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## **CHILD FRIENDLY URBAN NEIGHBORHOOD IN PUTRAJAYA, MALAYSIA**

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### **Abstract**

*Putrajaya, Malaysia was developed by Putrajaya Corporation with a purpose of achieving sustainability through maintaining a balance between the social aspect, the environment and the economy. The planning was based on two fundamental concepts i.e. city in the garden and the intelligent city. In line with this target, various initiatives to create a better quality of life for the residents had been incorporated into the planning and design of the neighborhoods. Among these initiatives include consideration towards the needs of children in their daily routine. This paper discusses the findings of a study done to assess the residential environment in Precinct 11 Putrajaya in terms of the level of child-friendliness. The study evaluates five common areas where children often goes to within an urban neighborhood and its surroundings. The five areas are the residential blocks, parks and recreation spaces, school environment, commercial centers and community facilities area. Primary data were gathered through guided observation,*

*capturing of images through photography and also face-to-face interviews with adults who have children aged between 7 to 12 years old at the selected locations during a two-week long field survey. The observation checklist and the questionnaire were based on indicators that reflect child-friendliness in terms of the social and physical environments. The study found that the physical environments in most areas are responsive to children's needs. However, the social interactions in Putrajaya Precinct 11 neighborhoods are found to be limited and confined. Based on the findings and indicators of a child-friendly environment, several suggestions are outlined at the end of the paper in an effort to promote a better quality of life for children in the urban neighborhoods.*

### **Keywords**

Urban Neighborhood, Child-Friendly Environment, Neighborhood Planning

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## **1. Introduction**

The first thrust that the National Urbanization Policy was built upon called for “an efficient and sustainable urban development” (Federal Department of Town and Country Planning, 2006). In line with this target, the Malaysian government had attempted to provide policies to bring about a better life to the people. Among these were the various initiatives to promote a child-friendly environment in order to achieve the children's needs and requirements in the urban neighborhoods. In Malaysia, the issues regarding the child-friendly environment were not being given due attention and according to Badaruddin (2015), currently the urban design and housing settings are planned specially for adult without taking into consideration the needs of the growing number of children. Due to this issue, Malaysia did not have a specific guideline or framework to consider children's needs in neighborhood planning and residential development. Therefore, the need to promote child-friendly environment in the urban neighborhoods in line with creating more sustainable cities and urban living was the basis for undertaking this study.

Child-friendly environment, a concept being promoted worldwide, aims at fulfilling children's right at the communities and local authorities' level. Highlighting several authors who had stressed the importance of the environment for children, Oppong (2019) stated that “the development of the individual learner in his/her early years is highly dependent on the social and environmental context in which the individual finds him or herself”. In this respect, assessing neighborhoods for child-friendliness is crucial because these are the first place where children

interact with the outside world. According to Freeman & Tranter (2011), these is where children “begin to encounter the world outside the home, where children make their first independent forays and where they become part of wider public life”. Bartlett et al (cited in Freeman & Tranter, 2011, p.77) explains that “this move to independence can only happen if the neighborhood base is itself a place that provides good experiences”.

“Ideally, a neighborhood should be place where children can play safely, run errands, walk to school, socialize with friends and observe and learn from the activities of others. When neighborhood provide a secure and welcoming transition to the larger world, children can gradually test and develop their competence before confronting the full complexity of the city... also provide the opportunity for children to begin to understand, accept and ideally enjoy differences, a critical part of children development as tolerant, and responsible citizens.”

There is a need for the city to become more child-friendly and there had been efforts to help cities and communities to comprehensively and systematically assess themselves in terms of child-friendly domains (UNICEF, 2008). Bedford, Jones and Walker (cited in Biddulph, 2007) stated that living a more sustainable way would include the child-friendly environment, an environment where kids can roam, play and socialize freely, rather than surrounded by traffic and highway. The development of Putrajaya was based on the concept of garden city with a vast network of open spaces and recreational areas which composed 38.83 percent of the total area. This study focused on neighborhoods in Precinct 11, Putrajaya which covers 340.76 hectares. The study aims at evaluating the neighborhoods and its surrounding environment in relation to child friendly indicators. Objectives of the research are as follows:

- i. To analyze the various environments that children often goes to within the neighborhoods in the study area.
- ii. To evaluate the children’s mobility within the urban neighborhood level.
- iii. To propose actions in promoting child-friendly environment in urban neighborhoods.

## **2. Planning for a Child Friendly Environment**

Planning for a child-friendly environment is a specific action towards achieving the Sustainable Development Goals (SDGs) No. 11 i.e. Sustainable Cities and Communities. This goal is geared towards making cities and human settlements inclusive, safe, resilient and sustainable.

Many authors share the view that the physical and social aspects are important considerations to promote the development of a child-friendly environment. Children learn through interactions with activities within their immediate environment. In describing the UNICEF Child Friendly School Framework, Ferdousi (2018) stated that among the lessons that children requires “include essential life skills aimed at keeping them safe and building the skills they will need to fulfill their potential and contribute fully to society”. According to Broberg, Kytta, & Fagerholm (2013), the child-friendly environment is related to safety, available green spaces, variety of activities and settings, independent mobility possibilities and active socialization or “neighborliness”. The integration of children into decision-making processes are often included as an essential criteria of environmental child friendliness (Freeman & Tranter, 2011; Haider, 2007; McAllister, 2008). Horelli (2007) states that a more systematic definition of an environment that is child-friendly is embedded in both the substantive and procedural theories of a good environment. There are 10 normative dimensions of this definition which are family, peers and community; sense of belonging and continuity; good governance; safety and security; participation; housing and dwelling; basic service; provision and distribution of resources and poverty reduction; ecology; and urban and environmental qualities.

In the social aspect, several authors studied the concept of independent mobility among children. Malone and Rudner (2017) defined children independent mobility as children’s ability to be free to move around in their environment without a parent or another adult. According to Tosin and Ismail (2018), independent mobility means children’s opportunity of free play in the neighborhood without adult supervision. Kytta et al (as cited in Tosin & Ismail, 2018) highlighted that the study on children’s mobility was first analyzed in the 1990s by measuring the territorial range which implies the “geographical distance from children’s home to places where they have freedom to play and socialize...”. The concept of independent mobility enhances physical activity and children’s opportunity to learn through interaction with their surroundings as reported in past studies mentioned by Hanapi and Ahmad (as cited in Tosin & Ismail, 2018). Stark, Fruhwirth, & Aschauer (2018) observed that there is a declining trend in active and independent mobility for children aged 7 to 12 years. In this study, only the safety and security aspects are included as indicators for the social component.

Barton, Grant and Guise (2003) advocated an inclusive environmentally responsible model of neighborhood, which are relevant for making urban neighborhoods and environment

more child friendly. There are three approaches in measuring child friendliness of an urban neighborhood. Goosen, Z. (2015) summarizes these three approaches as follows:

- i. Child Oriented Planning Approach - focused on integrating the concepts of safety, green space, access and integration in the design and development of a child-friendly environment.
- ii. Urban Design Approach - focused on traffic calming element, separation, different surfaces and sufficient benches in the design and development of a child-friendly environment.
- iii. Place Making Approach - focused on integrating concepts such as access and linkages, comfort and images, uses and activities; and sociability.

Table 1 on the next page summarizes the criteria of child-friendly environment based on the literature. Most of the indicators were included in the observation checklist for the field study in Precinct 11 Putrajaya.

### **3. Existing Environment in Putrajaya**

Putrajaya's planning and development were driven by two fundamental concepts that are, city in the garden and the intelligent city. These concepts are to guide the physical development with a purpose to create a balanced and sustainable development encompassing the 3 major components – social, environment and the economy.

Putrajaya applied the “neighborhood” concept for all its residential areas. This concept was applied in each neighborhood within the larger residential precincts. The neighborhoods were planned to have enough services, have good access and pedestrian paths, adequate facilities that are well connected and have adequate landscaped open spaces which are to be well maintained. Equally important in the neighborhood planning was to have a critical mass of residents to make all residents feel livable and attain a good quality of life. In terms of the physical form, each neighborhood is defined by roadways, open spaces or housing blocks and parks.

In addition, each residential precinct must have at least one neighborhood park and not far from a larger park beyond its boundary. Figure 1 shows the study area i.e. Precinct 11 and the surrounding development, while Figure 2 shows the division of Precinct 11 into eight neighborhoods for the purpose of this study.

**Table 1: Criteria of Child-Friendly Environment**

No.	Indicator	Child-Friendly Environment	
<b>Children's Needs</b>			
1.	Children's Housing Needs (Social and Physical) (Cooper and Sarkissian, 1986)	Safe outdoor play areas	
		Safe from traffic and pollution	
		Natural spaces	
		Private open space that is linked to communal open space	
		Communal spaces for adults and children to meet each other	
		Private play spaces	
		Good management and maintenance regimes	
		House identity and variety in buildings	
2.	School as Community Assets (Steen, 2003)	Safety	
		Accessibility	
		Integration	
3.	Making Public Space work (Cooper and Francis, 1998)	Easily accessible and can be seen by potential users	
		Beautiful and engaging	
		Accessible to children and people with disabilities	
		Provide a feeling of safety and security	
		Furnished to support the most likely and desirable activities	
		Provide an environment that is physiologically comfortable	
		Clearly convey the message that they are available and meant to be used	
		Offer relief from urban stress and enhance the health and emotional well-being of its users	
		Are geared to the needs of the user group most likely to use the space	
		Encourage use by different groups	
Incorporate components that can be manipulated			
<b>Children's Right in a Child-Friendly City</b>			
1.	Children's Right (UNICEF, 2004)	Influence decisions about their city	
		Express their opinion on the city they want	
		Participate in family, community and social life	
		Receive basic services such as health care and education	
		Drink safe water and have access to proper sanitation	
		Be protected from exploitation, violence and abuse	
		Walk safely in the streets on their own	
		Meet friends and play	
		Have green spaces for plants and animals	
		Live in an unpolluted environment	
		Participate in cultural and social events	
Be an equal citizen of their city with access to every service, regardless of ethnic origin, religion, income, gender or disability			
<b>Measuring Child Friendliness (Cilliers and Goosen , 2016)</b>			
1.	Child Oriented Planning Approach	Safety	Green space
		Accessibility	Tradition
		Integration	Scale
2.	Urban Design Approach	Traffic calming element	
		Separation	
		Different surface and sufficient benches	



**Figure 1:** Surrounding development in Precinct 11 Putrajaya



**Figure 2:** The division of Precinct 11 Putrajaya

#### 4. Research Methodology

The study seeks to evaluate the urban neighborhoods and its surrounding environment in terms of children's needs and requirements. The study undertakes primary data collection using guided observation, capturing of images through photographs and also face-to-face interview

with adults who have children aged between 7 to 12 years old. The specific observation points were determined based on the children's perspective indicators checklist that was derived using the Analytical Hierarchy Process (AHP) method. The observation points were residential areas (neighbourhood), education institutions (primary school and tuition centre), recreation area (park and playground), commercial area and a public facility.

For the residential areas, samples were selected using the simple random sampling. From the eight neighborhood areas in Precincts 11 Putrajaya, 10 streets were chosen for the guided observation survey. The target respondents focused to children who were in primary school age category which are between 7 to 12 years old. This fulfills the description stated in the Malaysia's Education Blueprint 2013-2025.

This study analyses the children's physical environment and their usual movement to and from home to school, tuition centers, parks and recreation areas, shops and one public facility. The units of analysis of this research are the children's physical environment. The data obtained were analysed both quantitatively and qualitatively. The study analyses questions like: "does our neighbourhood planning produce a child-friendly environment? Whether the environment in the study area can achieve independent mobility of children?"

## **5. Discussion and Findings**

### **5.1 Children's Perspective Checklist**

The children's perspective checklist was used to assess and describe the current situation in the study area. Table 2 shows the elements of each indicator that are included in the observation checklist. The assessment categorized the existing condition of all observation stations whether good, moderate or not in good condition. The observation stations cover:

- Residential areas (neighborhoods) – housing blocks on 10 streets (*Jalan P11K/2, Jalan P11H/1, Jalan P11B 1/6, Jalan P11A 1/14, Jalan P11/2A, Jalan P11F/1, Jalan P11E/3, Jalan P11D/1, Jalan P11D/6 and Jalan P11C/16*)
- Education (primary school and tuition center) - (*Sekolah Rendah Kebangsaan Putrajaya Presint 11 (1), Sekolah Rendah Kebangsaan Putrajaya Presint 11 (2), Sekolah Rendah Kebangsaan Putrajaya Presint 11 (3)* and a Tuition Center located at the neighborhood commercial center)
- Recreation and Park (playgrounds in the neighborhoods and a park i.e. *Taman Saujana Hijau*)

- Commercial area - (Local neighborhood shops)
- Public facility (*Pusat Kejiranan* - the neighborhood center in Precinct 11)

**Table 2: The Elements in the Observation Checklist**

<b>Observation Station (Indicator)</b>	<b>Percentage (%)</b>	<b>Elements</b>
Residential (neighborhood)	100	<ul style="list-style-type: none"> <li>- Street</li> <li>- Interaction</li> </ul>
Education (primary school and tuition center)	100	<ul style="list-style-type: none"> <li>- Entrance of school gates</li> <li>- Road that lead to the entrance</li> <li>- Distance from others indicator</li> <li>- Connection to the pedestrian walkways, cycle lane and zebra crossing</li> <li>- Accessibility control</li> </ul>
Recreation (park and playground)	100	<ul style="list-style-type: none"> <li>- Accessibility control</li> <li>- Interaction</li> <li>- Safety and security</li> <li>- Various facilities for children/disability people</li> <li>- Connection to the pedestrian walkways, cycle lane and zebra crossing</li> </ul>
Commercial area	50	<ul style="list-style-type: none"> <li>- Connection to the pedestrian walkways, cycle lane and zebra crossing</li> <li>- Accessibility control</li> </ul>
Public facilities ( <i>Pusat Kejiranan</i> Precinct 11)	50	<ul style="list-style-type: none"> <li>- Accessibility control</li> <li>- Interaction</li> <li>- Safety and security</li> </ul>

## **5.2 Neighborhood Environment**

As shown in Table 3, the analysis for the neighborhood environment focused on two elements which are the residential street and interaction. The assessment on the neighborhood environment shows that the highest score of child-friendly environment in terms of physical aspects is at *Jalan P11F/11* while highest score of child-friendly environment in terms of social aspect is at *Jalan P11A 1/14*. The residential blocks and the street at *Jalan P11F/11* fulfill the characteristics of a child-friendly environment based on the signages, playground, pedestrian path along the road, pedestrian path between the houses and pedestrian path surrounding the playground. These characteristics are shown in Figure 3. However, this street did not score high in terms of the social aspect.

**Table 3: Assessment of the Neighborhood Environment (Physical Aspects)**

<b>Indicator (Street)</b>	<b>Signage</b>	<b>Playground</b>	<b>Pedestrian Path along the Road</b>	<b>Pedestrian path between the houses</b>	<b>Pedestrian path surrounding the playground</b>	<b>Score</b>
<i>Jalan P11K/2</i>	4	3	2	4	5	18
<i>Jalan P11H/1</i>	3	-	4	-	-	7
<i>Jalan P11B 1/6</i>	4	-	3	3	-	10
<i>Jalan P11A 1/14</i>	4	-	3	2	-	9
<i>Jalan P11/2A</i>	3	4	4	3	5	19
<i>Jalan P11F/11</i>	4	5	5	5	5	24
<i>Jalan P11E/3</i>	4	-	4	4	-	12
<i>Jalan P11D/1</i>	3	3	5	4	4	19
<i>Jalan P11D/6</i>	4	-	5	5	-	14
<i>Jalan P11C/16</i>	5	5	4	4	5	23

Scale: **1** (Least Child-friendly); **2** (Low Child-friendly); **3** (Moderate Child-friendly); **4** (Child-friendly); **5** (Most Child-friendly)



**Signage**  
The signage shows the entrance of Jln. P11F/11. The condition of this signage is very good and clear.



**Playground**  
The condition of playground at neighborhood 5 is very conducive and well maintain. The streets along to this playground are connected to the neighborhood.



**Pedestrian beside playground**  
The streets of pedestrian around the playground are in good condition and connected to all pedestrian along this street and safe. The street furniture like a bench/seat is beside the pedestrian.

Photo 4.6: Jln. P11F/11

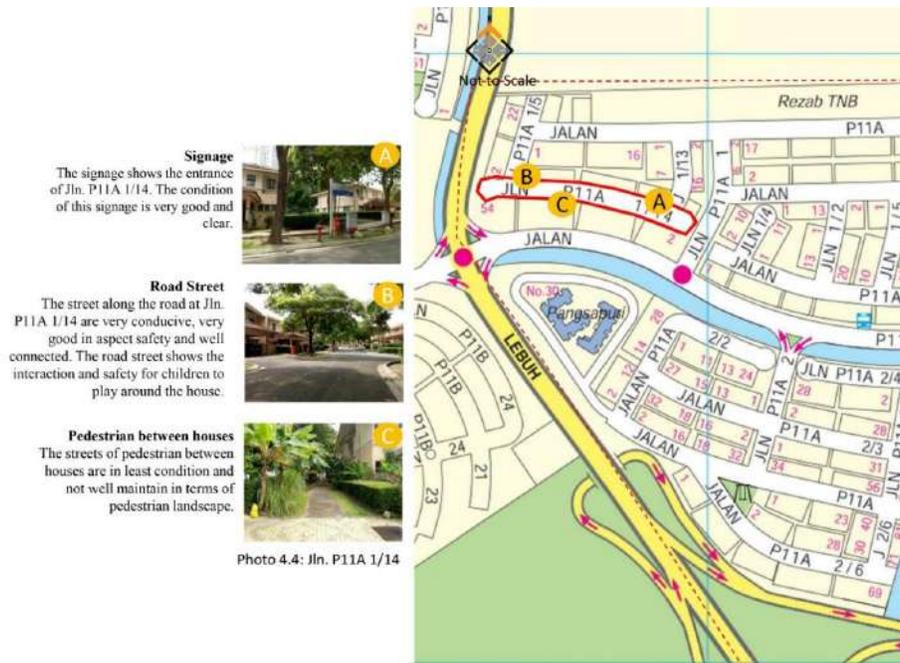
**Figure 3: Characteristics of Jalan P11F/1, Putrajaya**

Table 4 shows the assessment of the neighborhood environment in terms of social aspects. This assessment was related to the safety and security of children within the neighborhood areas. Feedback gathered from the respondents of the 10 streets showed a high satisfaction rate in *Jalan P11A 1/14*. Children and adult respondents in *Jalan P11A 1/14* claimed that they felt safe to be within their neighborhood areas. The interaction among neighborhood has created a sense of security and safety for the children to socialize, play and walking alone within their neighborhood. Figure 4 shows the characteristics of *Jalan P11A 1/14*, Putrajaya.

**Table 4:** Assessment of the Neighborhood Environment (Social Aspects)

Indicator (Street)	Child-friendly in terms of social aspect:			Score	Observation
	Perception on the safety level of children in their neighborhood area	Perception on the safety of children in their house and its surroundings area	Society's involvement in children's programs in the neighborhood area		
<i>Jalan P11K/2</i>	3	3	3	9	4
<i>Jalan P11H/1</i>	3	2	3	8	3
<i>Jalan P11B 1/6</i>	2	2	3	7	3
<i>Jalan P11A 1/14</i>	4	4	4	12	5
<i>Jalan P11/2A</i>	2	2	2	6	2
<i>Jalan P11F/11</i>	3	3	3	9	4
<i>Jalan P11E/3</i>	2	3	3	8	4
<i>Jalan P11D/1</i>	3	3	2	8	4
<i>Jalan P11D/6</i>	3	3	3	9	4
<i>Jalan P11C/16</i>	3	4	3	10	4

Scale: 1 (Very Dissatisfied); 2 (Dissatisfied); 3 (Slightly Satisfied); 4 (Satisfied); 5 (Very Satisfied)



**Figure 4:** Characteristics of Jalan P11A 1/14, Putrajaya

### 5.3 Education Environment

As indicated in Table 5, the analysis for the education environment is focused on four elements which are the entrance of school gates, the road leading to the entrance, the distance from home, shops, parks and playgrounds, and the connection to the pedestrian walkways, cycle lane and zebra crossing. The assessment of the four indicators on the areas outside *Sekolah Rendah Kebangsaan Putrajaya* Precinct 11 (1), *Sekolah Rendah Kebangsaan Putrajaya* Precinct 11 (2), *Sekolah Rendah Kebangsaan Putrajaya* Precinct 11 (3) and a tuition center at the commercial area shows that *Sekolah Rendah Kebangsaan Putrajaya* Precinct 11 (2) meets the criteria for child-friendly environment more than the other 2 schools and the tuition center.

Assessment of the areas surrounding the schools discovered that there are safety issues with regards to the connectivity between the pedestrian walkways, cycle lane and zebra crossing at *Sekolah Rendah Kebangsaan Putrajaya* Precinct 11 (3). There is also conflict between pedestrian, cyclists and vehicles. There are two zebra crossings in the study area. Both zebra crossings are along the precinct's main road. One zebra crossing has a traffic light while the other was not fixed with a traffic light. There were more users, mostly children who used the zebra crossing without the traffic light than the other crossing. This situation poses danger to children who pass through the major road daily on their way to school. Figure 5 shows the zebra crossing without traffic lights along the main road.



**Figure 5:** *The Zebra Crossing without Traffic Lights along the Main Road*

**Table 5:** Assessment of the Education Environment

Indicator	Entrance of School Gate	Road leading to the entrance	Distance from others indicator	Connection to the pedestrian walkways, cycle lane and zebra crossing	Score
<i>Sekolah Rendah Kebangsaan Putrajaya Presint 11 (1)</i>	4	5	5	3	17
<i>Sekolah Rendah Kebangsaan Putrajaya Presint 11 (2)</i>	5	5	4	5	19
<i>Sekolah Rendah Kebangsaan Putrajaya Presint 11 (3)</i>	3	3	3	2	11
Tuition Centre	4	3	4	3	14

Scale: 1 (Least Child-friendly); 2 (Low Child-friendly); 3 (Moderate Child-friendly); 4 (Child-friendly); 5 (Most Child-friendly)

#### 5.4 Recreation and Park Environment

Table 6 summarizes the assessment for playground and park environment. There are four elements being analyzed i.e. interaction, safety and security, various facilities for children/disable people and the connection to the pedestrian walkways, cycle lane and zebra crossing. There are several observation stations at the playgrounds and the park (*Taman Saujana Hijau*). Station point 2 of *Taman Saujana Hijau* and station point 2 of the playground at *Jalan P11A 5/8* were found to be the most child-friendly with a score of 14 and 19 respectively out of a possible score of 20. The main issue for park environment is about the lack of access facilities for people with disabilities and parents with small children with or without strollers. Figure 6 shows the playground at *Jalan P11A 5/8* Putrajaya.

**Table 6:** Assessment of the Recreation and Park Environment

Station Points	Indicators				Score
	Interaction/ Social aspect	Safety and Security	Various facilities for children /disable people	Connection to the pedestrian walkways, cycle lane and zebra crossing	
Point 1 (Taman Saujana Hijau)	3	2	1	4	10
Point 2 (Taman Saujana Hijau)	5	3	1	5	14
Point 3 (Taman Saujana Hijau)	3	1	1	3	8
Point 1 (Playground at Jalan. P11E/5)	5	5	4	4	18
Point 2 (Playground at Jalan. P11A 5/8)	5	5	4	5	19
Point 3 (Playground at Jalan. P11A 2/5)	3	3	5	5	16
Point 4 (Playground at Jalan. P11C/10)	3	2	3	2	10

Scale: **1** (Least Child-friendly); **2** (Low Child-friendly); **3** (Moderate Child-friendly); **4** (Child-friendly); **5** (Most Child-friendly)



**Figure 6:** Playground at Jalan P11A 5/8 Putrajaya

### 5.5 Commercial Environment

Assessment of the commercial environment as shown in Table 7 focused on two elements which are accessibility control and connection to the pedestrian walkways, cycle lane and zebra

crossing. Station point 2 of the local shops was found to be child-friendly with a score of 9 out of 15 possible score. Figure 7 shows the commercial environment in Precinct 11, Putrajaya.

**Table 7: Assessment of the Commercial Environment**

<b>Indicator</b>	<b>Connection to the pedestrian walkways, cycle lane and zebra crossing</b>	<b>Accessibility Control</b>	<b>Score</b>
Commercial Area (Point 1)	3	3	6
Commercial Area (Point 2)	5	4	9

Scale: **1** (Least Child-friendly); **2** (Low Child-friendly); **3** (Moderate Child-friendly); **4** (Child-friendly); **5** (Most Child-friendly)



**Figure 7: Commercial Environment in Precinct 11, Putrajaya**

### 5.6 Community Facilities Environment

Assessment of three elements for the community facilities environment (*Pusat Kejiranan* - the neighborhood center in Precinct 11) shown in Table 8 found that the area fulfills the child-friendly criteria well. Based on the observation survey, residents in Precinct 11, Putrajaya make full use of the neighborhood center including using it for recreational purposes. Figure 8 shows the *Pusat Kejiranan* in Precinct 11 Putrajaya.

**Table 8: Assessment of the Community Facilities Environment**

<b>Indicator</b>	<b>Interaction</b>	<b>Accessibility Control</b>	<b>Safety and Security</b>	<b>Score</b>
<i>Pusat Kejiranan Presint 11</i> (Neighborhood center)	5	5	5	15

Scale: **1** (Least Child-friendly); **2** (Low Child-friendly); **3** (Moderate Child-friendly); **4** (Child-friendly);  
**5** (Most Child-friendly)



**Figure 8:** *Pusat Kejiranan in Precinct 11 Putrajaya*

### **5.7 Summary of Findings**

Based on the analysis on residential areas (neighbourhood), education institutions (primary school and tuition centre), recreation area (park and playground), commercial area and a public facility in Precinct 11, Putrajaya, most areas are found to fulfill the child-friendly environment characteristics in terms of safety, scale, accessibility and integration.

However, there are some issues regarding the lack of social interaction among the residents in certain types of neighborhoods. This indicator is to understand the concept of child-friendly environment in terms of neighborliness which refers to daily interchange between people in the residential area. Based on the analysis of the neighborhoods and the recreation and park environment, the study found that the children in the medium-cost housing area are interacting with each other through play and socializing as opposed to the children in the high-cost housing area who tend to play in their own home.

Most parts of the study area allow children to achieve independent mobility. Analysis of the accessibility indicators within the radius of 1 kilometer at the residential areas (neighborhoods), recreation areas (park and playgrounds), education (primary schools and tuition center), commercial area; and public facilities (*Pusat Kejiranan*) in Precinct 11, Putrajaya shows that these areas have easy access and the places are interconnected. The street and access to a wider environment also provide independence to children.

## 6. Recommendations and Conclusion

Based on the findings, several recommendations to improve the existing condition in the study area are outlined. One of the strategies is to increase children's mobility in Precinct 11, Putrajaya by encouraging child-friendly transport mode like the "smart wheel" and campaigning for walking to school as it not only can save parents' time or money, but is also a healthier option. According to the observation and analysis in the study area, the facilities in Precinct 11, Putrajaya are well connected in terms of pedestrian walkways, cycle lane and zebra crossings. The lack of traffic lights at a zebra crossing along the main road at Jalan P11 near *Sekolah Rendah Kebangsaan Putrajaya* Precinct 11 (3) should be solved to reduce the risk of accident among users especially children who used the road to get to school.

Strategies to increase active socialization or "neighborliness" among residents in the neighborhoods is also crucial. Hashim (2005) stressed the importance of this aspect, stating that "efforts to improve neighborliness in today's urban community must be taken seriously because the social values in the urban areas are characteristically different than the rural community". One way towards this end is to promote residential layout and design that encourage interaction and involuntary encounters. In addition, strategies to make the residential streets lively through various activities like organizing outdoor games or having a potluck among residents living along the street is another option to increase neighborliness among residents. These measures could contribute to creating a child-friendly environment through increasing social cohesion and neighborhood integration.

The local authorities should also ensure neighborhoods in the urban areas like Putrajaya adheres to the principles of a child-friendly city outlined in the UNICEF Child-friendly cities initiative website (2018). Among others, the principles are to make children:

- Participate in family, cultural, city/community and social life.
- Live in a safe secure and clean environment with access to green spaces.
- Meet friends and have places to play and enjoy themselves.

This study is therefore important to improve the actions for making the urban neighborhoods more child-friendly. Future research in this area could look at barriers within the neighborhood and surrounding environment in pursuit of fostering children's independent and active mobility in their immediate surrounding and to evaluate the role of community groups to better provide opportunities and activities for the betterment of children within the

neighborhoods. Creating child-friendly neighborhoods is one of the many strategies towards achieving the United Nations' Sustainable Development Goals (SDGs).

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