

Affordances of Urban Housing Estate Mini-Park towards Physical and Social Activities of Senior Citizens at Taman Midah, Cheras

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Abstract By 2044, Malaysia will have been leaning towards an "aged society" with 14 percent of the population above 65 years of age. As such, it is increasingly important that public parks accommodate recreation activity for senior citizens, offering various passive and energetic outdoor activities. The physical element in public parks should complement the performance of certain activities. The seating area in an open environment is one of the physical features that must exist, accommodate and be a catalyst for another activity. A human can conduct an activity in several ways through possibilities provided by the environment, which is explained by the affordance hypothesis. Taman Bermain Taman Midah, a mini-park located in Cheras, Kuala Lumpur provides facilities to allow for outdoor activities. The study will include a literature analysis as well as observation of visitors to determine how they used the space at the mini-park and how it may provide both passive and active enjoyment to senior citizens.

Keywords Senior Citizen, Affordance, Park

with the two tendencies that define this era being urbanisation and ageing. Age-friendly institutions and towns are becoming more popular as the world's population ages. To encourage an active life that promotes continuous engagement in society, it is crucial to recognise the demands and requirements of the elderly, connecting it with architectural characteristics based on Maslow's Theory of Hierarchy of Needs, which allows evaluation of the spatial design and its components as well as exploring changes to support the well-being of the elderly [2].

Malaysia will have been on the verge of becoming an "aged society" by 2044, with 14% of the population being over 65. This percentage will rise to 20% by 2056, making Malaysia a "super-aged society" [3]. The National Senior Citizens Policy and the National Senior Citizens Action Plan were approved by the Malaysian government on 5 January 2011 to create independent, respectable, and dignified senior citizens by maximising their potential through healthy, constructive, and action-oriented ageing. The Malaysian government had further established action plans through the Ministry of Women, Family, and Community Development [4].

1. Introduction

By 2050, there will likely be 2,092 million elderly individuals living on the planet. Over the next 50 years, the amount of people in this age group will double [1],

1.1. Population Growth Rate in Malaysia

Malaysia's population is expected to increase by 0.4% annually from 32.5 million people in 2019 to 32.7 million people in 2020. The 0.33% reduction of non-citizens to 3.0 million from the year before is responsible for the

population growth rate slowing down in 2020. This is consistent with the closure of boundaries at all national borders and the government deportation of illegal foreign nationals under the Movement Control Order that was enacted after the COVID-19 epidemic swept over the planet. With the population increasing by 300 thousand people to 29.7 million in 2020 from the year before, Malaysia's population growth rate stagnated at 1.1% [5]. The forecast in Figure 1 indicates that this number will rise:

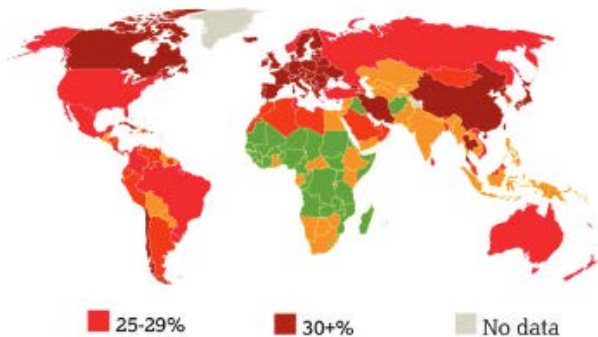


Figure 1. Projected proportion of world population aged 60 or over in the year 2050 [2]. Malaysia is in the 25-29% category.

From 32.4 per 1,000 people in 1970 to 16.7 per 1,000 people in 2015, birth rates decreased. From 4.9 in 1970 to 2.0 in 2015, the total fertility rate decreased. Higher education and later marriage contributed to declining birth rates and the total fertility rate. Couples who marry later tend to have fewer children. The opportunity cost of marriage increases when women receive more education and have more access to better work options; as a result, the proportion of single persons finally rises. This is a typical occurrence in industrialised nations. The impacts of late marriage have caused the mean age of a mother giving birth to grow from 26.6 in 2001 to 27.6 in 2015 [6].

1.2. Factors Leading to Increasing Senior Citizen Population

In Malaysia, an increase in the population of senior people can be attributed to longer life expectancies. Due to superior medical treatment, a healthy diet, and a high standard of living, the percentile of human life expectancy at birth increased from 61.6 in 1970 to 74.7 in 2016 [6]. According to Lindsay GB, et al. [7], public health historians and epidemiologists estimate that the majority of the rise in life expectancy over the previous 200 years was due to the eradication of infectious diseases, the availability of more plentiful and safe foods, improved hygienic conditions, and other non-medical social advancements.

The percentile of young age population as a proportion of the total population declined from 23.5 to 23.3 percent in 2019. While the overall proportion of people aged 15 to 64 (those in the labour force) fell from 69.8% in 2019 to

69.7% in 2020. This is because the number of non-citizens, who were primarily foreign employees, has decreased. While the population aged 60 years and over climbed from 3.4 million or 10.3 percent to 3.5 million or 10.6 percent during the same time, the proportion of the population aged 65 years and above (old age) increased from 2.2 million individuals or 6.7 percent to 2.3 million persons or 7.0 percent [5].

Because of this, the research generally focuses on elderly adults. Over the years, governments all over the world have launched several projects aimed at improving senior residents' quality of life and health [8-10].

1.3. Improving Way of Life

Cities are significant factors of future sustainability since they currently house more than half of the world's population and are expected to do so in the near future. Families in modern cities live in cramped quarters, endangering their health and wellness [11]. In such urban areas, the community is exposed to air contaminants such as Carbon Monoxide and Nitrogen Dioxide due to poor air circulation which affects and causes health problems [12]. Residents of Kuala Lumpur are similarly growing more prone to urban stress and mental tiredness as a result of the city's fast urbanisation and earlier subpar city planning. The populace craves solitude and tranquility as a way to get away from the busy surroundings. Residents frequently use the limited urban parks that are accessible to them as a place to recover; therefore the urban parks' restorative features are essential for improving quality of life [13].

Public parks are one place where individuals may find solace from their daily lives. Through the congruence of sound and visual impressions that affect how the environment is perceived in urban green space, parks not only enhance the physical and mental health of inhabitants but also boost the vibrancy of urban areas. Landscape and soundscape combine to improve the visitor experience in urban parks, by creating a safe bubble for visitors while they comfortably observe the surroundings [14,15].

1.4. Public Parks

Public parks might be a key component in encouraging physical exercise. They offer areas for people to jog or walk, and many feature facilities specifically for exercise, sports and other strenuous activities [16]. Way back in 1911, the "father" of urban parks, Fredric Olmstead [17], believed that parks should be created for city dwellers to enjoy the beauty of nature with clean air, have a place for "receptive" recreation (appreciating music and art) as well as engaging in "exertive" activities (for example, sports like basketball and games like chess), or, more recently, qigong [18].

Parks are crucial to creating and preserving the quality of life communities, safeguarding the health of families and children, as well as promoting the economic and

environmental well-being of a region and town, much as public safety, sewage and water are considered essential public services. Furthermore, a properly run and maintained park would present possibilities for all urban population groups to utilise the park more frequently [19].

1.5. The Affordance Theory

According to the affordance hypothesis, perception determines what can be done with an item (its affordances), rather than just how it looks or how it fits into its surroundings. In the absence of any sensory processing, affordances—explicit cues in the environment that point to possible courses of action—are sensed in an instantaneous, direct manner. Some examples include handles for pulling, knobs for turning, and buttons for pressing [20]. The affordance hypothesis offers a variety of consequences for design, human-nature interaction, etc. as a result of this [21]. This is especially true for this study, which is based on the aforementioned public park.

People between the ages of 66–75 were more inclined to frequent local parks compared to other age groups in the United States of America [22], Guangzhou [23,24] and Hong Kong [25]. This is possible as most people at this age group have more time for leisure. They are also more aware of their well-being and health due to age factor and poor quality of living environment [23,24].

This study also seeks to reinforce the statement that healthy ageing depends on health promotion including disease and injury prevention through good health maintenance via a healthy lifestyle and regular exercise [26], subsequently improving the quality of life and healthy ageing [27] while reinforcing the fact that an easily accessible public park such as Taman Bermain Taman Midah is necessary to prevent artificial separation of spaces in which the elderly conduct their daily activities, seeing the limited amount of spaces available in urban areas [28].

The ability of public parks like Taman Bermain Taman Midah to assist the government programmes may therefore be established. The role of public open space, open space physical elements, open space sitting, passive and active recreation, and affordance theory will all be evaluated in this study. The activities will place a strong focus on both passive and active leisure. Different activities will take place depending on the time of day and the age of the visitors. Taman Bermain Taman Midah will be the site of the research. Thus, this paper seeks to evaluate how park benches affect recreational activities in Taman Bermain Taman Midah using the affordance theory.

2. Methodology

First, a Literature Review was conducted on public open space, physical components of open space, sitting places in open space, passive and active recreation, and

affordance theory in order to fulfil the goal of this work. Following that, an Observation was conducted to identify the phenomena that occur on the location and to collect visual data in the form of photographs. Finally, the Discussion and Conclusion provides the way forward for further study on this research. The process is depicted in Figure 2 below:


No.	Process	Description	Flow
1	Literature Review	Sourcing of literature from reputable journals and websites, using keywords Senior Citizen, Affordance, Park	
2	Observation	A direct observation at Taman Bermain Taman Midah. The time of each person's admission and leave from the park, gender, age group, and the activities.	
3	Discussion and Conclusion	SPSS, the reliability test and multiple linear regressions can be used to assess internal consistency and pinpoint the variables affecting how often people visited public parks which are obtained from questionnaires or interviews	

Figure 2. Process Flow of the Research Methodology

2.1. The Observation

The concepts, strategies, practices, methodologies, and research approaches that make up the participant observation methodology are listed below. In the end, it seeks to provide theoretical and practical truths about human life that are rooted in the reality of everyday life. On seven separate days in 2022, a direct observation was to be conducted at Taman Bermain Taman Midah. The time of each person being in the park, age group, and the activities they engaged in while there were all noted. For this study that uses direct observation as a technique of data collecting, the placement of the observation site, observation timeframe, observer reliability, data recording and accuracy, and special difficulties connected to outdoor observation regions are taken into consideration. Direct observation can yield useful data [29]. The issues discussed in this paper will provide a useful guide for other researchers undertaking direct observation in outdoor environments.

2.2. General Information

Taman Midah is a township 5 kilometers from Bukit Bintang in Kuala Lumpur City Centre and serviced by Jalan Cheras and the Middle Ring Road 2. It houses Taman Bermain Taman Midah, a public mini-park located along the intersections of Jalan Midah 4A, Jalan Midah 4B, Jalan Midah 4C and Jalan Midah 4D, at the coordinates 3.1018404318980886, 101.73158361420109. It is located within the Cheras district as shown in Figure 3 below:



Figure 3. Location of Taman Bermain Taman Midah, marked with [x] in relation to Kuala Lumpur and Klang Valley [30].

It is roughly 20 meters wide by 100 meter long, making it a total area of 2,000 square meters. As this public facility falls under the jurisdiction of Jabatan Pembangunan Landskap dan Rekreasi, of Dewan Bandaraya Kuala Lumpur (DBKL), its official operating hours are from 6.30 a.m. to 10.00 p.m. during the Phase 4 of the Movement Control Order (Dewan Bandaraya Kuala Lumpur, 2022). However, Taman Bermain Taman Midah is freely accessible before the opening hours as there is no locked gate preventing residents, mostly senior citizens, from accessing the said public mini-park. The details of the park are listed in Table 1 below:

Table 1. Physical Conditions And Details Of Taman Bermain Taman Midah

Physical Conditions	Details
Area Size	2,000 square meters
Nearby Buildings	Single storey and double storey terrace houses
Parking Facilities	Vehicle road shoulder
Vegetation	Grass, Trees, Shrubs, Flowers
Water Element	None
Seating	Benches, spread sitting
Playground	1 slide and climber, 1 swing set
Jogging Track	Sharing with vehicle road
Zen Pathway	1
Picnic Bench	2
Field	1
Basketball Cum Badminton Court	1
Verandah	1
Outdoor Gym Equipment	2
Lamp Post	8
Flood Light	4

From the details listed in Table 1 above, it can be ascertained that this park has many facilities for activities.

First at the southern part of the park, there is a playground with 1 slide and climber combo and 1 swing set. There is also a zen pathway and 2 outdoor gym equipment located in the same area. This is the area where the grandchildren of senior citizens spent most of their time.

In the middle of the park, there is the basketball cum badminton court. During early morning before 8.00 a.m. it is used as a makeshift qigong exercise area by the senior citizens. From 8.00 a.m. onwards it serves its main purpose as a sports avenue for younger sports enthusiasts including friends and family.

At the northern part of the park, there is a mini grass field and the verandah. The surrounding roads serve as a walking, jogging and running track, which attract senior citizens. In February 2022, a revitalisation effort was carried out on Taman Bermain Taman Midah. The result was a fresher look for the basketball cum badminton court through a refurbishment and repainting job. Additional perimeter fencing was also installed around the mini-park for extra safety and security as shown in Figure 4 below.



Figure 4. Safety feature of perimeter fencing (photo credit to authors).

To summarise the details, it can be seen that Taman

Bermain Taman Midah has the right ingredients for a suitable park to cater to the lifestyle and activity requirements of senior citizens, citing the makeshift qigong exercise area and surrounding roads. This also proves and justifies the research information in the literature review section which can be expanded further by more in-depth research into this experiential research.

Figure 5 below provides pictures of Taman Bermain Taman Midah as previously deliberated above.



Figure 5. (Clockwise from top right) 1: Middle view of Taman Bermain Taman Midah; 2: Northern view of Taman Bermain Taman Midah; 3: Middle view of Taman Bermain Taman Midah; 4: Southern view of Taman Bermain Taman Midah (photo credit to authors).

3. Results

A direct observation was conducted at Taman Bermain Taman Midah over seven separate days in 2022. The time of each person being in the park, age group, and the activities they engaged in while there were all noted. It was also noticed that the same type of people will visit the place at the same time almost daily. The comfortable and safe environment contributes to this. This pattern is also observed as agency in animals, where the behavior of mechanically returning to an environment was highlighted by Withagen et. al. [31] and proven in this research.

In the early morning hours from 6.00 a.m. to 9.00 a.m., activities in the park are dominated by passive recreation, namely relaxing and sitting. Sitting activities are also accompanied by other activities which include observing other visitors, reading books, using mobile phones, chatting, and even eating. There are also qigong activities in small groups, with physical distancing as required by the Ministry of Health Malaysia [32]. Because of the distanced layout, visitors mostly move themselves and sit apart from one another. There is also natural shading from the surrounding trees. The wire fence provides safety to the visitors. The general demographic of visitors during this period are ethnic Chinese senior citizens. The demography is validated by the Nakanojo Study which proved that senior citizens get up before 6.00 a.m. and start brisk activities before their breakfast [33].

During the later part of the morning from 9.00 a.m. until early afternoon around 1.00 p.m., active recreation sports such as basketball are played by children and

young adults. The general demographics of visitors during this period are ethnic Chinese children and young adults.

From 1.00 p.m. to 7.00 p.m., there seems to be nobody using the park due to either the high temperature and hot sun, or heavy downpour later in the evening, which hampers outdoor activities. This is backed by McGregor's [34] that climate including human thermal comfort assessment and ultraviolet radiation (UVR) affects human activities which echo the findings where populations of cities in Asia avoid hot afternoons [23,25]. It was also noticed that there are zero visitors during rainy weather due to the open concept of the mini-park.

During the night from 7.00 p.m. to around 11.00 p.m., active recreation sports are carried out by children and young adults including playing basketball. The general demographics of visitors during this period are ethnic Chinese children and young adults. It was also observed that, due to being located in an open residential area, the low privacy makes visitors less comfortable staying too long in the area. The findings are summarised in Table 2 below:

Table 2. Summary Of Time, Activities And Visitors

Time	Activities	Visitors Observed		
		Senior Citizens	Young Adults	Children
Early morning (6.00 a.m. to 9.00 a.m.)	Passive recreation, qigong	✓	-	-
Morning to afternoon (9.00 a.m. to 1.00 p.m.)	Active recreational sports	-	✓	✓
Afternoon to late evening (1.00 p.m. to 7.00 p.m.)	No activities	-	-	-
Night (7.00 p.m. to 11.00 p.m.)	Active recreational sports	-	✓	✓

A set of photos in Figure 6 below shows the activities engaged by the visitors of the park:



Figure 6. (Top picture) Qigong session, (Bottom picture) Relaxation through chatting and sitting (photo credit to authors).

4. Discussion

As deliberated by Putriutrami et. al. [35], activities in the park were formed by physical elements, such as material and soft material which affect human movement.

The prospects generated by affordances allow humans to occupy space differently following the available physical environments, such as the sitting place and the basketball court. Open space sittings serve multiple purposes and accommodate a variety of activities including the practicing area for qigong in parks and public places [36]. This theory is proven in Taman Bermain Taman Midah. Concluding this observation, physical conditions including the material characteristics and layout are of highest importance which in turn significantly influences the comfort and method as to how activities are carried out. Subsequently activities are accommodated when characteristics, layout and expectations of the park are realised.

In Malaysia, an increase in the population of senior people can be attributed to longer life expectancies. Due to superior medical treatment, a healthy diet, and a high standard of living, life expectancy at birth increased from 61.6 in 1970 to 74.7 in 2016. Therefore, population plans for the aged must be divided into short-term and long-term development while taking into account the population's size, distribution, and locational dynamics. Additionally, it is advised that all future Malaysia Plans should prioritise development initiatives that monitor the unique requirements of the elderly, particularly those of citizens 60 years of age and older. Given that we are currently experiencing the "Silver Tsunami," researchers should be interested in this issue as quoted by Department Of Statistics Malaysia [6].

Moving forward, SPSS software, reliability test and multiple linear regressions would be recommended to assess internal consistency and pinpoint the variables affecting how often people visited public parks, which data can be obtained via questionnaires or interviews. The frequency of visitors to public parks served as the benchmark for measuring park utilisation. The observation data collection technique provides direct access to research phenomena, high degrees of application flexibility, and the development of a permanent record of events for future reference. The disadvantages of this strategy include the requirement for more time, high levels of observer bias, and the impact of observers on source data, which can affect how sample group elements behave. Nonetheless this should not be viewed as an opportunity rather than a weakness of this paper as it opens up avenues for future research into the matter.

5. Conclusions

To summarise the details, from the observations above it can be seen that Taman Bermain Taman Midah is a suitable park which meets the lifestyle and activity requirements of senior citizens, as they as the elderly make more use of the park as detailed in the different time segments monitored. According to the observations, comfort and safety are just as essential for this age group

when it comes to socialising outdoors, and in this instance the park. Their interconnected desires, perceptions, and wants are what drive the basketball court's transformation into a practising area for qigong. A more nuanced comprehension of these problems could result in design that is more suitable, comprehensive, and satisfying for all users. This paper provides the basis and avenue for researchers to explore and expand further the subject, which will be beneficial to understand further the global ageing society.

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