family socio-economic system (Chen et al., 2020; Nugroho, 2019). The Convention on the Rights of the Child stipulates that child are all persons under 18 (eighteen) years.

The Convention on the Rights of the Child also emphasizes that all children's rights are moderately significant and must be accomplished to ensure children's growth, development, and evolution and should not be neglected by adults. Indonesia has recognized the definition of children and children's rights as stipulated in the Child Protection Law. This regulation stipulates that the definition of a *child* is a person up to the age of 17 (seventeen) years, including a child who is still in his mother's womb All children's rights must be fulfilled. The most basic and essential right of children in the stages of growth and development of children is the right to play. Every child must be treated equally and fairly without discrimination based on ethnicity, religion, race, class, gender, ethnicity, culture and language, legal status, birth, physical and mental condition, regardless of their parents' economic background (Sirait &

[Ikhsan, 2020](#)). The right to rest, play and be active in cultural and creative activities must be given to children. The right to play is the most basic right of children and must be given to children, and they should be allowed to play.

One of the efforts in fulfilling the right to play for children is to provide a place to play around the residence, which is safe, comfortable, and ensures the safety of children. When playing, children socialize with their peers, get the opportunity to develop their potential regarding their interests, talents, and intelligence levels for selfdevelopment, and form a good personality without being limited by the family's socio-economic system. The non-fulfillment of children's rights in urban development is a form of the negligence of children's rights. The neglect of children's rights can hinder sustainable development, and the city becomes a city that is far from suitable for children.

Children's growth and development, including motor abilities, capability to socialize with other people, motor skill, adaptability, cognitive abilities, and problem-solving experiences, can develop through play activities fun and like by children ([Nijhof et al., 2018](#)). Growth is related to significant changes, quantity, size, or dimensions at the cells, organs, and individuals, which measures weight, length, bone age, and metabolic balance. Development increases skills (ability) in more complex body structures and functions in a regular and predictable pattern due to the maturation process ([Yuniastuti & Hasibuan, 2019](#)). Like other age groups, children also have the right to live, develop, and carry out activities in the city ([Setiawan, 2006](#)).

Cities must provide space for children for a better future. As part of the city's citizens, children play a role in realizing a livable and friendly city for all children and adults ([Makalew, 2019](#)). Children are citizens who are essential to pay attention to. Playing has various benefits for children, including physical, social, cognitive, and emotional benefits, promoting overall brain development. Through play, children instinctively challenge and test the limits of their physical abilities, allowing children to learn many things during their growth and development period. By giving children the opportunity to play freely, they can learn independence, feel a sense of belonging in society, and connect with the natural environment.

Outdoor playing areas for children that pay attention to the safety and convenience of children when playing are crucial to be considered by the government. In dense residential areas, the forms of public open spaces include roads, neighborhood roads, alleys, railroad borders, and river borders, and many children play in these places because of the unavailability of suitable green open spaces. Limited outdoor space, adults' apprehensions, and their house rules become barriers for children in playing outdoor ([Worpole & Knox, 2007](#)). In addition,

children can also develop the ability to love the environment or interact with nature, which is learned from an early age and can be beneficial when adults (Purnamasari et al., 2018). Children require open space for play, study, exercise, and recreation to grow and develop properly, which is very important for developing and training children's cognitive, affective, and psychomotor skills (Yuniastuti & Hasibuan, 2019).

The opportunity to play and enjoy free time needs to be provided for children, mainly to play outdoor or public open spaces so that the children can make friends and learn some of the rules of life and games together. The existence of public open space is essential for children, especially if there is no play area provided for them to meet their needs. The provision of easily accessible public spaces, especially for children, women, the elderly, and people with special needs, is an effort to realize the mandate of SDGs 11.7. The need for public space in a city, especially to be a place for children to play, is essential to provide. Outdoor playing areas for children that pay attention to the safety and convenience of children when playing are crucial to be considered by the government. A secure, comfortable city and ensures the safety of all residents, especially children who live in the town, is a characteristic of a child-friendly city.

The qualified future generation will be born from a more suitable environment. A more suitable environment means providing open space that allows children to play actively and learn significant values. They can interact with peers and nature and get benefits from playing activities. These benefits will be essential for them if they become adults (Prihantini & Kurniawati, 2019). In dense residential areas, the forms of public open spaces include roads, neighborhood roads, alleys, railroad borders, and river borders, and many children play in these places because of the unavailability of suitable green open spaces. Limited outdoor space, adults' apprehensions, and their house rules become barriers for children in playing outdoor (Worpole & Knox, 2007). This study continues previous research on the benefits of playing in open spaces in densely populated areas, emphasizing aspects of space and the environment as a place for children to play.

2. Methods

Research methods include observing children's playing activities, reviewing the literature, and interviewing 347 children aged 10 to 14 years accompanied by parents, collecting, and analyzing data. Dense residential areas were chosen because of theoretical needs by considering constraints in the interview process and time.

The research has conducted field observations to observe public open spaces, which are children's play areas around their homes or residential areas, to observe the condition of these spaces. Field observation is helpful to complete the introduction to the location and develop the analysis of the condition of the children's playing area. This research was conducted every day, from Monday to Sunday. The selected time is in the afternoon and the afternoon. The study was conducted during the day because, in general, the time for children to play after studying in the morning. The study was conducted in the afternoon because many children played in the afternoon after or before dinner. The study was not conducted at night because the research site was subject to regulations on children's playing time and a condition for studying at home at night.

The research also has accomplished a literature review to determine the benefits of playing for children and the reach of accessible and safe spaces for children. Children and parents who met the criteria were asked to participate in this study. Children were asked to fill out a questionnaire. The use of questionnaires is a simple way to get the opinions of children and involve them in improving the quality of the children's playing area in residential areas. In this study, a questionnaire was used as a tool in data collection where each child was asked to answer prepared questions.

According to field observations, children played during the day until the afternoon, and even children played at night when the road was empty of passing vehicles. We saw that four-wheeled and two-wheeled motorized vehicles pass throughout the day, especially in the morning to evening. Children playing in the alleys or on the street should share the space with other activities such as car parks, or sellers are visible in many locations, especially since the house does not have a yard to store their vehicles and uses the street to park vehicles.

There is no open space at the research location, such as an outdoor playground prepared for children to play, especially green open spaces that can provide opportunities for children to interact with nature. The roads used by children to play are also used by the motorized vehicles to pass by, traders, and parking lots. There were also children playing inside the alley; it is relatively narrow, so children cannot play actively and freely. Active play outside the home affects the growth and development of children in their growth period. Research has shown that children who play actively benefit a lot. However, in densely populated urban areas, space is more focused on physical development, so the space for children to play outside is very limited (Marouf et al., 2015).

2.1. Research location

The research location is in Kelurahan Kalianyar, Tambora District, West Jakarta City. Kelurahan Kalianyar consists of 9 Rukun Warga (RW), a local name as part of a sub district in Indonesia, and 101 Rukun Tetangga (RT), a local name part of RW. The Kelurahan Kalianyar is approximately 0.313 km square or about 5.90% of the area of Kecamatan Tambora. Based on the Regional Regulation of DKI Jakarta Province No. 1 of 2014 concerning Detailed Spatial Planning and Zoning Regulations, Kelurahan Kalianyar is directed as a residential area zone with medium to high density, public and social service zones, regional government zones, also green belt zones and blue open zones, supported by the development of collector roads secondary.

The total population in the year 2020 was 28,656 people, with a population density of 91,699 inhabitants per km square. Kelurahan Kalianyar is the most densely populated sub-district in DKI Jakarta, it is already densely built, and there is no space specifically designed for children's play areas. Map of research location as shown in Figure 1.

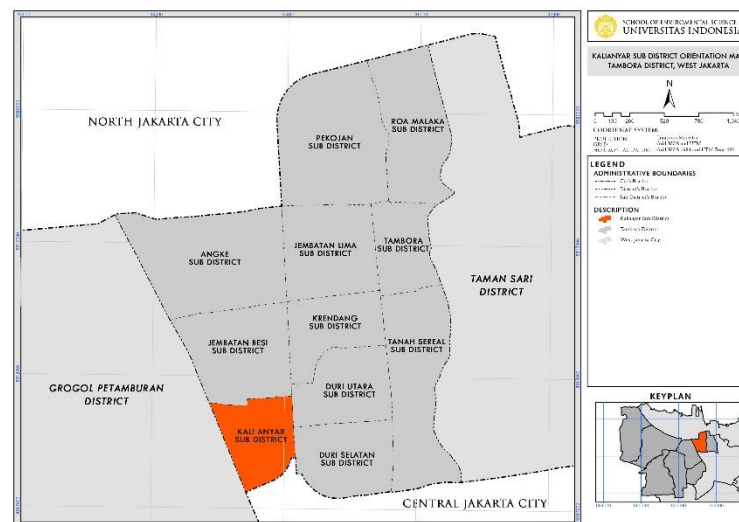


Figure 1. Map of research location

2.2. Data collection and analysis

The condition of the children's playground includes the variable distance from the house and other playing areas visited, aspects of the comfort and safety of the playground from the children's point of view. The distance of the playing area from the house to find out the furthest distance traveled by the child by walking. In other studies, it is stated that there is a 3-5 minute walk to reach the playground, and in some cases, children have to walk more than 8 minutes

(Qiao, 2019). Proximity to settlements is < 200 meters and within reach of parental supervision of < 100 meters (Dewi, 2012).

Other places visited were asked to get the child's perception of the preferred place to visit to provide figures on efforts to improve the children's daily playing areas based on children's opinions.

A safe environment can be defined as a place away from the dangers of accidents and crime. In contrast, a comfortable environment is a place that gives children a sense of comfort when playing and taking advantage of their free time and they often visit to play (Nugroho, 2019). The proportion of respondents based on age and gender is depicted in Table 1. Based on the answers to the questionnaire, there were 129 boys (37%) and 218 girls (63%).

Based on the answers to safety and comfort shown in Table 1, 223 children (64%) think that the playing area is still unsafe, and 239 children (69%) said the playing space was uncomfortable. For children, safe is a condition where children can enjoy games, so they are happy to play in that place; comfortable is a condition while playing without interruption from motorized vehicles.

Table 1. Distribution of participants and playing space condition.

Age	Sex	Sum	Condition	Sum	Frequency
10 year	Girls	36	Safe	124	36%
10 year	Boys	30	Not Safe	223	64%
11 year	Girls	41			
11 year	Boys	37	Comfortable	138	40%
12 year	Girls	54	Not Comfortable	239	69%
12 year	Boys	25			
13 year	Girls	45			
13 year	Boys	21			
14 year	Girls	42			
14 year	Boys	16			
Sum		347			

For children who consider the playing space was unsafe, uncomfortable and do not meet the criteria for a safe and comfortable playing area, the children stay to play. They still carry out playing activities with limited types of games according to space conditions. Furthermore,

they play with supervision from parents who warn children to be careful and play only near the house.

When it comes to child-friendly cities, the research location cannot be called child-friendly cities. Child-friendly cities have several characteristics that need to be considered by stakeholders, be it the government or parents. One of the essential characteristics of a child-friendly city is that children can play and meet their peers to play in a safe city (Nam & Nam, 2018).

The opinion of children who were respondents in this research said that the research location was not safe and uncomfortable as a place for them to play, so it still cannot be categorized as a child-friendly city in terms of the availability of a playground for children (Masri, 2018).

The unavailability of a children's playground at the research site can affect and impact the children's character. Conditions such as those found in research locations are common in other urban villages, which are classified as densely populated and have a large population of children. With such a large number of children, the availability and adequacy of playgrounds should concern the local government and higher authorities (Latfi & Karim., 2012).

3. Results and discussion

Previous studies have determined that children play in places still under parental supervision and can be reached by walking, meaning that children play close around the house. This finding is different from previous studies, which explains that children in dense settlements tend to spend time indoors rather than playing outside (Hanapi & Ahmad, 2016). In dense residential areas, it is very difficult for children and young people to find a playing area that meets their active play needs. Therefore, they use public areas or leftover spaces to fulfill their playing needs. Playing near the house and being supervised by parents gives children a sense of security because the environmental conditions are prone to accidents and dangers when playing. However, they feel more enjoy playing activities without parental supervision (Dewi, 2012).

The condition of the research location, which has limited open space, makes children no longer free to play. The opportunity for children to play in the open space is minimal, and the space for movement is very narrow. With limited space, there is a tendency for children to play with activities that are only carried out around the house. Children only play around the house because of the opinion of children and parents that the condition of the space around the research location is unsafe and uncomfortable as a place to play.

The children who were the respondents who were born and grew up in the research location adapted to the restricted space conditions. When visiting a place with a better level of security and comfort, they can be sensitive and feel the difference in these conditions. So they can compare the circumstances and conditions.

This research results align with previous research, which explains the increasingly limited space for children to play (Dodd et al., 2021). Many studies have explained the benefits of playing for children (Latfi & Karim, 2012; Wolch et al., 2014). Children can play alone or with friends and benefit from their development during their growth. To get optimal benefits from playing, children need to be allowed to enjoy their free time by playing in open spaces outside the house (Vitale, 2011). The distance from the playground, which is close to the house, makes the children walk to visit it or cycle with peers. Playing and interacting with peers can develop social skills, competition, creativity, and other positive benefits (Yin et al., 2022).

3.1. Distance from home

In this study, we distinguish between the playing area in the research location and the playing area outside the research location. Table 2 has shown that a total of 301 children (87%) chose to play with fewer than 5 meters to 40 meters near their house, 46 children (13%) played more than 40 meters and up to about 100 meters to get a more expansive space for being able to play actively and freely. This data shows that it is true that all children from the age group of 10 to 14 years do play around the house at a reasonably close to the house. The unavailability of a children's play area in research location that can reach by walking requires children to play in limited space around their house.

Table 2. Distance of playing area from home.

Distance (m)	10 year		11 year		12 year		13 year		14 year		Sum
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
< 5	17	20	14	18	11	24	10	24	6	19	163
> 5-10	5	9	9	14	3	7	5	8	1	6	67
> 10-20	5	2	6	4	2	11	5	4	3	10	52
> 20-30	0	1	2	1	2	0	0	2	2	3	13
> 30-40	0	0	1	0	1	3	1	0	0	0	6
up to 100	3	4	5	4	6	9	0	7	4	4	46
Total	30	36	37	41	25	54	21	45	16	42	347

Children who play over a more extended spatial range are found in all age groups in small numbers. Determination of the distance where children play is estimated and measured from the house based on the help of parents who accompany the research. A short distance can be reached on foot. From these findings, we conclude that with the furthest distance to play, it can still be reached within walking range, still close to home, and thus can still be supervised by parents or supervisors.

The playing area is based on the distance from the house based on the respondents' answers, including in front of the house, in the alley/along the narrow alley, and the highway closest to the house. Children are also playing on the soccer field, particularly children who live near the soccer field, which is currently closed for sports activities and children. Another finding is that there are also children playing on the edge of the train trails, which will endanger the safety of the children. Playing actively outdoors will make children do physical activity, although some also sit passively while using their devices to play games. The activities of children playing around the house can be seen in Figure 2.



Figure 2. Children's activities while playing

Children's alternative games are playing bicycles, skateboarding, or playing football, which are done by two or more children. When playing, boys play with boys, and girls play with girls. When playing in a narrow alley, children cannot play active games. Instead, they just sat around with a few friends. Meanwhile, they are freer to play actively on wider roads, even though they often have to pull over and stop activities if a vehicle passes.

Although there are times when children are not accompanied by their parents when playing, parents feel calmer and less worried because children only play around the house, which is a

daily play area and because there are neighbours who know their children and can participate in supervising. It also prevents crime against children.

3.2. Playing area outside the research location

In this research, we also consider the existence of other playing space locations that children outside the research location have visited. Although a small number of children never play in other places due to economic factors and the busyness of their parents, the existence of other open space options as a place to play can be an excellent alternative to increase children's knowledge and introduction to the environment.

Three hundred twenty-five children claimed to have played in public open spaces outside the research location with their parents or peers to experience playing in a place with better conditions, described in Table 3. When this research was carried out, children and parents who answered that they had visited the other place outside the research location made the visit before the Covid 19 Pandemic. Of all respondents, 22 children claimed to have never played in another location due to the economic reasons of paying for transportation costs. In addition, due to busy parents or working parents, they could not bring their children to play to a location a bit far from home.

Table 3. Playing area outside the research location.

Ever played anywhere else	Sum	Location	Distance from riset location (km)
Sometimes	100	GOR Grogol	1
Once	209	RPTRA Krendang	1.2
Often	16	RPTRA Kalijodo	2.7
Never	22	Pluit Jokowi Park	6.3
Sum	347	Dunia Fantasi	7
		Gelora Bung Karno	9

Preferency	Sum
Daily playing spaces	222
Other places	123
No Opinion	2

The research assumes that by visiting other playgrounds, children can compare the conditions to a better space. From the preference questions, we found that 222 children (64%) preferred their daily playground because they were familiar with the environment, had lots of friends to play with, felt calm because it was close to home, and can be supervised by their parents and known neighbors. There are also 123 children (35%) who prefer other places they have visited. These places are more comprehensive, clean, safe from motorized vehicles, so children can play actively, feel safe and comfortable when playing.

Based on the research results, some playgrounds are still near the research location or where the children live. For a close location, children come by walking or cycling. Children come with their parents and younger siblings to more remote locations by car or public transportation.

By knowing the preferences of children's playgrounds at and outside the research sites, we can find out what the children need, what they like, and the activities they like when playing at these locations (Tayefi Nasrabadi et al., 2021; Yin et al., 2022). The results of this research can also be input for stakeholders in urban planning in dense settlements to allocate open space or manage the remaining space in the city to meet children's playing needs (Wolch et al., 2014)

4. Conclusion

In conclusion children can still play at a distance that can be reached by walking to meet their playing needs, even though the condition of the playground does not meet the safety and comfort criteria of the child. Children feel safe because parents supervise them, they know the environment, and close to home.

This study does not directly capture the activities of children playing at night. Description of the conditions of the playground and playing activities at night was obtained from the answers of the children and their companions. Further research can be carried out by considering family economic factors and their influence on children's playing behaviour in public spaces. Although the findings of this study are preliminary, there are some interesting findings regarding the use of outdoor playing spaces by children:

1. This study found that all children who play, regardless of age and gender, use the existing open space as a place to play because there is no playground at this location.
2. The children have a sense of attachment to the location because they already know the place well, and the feeling of security is due to parental supervision. Most prefer to favor the playing spaces to other areas outside the location.

3. Efforts are needed to improve safety and comfort, including providing traffic signs, warning signs for many children playing, and planting plants for environmental comfort.
4. Improving the safety and comfort aspects of the space around the house and the public open space, which is a place for children to play, needs to be done by paying concentration to the needs of children. A securer and more comfortable space for children will provide chances for more optimal child development.

Based on the research results, it can be understood that the existing playing space is very limited. Children are expected to learn positive values from the limited location, including adapting to existing limitations, which will form good personalities when they grow up. In the end, children will be able to grow and develop into a better and quality generation and fulfil the basic rights that are important in their growth period.

Acknowledgment

I appreciate the surveyor team who assisted in data collection, Agung, who assisted in the design of the site map, and Remy, my colleagues who helped proofread this article.

Author Contribution

Dewi Lestari Simanjuntak contributed to preparing the initial draft, data collection, field checks, and conducting interviews with the respondents. Hayati Sari Hasibuan and Donna Asteria contribute to delivering input for the revision of article writing and approval of the draft article, as well as delivering constructive input for article writing

References

- Chen, Q., Du, M., Cheng, Q., & Jing, C. (2020). [Quantitative Evaluation of Spatial Differentiation for Public Open Spaces in Urban Built-Up Areas by Assessing SDG 11.7: A Case of Deqing County](#). *ISPRS International Journal of Geo-Information*, 9(10), 575. <https://doi.org/10.3390/ijgi9100575>
- Dewi, S. P. (2012). [How Does The Playground Role in Realizing Children-Friendly-City?](#) *Procedia - Social and Behavioral Sciences*, 38(December 2010), 224-233. <https://doi.org/10.1016/j.sbspro.2012.03.344>

- Dodd, H. F., Fitzgibbon, L., Watson, B. E., & Nesbit, R. J. (2021). Children's play and independent mobility in 2020: Results from the british children's play survey. *International Journal of Environmental Research and Public Health*, 18(8). <https://doi.org/10.3390/ijerph18084334>
- Ekawati, S. A. (2015). **Children – Friendly Streets as Urban Playgrounds**. *Procedia - Social and Behavioral Sciences*, 179, 94-108. <https://doi.org/10.1016/j.sbspro.2015.02.413>
- Hanapi, N. L., & Ahmad, S. S. (2016). **A Review on Environmental Characteristic that Influence Children Physical Activities in Low Cost Housing**. *Procedia - Social and Behavioral Sciences*, 222, 19-27. <https://doi.org/10.1016/j.sbspro.2016.05.166>
- Lai, P. C., & Low, C. T. (2019). **Provision of convenient play space in a densely populated city**. *International Journal of Environmental Research and Public Health*, 16(4). <https://doi.org/10.3390/ijerph16040651>
- Latfi, M. F. M., & Karim, H. A. (2012). **Suitability of planning guidelines for children playing spaces**. *Procedia-Social and Behavioral Sciences*, 38, 304-314.. <https://doi.org/10.1016/j.sbspro.2012.03.352>
- Makalew, F. P. (2019). **Child P** <https://doi.org/10.5539/jsd.v8n2p113>**edestrian Friendly Design Principle for the Settlement and Housing area**. *IOP Conference Series: Earth and Environmental Science*, 328(1). <https://doi.org/10.1088/1755-1315/328/1/012018>
- Marouf, N., Che-ani, A. I., Tawil, N. M., Johar, S., & Tahir, M. M. (2015). **Development of Designing Criteria in Children ' s Urban Play Space in Iran-Review of Literature**. *Journal of Sustainable Development*, 8(2), 113. <https://doi.org/10.5539/jsd.v8n2p113>
- Masri, S. S. (2018). **Integrating youth in city planning: developing a participatory tool toward a child-friendly vision of Eastern Wastani–Saida**. *Alexandria Engineering Journal*, 57(2), 897-909. <https://doi.org/10.1016/j.aej.2017.01.023>
- Munroe, E., & MacLellan-Mansell, A. (2016). **Outdoor Play Experiences for Young First Nation Children in Nova Scotia: Examining the Barriers and Considering Some Solutions**. *Journal of Childhood Studies*, 38(2), 25-33. <https://doi.org/10.18357/jcs.v38i2.15448>
- Nam, H., & Nam, S. I. (2018). **Child-friendly city policies in the Republic of Korea**. *Children and Youth Services Review*, 94(April), 545-556. <https://doi.org/10.1016/j.childyouth.2018.08.033>

- Nijhof, S. L., Vinkers, C. H., van Geelen, S. M., Duijff, S. N., Achterberg, E. M., Van Der Net, J., ... & Lesscher, H. M. (2018). [Healthy play, better coping: The importance of play for the development of children in health and disease](#). *Neuroscience & Biobehavioral Reviews*, 95, 421-429. <https://doi.org/10.1016/j.neubiorev.2018.09.024>
- Nugroho, A. M. (2019). [Child-friendly Kampong: Quality of play value criteria for children's identity and play place in Malang, Indonesia](#). *IOP Conference Series: Earth and Environmental Science*, 314(1). <https://doi.org/10.1088/1755-1315/314/1/012080>
- Prakoso, S., & Dewi, J. (2018). [Child-friendly integrated public spaces \(RPTRA\): Uses and sense of attachment](#). *IOP Conference Series: Earth and Environmental Science*, 126(1). <https://doi.org/10.1088/1755-1315/126/1/012199>
- Prathama, D., & Ellisa, E. (2020). [Sustainability in High Dense River Bank Kampung: The Playground as the Responsive Space Utilization](#). *IOP Conference Series: Earth and Environmental Science*, 409(1). <https://doi.org/10.1088/1755-1315/409/1/012008>
- Prihantini, P., & Kurniawati, W. (2019). [Mapping of Child Friendly Parks Availability for Supporting Child Friendly City in Semarang](#). *IOP Conference Series: Earth and Environmental Science*, 313(1). <https://doi.org/10.1088/1755-1315/313/1/012035>
- Purnamasari, W. D., Jessikayanda, H. A., & Rudinanda, O. I. (2018). [Children's perception and behaviour in using social space of formal and organic/kampung settlement \(Case study: Blimbing District in Malang City\)](#). *IOP Conference Series: Earth and Environmental Science*, 202(1). <https://doi.org/10.1088/1755-1315/202/1/012064>
- Qiao, S. (2019). [Organizing play spaces for children in China's megalopolises: preferences and requirements of parents](#). *Early Child Development and Care*, 0(0), 1–12. <https://doi.org/10.1080/03004430.2019.1659788>
- Saptorini, H., & Apricilianingtyas, H. (2017). [Safety and Comfortableness of Playing as the Manifestation of Child Friendly Kampung. Case Study of Kampung Badran Yogyakarta](#). *Journal of Architectural Research and Design Studies*, 1(1), 34-41. <https://doi.org/10.20885/jars.vol1.iss1.art4>
- Setiawan, B. B. (2006). [Ruang Publik dan Modal Sosial: Privatisasi dan Komodifikasi Ruang di Kampung](#). *Unisia*, 29(59), 28-38. <https://doi.org/10.20885/unisia.vol29.iss59.art12>
- Sirait, N. N., & Ikhsan, E. (2020). [Child-friendly city; A strategy to provide child protection right in Medan](#). *IOP Conference Series: Earth and Environmental Science*, 452(1). <https://doi.org/10.1088/1755-1315/452/1/012112>

- Tayefi Nasrabadi, M., García, E. H., & Pourzakarya, M. (2021). [Let children plan neighborhoods for a sustainable future: a sustainable child-friendly city approach.](#) *Local Environment*, 26(2), 198-215. <https://doi.org/10.1080/13549839.2021.1884668>
- Titisari, E. Y. (2012). Meaning of alley as comunal space in Kampung Kidul Dalem Malang. *Journal of Basic and Applied Scientific Research*, 2(10), 10087-10094.
- Vitale, A. (2011). [Children's play: a tool for public health interventions.](#) *International Journal of Pediatric Obesity*, 6(S2), 57-59. <https://doi.org/10.3109/17477166.2011.613677>
- Wolch, J. R., Byrne, J., & Newell, J. P. (2014). [Urban green space, public health, and environmental justice: The challenge of making cities “just green enough.”](#) *Landscape and Urban Planning*, 125, 234-244. <https://doi.org/10.1016/j.landurbplan.2014.01.017>
- Worpole, K., & Knox, K. (2007). [The Social Value of Public Spaces.](#) *Jrf*, 15. <https://www.jrf.org.uk/sites/default/files/jrf/migrated/files/2050-public-space-community.pdf>
- Yin, S., Kasraian, D., & van Wesemael, P. (2022). [Children and Urban Green Infrastructure in the Digital Age: A Systematic Literature Review.](#) *International Journal of Environmental Research and Public Health*, 19(10), 5906. <https://doi.org/10.3390/ijerph19105906>
- Yuniastuti, E., & Hasibuan, H. S. (2019). [Child-friendly green open space to enhance the education process for children.](#) *IOP Conference Series: Earth and Environmental Science*, 243(1). <https://doi.org/10.1088/1755-1315/243/1/012161>