

The importance of neighbourhood parks in enhancing the mental and physical well-being of low-cost housing residents in the aftermath of the COVID-19 pandemic

Harith Mohmmad Zin¹, Nor Azlina Abu Bakar^{2*}, Aznida Azlan³

^{1,2,3} Faculty of Design and Architecture, Universiti Putra Malaysia, Serdang Malaysia

* ab_azlina@upm.edu.my

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The COVID-19 crisis resulted in a notable decline in the mental and physical well-being of residents in low-cost housing, primarily due to restricted living space and limited access to recreational activities. The significance of neighbourhood parks has increased in recent times due to their ability to fulfil the outdoor recreational requirements, thereby promoting mental well-being, provided that the attributes of the parks meet the residents' expectations. Thus, the present research examines the characteristics of neighbourhood parks that have an impact on the well-being of low-cost housing inhabitants during the period of post-COVID-19 movement limitations. The investigation utilised a qualitative research design consisting of three case studies conducted in low-cost housing areas located in Lembah Pantai, Kuala Lumpur. A purposive sampling technique was employed to select 15 participants for semi-structured interviews. Additionally, observations were carried out at various times and days to enhance the richness of the data. Thematic analysis was conducted on the interviews using ATLAS.ti v22, whereas manual analysis was performed on the field observation photographs. The research determined that the attribute of adaptability holds the highest significance, given its capacity to adjust and assimilate unforeseen disruptions, such as the COVID-19 pandemic. This study is to guide the planning and implementation of neighbourhood parks in low-cost housing areas, with a focus on adapting to the post-COVID-19 criteria.

Keywords: COVID-19, low-cost housing, neighbourhood park, urban poor, mental and physical well-being

1. INTRODUCTION

According to Krieger and Higgins (2002), individuals residing in urban housing with limited living space and inadequate social amenities are more likely to experience psychological distress, as reported by morbidity factors. Prior to the onset of the COVID-19 pandemic, the matter at hand was deemed of minimal consequence within impoverished urban populations, as they were confronted with more pressing challenges, such as the unaffordability of housing. The COVID-19 pandemic that emerged in December 2019 has had a significant impact on global health, causing widespread disruption to people's daily routines

for an extended period (Wai et al., 2021). Consequently, a majority of governments implemented limitations on mobility with the aim of slowing down the spread of infections (Ahmadpoor & Shahab, 2021). Extended periods of staying at home have had an impact on the mental and physical health of individuals.

According to Ho et al. (2020), the COVID-19 pandemic has led to a rise in sedentary behaviour among individuals, resulting in adverse effects on their emotional and physical well-being. Moreover, it has been found to trigger chronic ailments such as cardiovascular diseases, diabetes, and cancer (Patterson et al., 2018), as well as

mental health disorders like depression and anxiety (Rebar et al., 2015).

The United Nations (2023) has reported a notable prevalence of mental disorders among the global populace during the COVID-19 pandemic, which can be attributed to the disruption of daily routines (National Institute of Mental Health, 2018). According to Cheng et al. (2021), amidst the pandemic, there is value in visiting public open spaces. Shoari et al. (2020) disclosed that individuals with low incomes have limited options for outdoor spaces that are both cost-free and easily accessible. These spaces serve as means of stress relief and recreational activities. Notwithstanding the advantages, individuals were constrained from accessing it, despite the significance of its utilisation (Ahmadpoor & Shahab, 2021; Cai et al., 2022). Prior to the onset of the pandemic, it was observed that neighbourhood parks located in low-income housing areas were not being utilised to their full potential due to factors such as inadequate maintenance and limited accessibility (Bakar et al., 2016; Ismail & Azili, 2019; Kowaltowski et al., 2006). Additionally, these parks were often overcrowded due to spatial constraints (Azmi, Ruslee, Adilah, et al., 2019; Zainal et al., 2012), and safety concerns were also noted (Alwah et al., 2021).

Ekawati et al. (2020) demonstrated that the satisfaction and utilisation of neighbourhood parks can be enhanced by incorporating attributes that are preferred by the local community. Furthermore, it is imperative to engage in public consultation in the context of post-COVID-19 cities, given that residents are subject to evolving environments. Consequently, it is imperative to examine the characteristics of local parks in accordance with the inclinations of low-income housing inhabitants, with the aim of promoting utilisation and enhancing the psychological and physical welfare of individuals in this arduous urban setting following the COVID-19 pandemic. Despite the extensive research conducted on the attributes (Nath et al., 2018), their scope was restricted to the identification of the preferences of individuals with low-income backgrounds, particularly in urban areas affected by the COVID-19 pandemic. Additionally, Park (2020) revealed that research on the attributes of neighbourhood parks often fails to consider the contextual factors of the neighbourhood, such as the presence of a low-income population, and has

yet to reach a consensus on the ways in which neighbourhood characteristics affect park usage.

2. LITERATURE REVIEW

Neighbourhood Park

Typology and classification systems are used to categorise public open space. The typology categorization pertains to the classification of open spaces based on their external features, such as parks, natural areas, school grounds, and residual green spaces, without considering their internal characteristics, as stated by Wood et al. (2017). The open space was classified by the classification system according to catchment hierarchy, function, and environmental characteristics. The concept of catchment hierarchy pertains to the extent to which individuals are willing to travel to access open spaces, the geographical area served, the dimensions of the open space, the degree of utilisation, and its level of importance (Nochian et al., 2015). According to this classification, a neighbourhood park is defined as an open area of approximately two hectares that caters to a population of 3,000 to 12,000 individuals (refer Figure 1).

Hierarchy	Size (ha.)	Population Catchment
National	Unlimited	National
Regional	100	Regional
Urban	40	> 50,000
Local	8	12,000 - 50,000
Neighbourhood	2	3,000 - 12,000
Playing Field	0 - 0.6	1,000 - 3,000
Playground	0 - 0.2	300 - 1,000
Roof Garden	Varies	Target Group

Figure 1: Public Open Space Classification
Source: (Nochian et al., 2015)

The definition of open space in Malaysia is stipulated in Section 2 (1) of the Town and Country Planning Act 1976 (Act 172). It encompasses any land, whether enclosed or unenclosed, that is designated for public use or reserved for such use, either wholly or partially. Examples of such usage include public gardens, parks, sports and recreational fields, tourism areas, pathways, and public places.

Planning Guideline for Open Space

The allocation of open space in Malaysia is governed by the Town and Country Planning Act 197 (Act 172), which stipulates that any development must reserve ten percent (10%) of its area for open space.

Notwithstanding, individual local authorities possess the ability to implement a policy that is tailored to their specific local circumstances, which may be based on a variety of factors, including a broad approach, the spatial ergonomics, the quantity of residential units, and the scale of the development (Dali et al., 2014). The regulation of open space in Kuala Lumpur is not restricted by previous guidelines but rather governed by the Federal Territory Act 1982 (Act 267), which is also applicable to Putrajaya and Labuan, as noted by Dali et al. (2014) and Maidin & Mobarak Ali (2009). As per the guidelines outlined in the Construction Industry Development Board (CIDB) Malaysia specification CIS 2: 1998 for low-cost flats, it is mandatory for the management to furnish neighbourhood parks in the residential vicinity to serve as a community facility for diverse outdoor activities (National Housing Department, 2020).

According to KLCH (2020), the prescribed limit for the construction of low-cost housing is 70% of the total area, while the remaining portion is designated for the development of local parks. As per the Kuala Lumpur Structure Plan 2040, an additional 4,500 hectares of open spaces are required in Kuala Lumpur to cater to the projected population of 2.25 million by the year 2040 (KLCH, 2020). The allocation of additional open space to accommodate the expanding urban population and low-cost housing remains a pending matter.

The significance of neighbourhood parks in promoting the well-being of low-cost housing residents

According to Zhang et al. (2020), individuals residing in urban areas are susceptible to physical hazards, infectious diseases, and non-communicable diseases owing to their sedentary lifestyle and mental health issues, which may manifest as early as adolescence (Fleckney & Bentley, 2021). The presence of vulnerability factors has the potential to negatively impact the overall well-being and mental health of the population. According to Barton and Grant (2006), public areas such as local parks play a crucial role in promoting human health and overall well-being. Amidst the proliferation of diverse disorders, the local park presents a promising avenue for urban revitalization and the mitigation of the issues, particularly within socioeconomically disadvantaged communities (Chong et al., 2020).

The impact of poor health on individuals' capacity to engage in livelihood activities and generate income is well documented. Consequently, the loss of such opportunities can trigger a detrimental cycle of poverty, as noted by Mphande (2016). In addition, affordable housing options often have restricted interior spaces, which can lead to overcrowding and have negative effects on the occupants' overall health and wellness (Azmi et al., 2019). Therefore, it is possible that local parks could offer additional opportunities for outdoor recreation and serve as a means of mitigating stress. Additionally, the necessity for community parks within affordable housing developments is attributed to the socioeconomic status of their inhabitants, who predominantly belong to the urban underprivileged demographic.

According to Omar et al. (2017), individuals possess limited ability to avail themselves of external open areas, which may necessitate additional charges and require personal transportation. Thus, the provision of neighbourhood parks in residential areas is crucial to enabling inhabitants to derive optimal advantages for their overall well-being. The COVID-19 pandemic has brought to light the crucial necessity of neighbourhood parks for individuals residing in low-cost housing. The outbreak that began in December 2019 has had a significant impact on global health, caused disruptions to daily life, and had adverse effects on livelihoods (Mak & Koh, 2021). Governments have implemented lockdown and movement control orders as a non-pharmaceutical preventive measure to contain infectious diseases, as observed in Malaysia and other countries (Ahmadpoor & Shahab, 2021). The implementation of lockdown measures has impeded individuals from accessing communal spaces, such as retail establishments and local parks, with the aim of minimising physical interactions.

Moulay and Daouia (2020) assert that, notwithstanding the implementation of safety measures, it is imperative that open spaces remain accessible to the public, as they serve as a means of stress relief and physical well-being for the community. The sudden obstruction of social activities and visits to high-density areas has led to a relatively high demand for outdoor activities. As suggested by Cheng et al. (2021), nearby neighbourhood parks may be a viable option for individuals seeking such activities. According to

Shoari et al. (2020), the closure of public parks in Paris led to overcrowding in other areas, which undermined the objective of the lockdown to reduce human congestion. Thus, the availability of local community parks provides a cost-free and easily accessible location for leisure pursuits while also mitigating issues related to excessive crowding.

Issues of Neighbourhood Parks in Low-cost Housing

According to Park (2020), the optimal utilisation of neighbourhood parks is necessary for their users to fully benefit from them. The utilisation of neighbourhood parks in low-cost housing has been found to be influenced by various issues that are associated with poor health status, as reported in the literature (Bakar et al., 2016). According to Ismail et al. (2019), the design of neighbourhood parks was found to be lacking, which may have contributed to a reduced sense of appreciation among residents for the facilities and a decreased willingness to maintain them. The insufficiency of space in neighbourhood parks results in overcrowding, thereby compromising the quality of outdoor recreational activities (Azmi et al., 2019). This situation arises due to the implementation of guidelines that only meet the minimum requirements without taking into account the high-density population residing in the neighbourhood (Latfi et al., 2012).

Additionally, Bakar et al. (2016) reported that these sites were deemed inaccessible, resulting in a decrease in visitation. Kowaltowski et al. (2006) revealed that the neighbourhood parks located in low-cost housing areas in Campinas, Brazil, are positioned beyond the acceptable walking distance, which results in residents' dissatisfaction. According to Byrne and Sipe's (2010) assertion, the significance of accessibility to neighbourhood parks cannot be overstated in this housing context, as residents are unable to afford outdoor leisure activities that are essential for their overall well-being.

The presence of inadequate facilities has been observed to discourage visitation, particularly among children, as facilities that promote active recreation and sports are deemed more desirable in literature (Cohen et al., 2016; Flowers et al., 2019). In addition, the act of designing neighbourhood parks without taking into account the preferences of the local users may result in underutilization, as evidenced by studies

conducted by Austin et al. (2021), Jamhawi et al. (2020), and Padial-Ruz et al. (2021).

However, there has been a lack of research on the utilisation of neighbourhood parks in low-income areas, as noted by Park (2020). In contrast, Ekawati and colleagues (2020) revealed that involving local users' preferences in the planning and design of neighbourhood parks resulted in higher satisfaction levels and increased visitation rates as the desired attributes were successfully attained. Hence, it is imperative to conduct a research study pertaining to the desirable attributes of neighbourhood parks while taking into account the characteristics of low-cost housing neighbourhoods.

Additionally, the COVID-19 pandemic has served as a catalyst for the inclusion of nearby neighbourhood parks in the initial design phase, as noted by Ahmadpoor and Shahab (2021). The post-pandemic shift in societal living patterns has resulted in novel approaches, configurations, and applications in the realm of open space arrangement. The urban centre ought to emphasise the ways in which its spaces can effectively fulfil the requirements and desires of its inhabitants. According to Cheng et al. (2021), there is an increased recognition and valuation of high-quality open spaces within local communities during the current post-pandemic period.

Therefore, it is imperative to take into account the attributes that are preferred by local users while designing neighbourhood parks in cities that have been affected by the COVID-19 pandemic. This will not only ensure the creation of high-quality parks but also enhance their utilisation.

Characteristics of Neighbourhood Parks in Affordable Housing in a Post-COVID-19 Urban Setting

It is imperative for designers and urban planners to allocate neighbourhood parks in order to promote the well-being of local residents. Carmona (2015), Ekawati et al. (2020), Fatiah et al. (2021), and Currie (2017) expounded upon the characteristics of open space provision, with certain constituents exhibiting similarities across the authors' works. The present study acknowledges COVID-19 as a factor that renders residents vulnerable to the well-being of others. Consequently, the associated attributes have been illustrated in Figure 2. The characteristics pertaining to the provision of open space were

validated through fieldwork and interviews conducted with professionals such as landscape architects, park officials, and park users in various regions, including the Southeast, Mid-Atlantic, North-Eastern United States, Indonesia, and Malaysia.

Currie (2017)	Carmona (2015)	(Ekawati et al., 2020)	(Fatiah et al., 2021)
Accessibility	Balanced, Free	Democratic	Accessibility
Specificity	Robust	Meaningful	-
Authenticity	Meaning	-	Attractiveness
Adaptability	Robust	-	Attractiveness
Functionality	Social, Engaging	Responsive, Democratic	Functionality, Safety

Figure 2: Neighbourhood Park's Characteristics

The concept of “accessibility” pertains to a geographical location that can be conveniently accessed by a diverse range of users from their respective residential areas. The distance to be traversed on foot must be comfortable, as established by Heo et al. (2021). The assessment of a given entity is determined by various factors such as the degree of convenience, safety, usability, independence (Aini et al., 2019), and entrance fees (Heo et al., 2021). Currie (2017) expounded on the concept of “specificity”, which

pertains to the design's ability to specify its intended users and location and underscore the interdependence between the place and its users. The selection of a location ought to be based on

its historical, cultural, geographic, or sociodemographic importance to the community it serves.

The concept of “authenticity” pertains to the genius loci of a space that is closely linked with specificity. The relevance of a space is determined by its context, which in turn provides the necessary activities required by its users or parks that showcase indigenous flora (Currie, 2017). The concept of “adaptability” provides valuable insight into the sustainability of a given space. Specifically, it suggests that a space should be designed to evolve and expand in response to the forces and actions of the surrounding neighbourhood. The term “functionality” pertains to the capacity of a system to be responsive and durable in generating a functional area that can cater to the requirements of its users (Currie, 2017; Ekawati et al., 2020). The study conducted by Fatiah et al. (2021) demonstrates the manner in which users perceive and utilise space concerning the diverse features that are available. The attachment that users develop towards the space

is contingent upon their functional engagement with it, as highlighted by Stessens et al. (2017).

3. METHODOLOGY

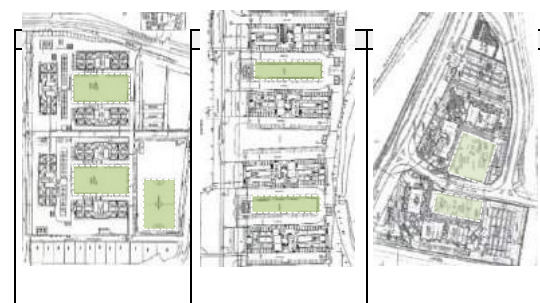
Study Area

NP	Housing Area	Number of		
		Unit(s)	Block(s)	Floor(s)
1	PPR Kerinchi, Lembah Pantai	1896	6	17
2	PPR Pantai Ria, Lembah Pantai	1264	4	17
3	PPR Sri Pantai, Lembah Pantai	936	2	22

*NP: Neighbourhood Park

Figure 3: Case Study Area

Source: (KLCH, 2023)



Number of Neighbourhood Park(s)		
3	2	2
Total Size of Neighbourhood Park(s)		
1.82	0.32	0.44

Figure 4: Neighbourhood Parks

Source: (KLCH, 2023)

Figures 3 and 4 provide a comprehensive depiction of the case study sites. The present investigation employs a multi-case study approach to examine three neighbourhood parks (NP) located in low-cost housing areas in Lembah Pantai, Kuala Lumpur, specifically PPR Kerinchi, PPR Pantai Ria, and PPR Sri Pantai. The chosen case study areas are deemed suitable as they offer a controlled environment with respect to low socioeconomic status (SES). The categorization of leisure amenities encompasses local parks with an area of less than two hectares as well as the proximity of such parks within a walking distance of 300 to 400 metres from residential areas.

In addition, it is noteworthy that these parks fall under the purview of Kuala Lumpur City Hall (KLCH) and are subject to the mandatory provisions of CIS 3:2005. This regulation mandates the provision of neighbourhood parks to facilitate outdoor activities, social interaction, and recreational pursuits for residents (National Housing Department, 2020). Consequently, these parks conform to standard design practises.

Method of Data Collection

The present investigation employed a qualitative research methodology to examine the desirable characteristics of local parks as perceived by residents of low-income housing. The research methodology employed in this study involved semi-structured interviews with residents of low-cost housing and field observations conducted between February and March of 2022. Fifteen (15) respondents were subjected to semi-structured interviews, with five (5) respondents being interviewed at each site. In order to elicit preferences regarding neighbourhood parks as proposed by Addas and Maghrabi (2021), the respondents approached are exclusively individuals who utilise neighbourhood parks.

The authors conducted field observations in neighbourhood parks within the case study area on various days and times to investigate the features and utilisation patterns of these parks (Addas & Maghrabi, 2021; Al-Fadala & Fadli, 2020). High-resolution photographs of the site were taken to enhance the observational data, which Creswell (2014) referred to as qualitative visual materials. The findings from both research investigations can be utilised to juxtapose and analyse the data gathered.

Data Analysis

The interview sessions were documented and subsequently subjected to thematic analysis using ATLAS.ti v22 software, as per standard academic practise. The analytical procedure encompassed a number of crucial stages, which included the identification of quotes through the coding of the transcripts, the cleansing of the transcripts to ensure the accurate allocation of each quote to the relevant code, the categorization of codes into distinct categories, the grouping of pertinent categories into themes, and the interpretation of the interrelationships between the themes to present the findings, as per Saldana's (2013) guidelines. Furthermore, Zairul (2020) employed the ARC methodology to obtain dependable interview outcomes in a timely manner through the process of posing questions, documenting responses, and verifying the results with the participants. Concurrently, data obtained from on-site observations and photographic documentation were manually analysed.

4. RESULTS AND DISCUSSION

The present research aims to examine the attributes of neighbourhood parks that are preferred by low-cost housing residents in cities post-COVID-19, with a view to enhancing their mental and physical well-being. The utilisation of preferred criteria has the potential to enhance the calibre of existing neighbourhood parks in low-cost housing developments. The attributes of accessibility, specificity, authenticity, adaptability, and functionality are utilised to examine the criteria of neighbourhood parks.

Accessibility

According to the data presented in Figure 5, it can be observed that the three local parks are situated within a radius of 300 metres from the residential blocks, which can be traversed in approximately ten minutes on foot. The sole distinction lies in the fact that certain inhabitants may traverse a greater vertical distance compared to those residing on lower floor tiers, utilising the available lifts or stairwells. According to Heo et al. (2021), the proximity of neighbourhood parks is deemed satisfactory, and individuals are inclined to frequent such parks within the given distance. Additionally, it was noted that the availability of non-gated parks and activities without fees may have an impact on visitation rates, as the area remained open and accessible without restriction.

Attribute: Accessibility			
Criteria	PPR Kerinchi	PPR Pantai Ria	PPR Sri Pantai
Walking Distance	Located within walking distance of about 300m		
Non-gated	Non-gated and accessible at all times		
Non-fee-activities	Non-fee-based activities		
Curb ramp	Curb ramps were absent		
Pathway	Broken pathway due to elongated tree roots		
	PPR Kerinchi	PPR Pantai Ria	PPR Sri Pantai
			
No curb ramp to neighbourhood parks			

Figure 5: Assessment of Accessibility
Source: Fieldwork (2022)

Specificity

According to the data presented in Figure 6, PPR Kerinchi has the largest total area of

neighbourhood parks, measuring approximately 1.82 hectares. This is followed by PPR Sri Pantai, which has an area of 0.44 hectares, and PPR Pantai Ria, which has an area of 0.32 hectares. According to the interview data, a majority of the participants expressed agreement with the adequacy of their local parks. Notwithstanding the substantial populace and utilising a standard of 20 square metres of open space per individual by 2040, as stipulated by KLCH (2020), the allocated area was deemed inadequate. This is analogous to the circumstances in the Klang Valley (Azian et al., 2020) and Jordan (Jamhawi et al., 2020).

Size of Neighbourhood Park	
Perception	Percentage of respondents (%)
Sufficient	53.33
Insufficient	46.67
Total	100

Figure 6: Neighbourhood Parks Size
Source: Fieldwork (2022)

Based on the data provided by the Department of Statistics Malaysia (DOSM) in 2020, the average household size in Malaysia is 3.8 individuals per household. In order to attain the target of 20 square metres per person, as illustrated in Figure 7, it is necessary to increase the amount of living space available. Therefore, the level of specificity is insufficient, as the dimensions of the local park fail to adequately cater to the substantial low-income housing demographic.

Attribute: Specificity			
Criteria	PPR Kerinchi	PPR Pantai Ria	PPR Sri Pantai
Size	Size of existing neighbourhood parks		
	1.82	0.32	0.44
	Total population (house units x 3.8 people per household)		
	1,896 x 3.8=7,204.8	1,264 x 3.8=4,803.2	916 x 3.8=3,480.8
	Open space area (sqm) / residents		
	2.52	0.67	1.26
	Targeted open space per person (sqm)		
	20.00	20.00	20.00
	Open space needed per person to achieve the target (sqm)		
	17.47	17.47	18.74

Figure 7: Assessment of Specificity
Source: Fieldwork (2022)

Authenticity

The concept of authenticity has been linked to the appeal of a location (Fatiah et al., 2021) and contributes to the significance that its visitors attach to it (Carmona, 2015), primarily by offering desired experiences (Currie, 2017). The study conducted by Fatiah and colleagues (2021) established a correlation between the perception of attractiveness and the allocation of vegetation as well as overall maintenance. According to the

data presented in Figure 8, the planting of trees along the periphery of neighbourhood parks serves the purpose of offering natural shading on days with high levels of solar radiation while also contributing to the creation of a tranquil and peaceful atmosphere.

The optimisation of vegetation allocation can be enhanced through the maintenance of tree continuity, thereby maximising shaded areas that promote favourable thermal comfort for users. However, it is worth noting that Neighbourhood Park 2 at PPR Sri Pantai exhibited adequate tree coverage, effectively providing ample shaded space. Cheung et al. (2021) have noted that the presence of vegetation shading can improve the microclimate in the surrounding area and mitigate the warming effects on the adjacent region. However, it is important to ensure regular maintenance of the vegetation, as overgrown shrubs may compromise visibility and safety, as previously highlighted by Zeinab Aliyas (2017). The criteria for maintenance are elaborated upon in the adaptability segment.

Attribute: Authenticity			
Criteria	PPR Kerinchi	PPR Pantai Ria	PPR Sri Pantai
Attractiveness (Vegetation and maintenance)	Trees are planted at the perimeter but must ensure continuity to motivate utilization. Trees were well-maintained except for the roots that elongated to the pathway and made it broken		
Activities (Social Interaction)	Limited gazebos and seating area were provided	Limited seating area at the perimeter	Limited gazebos and seating areas were provided

Figure 8: Assessment of Authenticity
Source: Fieldwork (2022)

Adaptability

The evaluation of adaptability is conducted by analysing the preservation of characteristics, sanitation, and responsiveness of local parks to external disturbances, as depicted in Figure 11. According to Figure 9, the maintenance of the neighbourhood parks was inadequate, as evidenced by the presence of detrimental features such as broken and severed swings, collapsed fences, muddy flooring, and uneven pavement caused by the proliferation of tree roots. Furthermore, a majority of 66.67% of participants hold an unfavourable view regarding maintenance.

The findings indicate that impaired features have the greatest influence on utilisation, accounting for 21.43% of the total impact (see Figure 10). Sefcik et al. (2019) and Bakar et al. (2016) have documented that inadequate neighbourhood parks in low-income areas of

Philadelphia and Malaysia, respectively, have resulted in their underutilization.

The findings of the interviews indicate that the situation persists despite the submission of reports to the relevant authorities, which demonstrate that the local parks are not resilient to external disturbances in the form of damage. In terms of sanitation, all locations were deemed satisfactory, with custodial staff observed performing floor sweeping duties in the morning. However, it was noted that litter was present on the premises during the evening hours. However, a mere 7.14% of the participants were impacted and subsequently decreased their usage (see Figure 10).

Neighbourhood Park Maintenance	
Perception	Percentage of Respondents (%)
Positive	20.00
Moderate	13.33
Negative	66.67
Total	100

Figure 9: Maintenance of Neighbourhood Parks
Source: Fieldwork (2022)

Furthermore, the importance of flexible neighbourhood parks cannot be overstated in cities that have been impacted by the COVID-19 pandemic, as they enable the space to be utilised while adhering to safety protocols. The study participants indicated that their ability to visit local parks was impeded by measures implemented by governing bodies to mitigate the spread of the illness as well as by the limited area available for maintaining appropriate physical distance. The impeded access to local parks has had an adverse impact on the physical and psychological welfare of inhabitants, as per the findings of the Department of Statistics Malaysia (2021).

Factors affecting visitation	Percentage of Respondents (%)
Personal Factors (14.29)	
Lack of time /preferences	14.29
Physical Factors (28.57)	
Low cleanliness	7.14
Damaged features	21.43
Social Factors (38.09)	
Accompany children	19.05
Permission from the caretaker	2.38
Gathering with family/ friends	9.52
Concern on safety (incivilities, COVID-19)	7.14
Environmental Factors (19.05)	
Weather/ Climate	19.05
Total	100

Figure 10: Factors Influencing Utilisation
Source: Fieldwork (2022)

Hence, this research underscores the significance of flexible community parks as a crucial factor that necessitates contemplation in contemporary urban planning, among other characteristics. Adaptable neighbourhood parks possess the capacity to modify their purpose and exhibit readiness to accommodate future environmental changes, including but not limited to the COVID-19 pandemic. According to El Khateeb and Shawket (2022), an adaptable neighbourhood park could potentially have a larger physical footprint in order to accommodate a larger population and mitigate the spread of potential diseases. Neighbourhood parks located in low-cost housing areas encountered the challenge of restricted land availability, which resulted in a deficiency of expansive open spaces. Thus, there is a requirement for a substitute that can cater to the changing needs of a local park.

Malonza (2020) reported that in Kimisange, Rwanda, public spaces for recreational activities were created by utilising neighbourhood streets. According to Shoari et al. (2020), the public was granted access to school fields and golf courses located in London. The implemented strategies serve to supplement the restricted availability of local park areas while concurrently facilitating the practise of social distancing. An additional approach entails increasing the occupiable area at the structural level to alleviate congestion. As suggested by Seo (2022), it is possible to convert the lift lobby and staircases into an aesthetically pleasing area, thereby establishing a novel informal space.

Moreover, the interstitial areas designated for motorcycle parking could be repurposed as additional open spaces. According to the findings of the interviews conducted, the respondent disclosed that the noise generated by the motorbike at night caused disturbance to the inhabitants. Therefore, the transformation into an open space has the potential to mitigate the issue and increase the amount of open space in the surrounding area. According to Ahirrao and Khan (2021), the perceived safety of the area could potentially encourage residents to utilise and enhance it. Hence, it is imperative to design flexible community parks that can effectively

respond to forthcoming modifications, thereby ensuring a sustainable and enduring environment.

Attribute: Adaptability			
Criteria	PPR Kerinchi	PPR Pantai Ria	PPR Sri Pantai
Maintenance	Poor quality features, only a few are available		
Cleanliness	Acceptable as cleaners were observed sweeping the floors; however, trash was found at night		
Flexibility	All were closed during movement restrictions to curb the disease, although residents need to go out for recreation and outdoor activities		

Figure 11: Assessment of Adaptability
Source: Fieldwork (2022)

Functionality

According to studies conducted by Berdejo-Espinola et al. (2021) and Kleeman et al. (2020), neighbourhood parks situated in low-cost housing areas were commonly perceived as outdoor recreational spaces and social gathering areas. The functionality depicted in Figure 12 is linked to characteristics such as the provisions and accommodations accessible for their designated uses. Neighbourhood parks typically exhibit a range of shared characteristics, including but not limited to concrete pathways, seating areas, pavilions, outdoor dining accommodations, arboreal canopies, illumination fixtures, perimeter barriers, verdant expanses, athletic facilities, and recreational spaces designed for children. The neighbourhood parks are deemed appropriate for their intended purposes of outdoor recreation and socialisation based on the available features. Nonetheless, it appears that the neighbourhood parks were insufficiently equipped with suitable amenities, and only a select few were deemed to be of high calibre, thereby impacting their level of visitation (see Figure 9). This discovery bears resemblance to the study conducted by Flowers et al. (2020), wherein users with inferior features were removed. Ahmadpoor and Shahab (2020) asserted that the mere availability of a resource does not necessarily guarantee its full utilisation and realisation of its potential benefits. Hence, the provision of characteristics ought to be accompanied by excellence to foster increased utilisation.

In addition, the provision of versatile amenities has the potential to enhance the number of visitors across different age groups, as evidenced by the findings of Fatiah et al. (2021). This can also contribute to the perception of the local park as a communal space for social interaction. The ownership of neighbourhood parks also contributes to ensuring optimal functionality. The sites were identified as being under the ownership

of the municipality, and it is the responsibility of KLCH to manage and maintain them with little or no involvement from the local communities. The provision of financial funding for maintenance by the municipality may pose a burden (Hamdy & Plaku, 2021) and potentially lead to suboptimal quality in study areas. The degree of safety perceived by individuals was found to be closely linked to the effectiveness of the spatial design in creating a secure environment. Only 7.14% of the participants (see Figure 10) expressed feelings of insecurity within the premises, which can be attributed to the consistent surveillance conducted by security personnel from the adjacent police station, the national anti-drug agency, and the neighbouring community. Instances of social misconduct, such as acts of vandalism, drug dependency, and interpersonal conflicts, have been observed to decline over time, albeit with a few exceptions.

Attribute: Functionality			
Criteria	PPR Kerinchi	PPR Pantai Ria	PPR Sri Pantai
Features Availability	Inadequate features available for various ages, lacking adults' equipment		
Governance	Under municipality ownership which financially dependent on KLCH for maintenance		
Safety	Incivilities are reduced, but few remain and reduce perceived safety, especially among parents		

Figure 12: Assessment of Functionality
Source: Fieldwork (2022)

5. CONCLUSION

The results of this study provide valuable insights into the park characteristics that are preferred by low-cost housing residents in urban areas following the COVID-19 pandemic. These insights can be used to promote physical activity and enhance both mental and physical health. The present study endeavours to fulfil the understanding that each neighbourhood park is unique in its contextual characteristics, particularly in low-income neighbourhoods. Consequently, it is imperative to conduct a distinct evaluation of their inclinations, given the scarcity of leisure facilities and the dissimilarities in their requirements relative to individuals residing in affluent socioeconomic neighbourhoods. The results indicate that evaluating the dimensions of accessibility, specificity, authenticity, adaptability, and functionality is crucial for enhancing the overall standard of local parks in accordance with the inclinations of the inhabitants. The present study highlights the significance of the attribute of adaptability in the context of neighbourhood parks, as it pertains to their ability to function

effectively in the post-pandemic urban landscape and provide advantages to local inhabitants. The findings of this study suggest that it would be beneficial for park managers, designers, and planners to prioritise the provision of high-quality public spaces, with a particular emphasis on the creation of adaptable neighbourhood parks in low-cost housing developments. It is recommended that forthcoming research endeavours investigate the efficacy of modifiable characteristics of local parks, particularly in the context of affordable housing.

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