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EXAMINING THE AFFORDANCES OF HABITUAL RANGE IN MALAYSIA'S SOCIAL HOUSING THROUGH MARGINALIZED CHILDREN'S PERSPECTIVES

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Abstract

This study examines how children living in Malaysia's urban social housing, in particular the Projek Perumahan Rakyat (PPR), perceive and envision their neighborhood environments within their habitual range. However, within these high-density settings, the issue arises where children's rights to protection, development, and participation are undermined by spatial constraints that limit their everyday freedoms. To foreground children's perspectives, a child-centered approach was adopted using child-led walks and children's drawings with participants aged 7–12 (N=23). These methods triangulated lived experiences with visualized aspirations to identify key environmental affordances that children valued. Findings reveal that safety, comfort, nature, sensory quality, and accessibility are central to children's priorities. These insights advance child-friendly urbanism by foregrounding the realities of high-density, adult-dominated social housing environments. By evidencing how children navigate current constraints and reimagine improved environments, the study positions them as stakeholders whose perspectives are indispensable for shaping inclusive and context-sensitive environments for children.

Keywords: Social Housing, Children's perspectives, Habitual Range, Neighborhood Environment, Perceived Affordances

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INTRODUCTION

The United Nations Convention on the Rights of the Child (UNCRC) affirms children's three fundamental rights: development, protection, and participation, as integral to their everyday urban lives (United Nations, 1989). However, these rights are increasingly constrained in contexts of rapid urbanization and rising urban poverty. In Malaysia, the government has responded to these challenges by implementing multiple social housing programs to accommodate low-income families (Khazanah Research Institute, 2023). While these developments successfully maximize population density at reduced construction costs (Khazanah Research Institute, 2023), they often do so at the expense of livability, resulting in restricted access to child-friendly outdoor spaces. Such spatial limitations undermine children's everyday freedoms to explore, interact, and develop within their immediate environments.

A growing body of scholarship highlights the importance of environmental affordances, the perceived opportunities within environments that support children's activities and interests (Gibson, 1979; Kytta, 2002). Understanding how children perceive and utilize these affordances is crucial to identifying the conditions that promote their well-being. Despite increasing international calls for youth participation in planning, children's voices remain marginal within urban policy and design processes, leading to environments that inadequately reflect their lived realities (Bessell, 2019). This persistent exclusion underscores the need for evidence-based frameworks that document children's neighborhood activities, preferences, and priorities.

To address this gap, the present study adopts Moore's (1986) conceptual model of nested neighborhood activity domains to examine how marginalized children in Malaysian social housing navigate and experience their local environments (such as in-between spaces, streets, playgrounds, or gardens). By capturing their perspectives and preferences, the study seeks to foreground children's priorities for planners and policymakers, thereby contributing to the design of more inclusive, supportive, and development-oriented social housing neighborhoods. The findings aim to strengthen the evidence base for child-responsive urban planning, ensuring that the rights articulated in the UNCRC are translated into tangible design practices within high-density, low-income contexts.

LITERATURE REVIEW

Understanding children's interactions within their neighborhoods requires careful attention to the environmental domains in which their daily activities unfold. Moore's (1986) conceptual model of nested neighborhood activity domains provides a useful framework for characterizing children's "activity spaces," highlighting the spatial and temporal patterns that define their engagement with

local environments. Within this model, a child's habitual range is typically centered around the immediate neighborhood, approximately 400 meters from their residential block, where most out-of-school activities occur (Moore, 1986). These activities are usually undertaken independently, often on foot or by bicycle, and form part of children's routine daily and weekly schedules (Weir, 2023; Moore, 1986; Ning et al., 2025).

Children's perceptions and uses of their neighborhoods are central to understanding how the built and social environment influence developmental outcomes (Chatterjee & Dutta, 2024; Lim et al., 2023). The neighborhood setting has long been recognized as a critical arena for children's holistic development, offering diverse affordances that stimulate cognitive, physical, social, and emotional growth (Kytä, 2002; Höskolan & Kytä, 2003; Guo et al., 2023). Such environments provide opportunities for cognitive flexibility, physical fitness, social competence, and emotional resilience, underscoring their multidimensional developmental role (Chetty et al., 2016; Sturges et al., 2023; Antink-Meyer et al., 2024; Weir, 2023).

Importantly, the unstructured nature of neighborhood environments allows children to exercise autonomy, engage in creative expression, and develop problem-solving skills (Weir, 2023). These spaces often serve as the first public arenas where children explore personal interests, experiment with emerging identities, and forge connections with peers and community members (Moore, 1986). Independent exploration and the establishment of meaningful places within these settings represent key processes in the development of self-identity and environmental competence (Chetty et al., 2016; Sturges et al., 2023; Antink-Meyer et al., 2024; Weir, 2023).

Recent scholarship has further emphasized neighborhood-level effects on health and behavior, showing that while individual-level factors remain influential, the broader community context also plays a decisive role (Weir, 2023; Loebach & Gilliland, 2019). Collective attributes, such as socioeconomic conditions, quality and availability of resources, built form, and perceived safety, shape the extent to which neighborhoods support or constrain children's activity, mobility, and wellbeing (Chatterjee & Dutta, 2024; Guo et al., 2023). Neighborhoods enriched with social and physical resources not only encourage active participation and healthy behaviors but also build children's confidence and competencies in ways that extend into adulthood (Zhao et al., 2023; Boardman & Saint-Onge, 2005).

Despite these insights, limited research has examined how children living in high-density social housing environments, particularly in the Malaysian context, perceive and negotiate their neighborhood affordances. This gap is critical, as marginalized children may experience fundamentally different spatial constraints and opportunities compared to their peers in more privileged contexts.

RESEARCH METHODOLOGY

This study adopted a qualitative, child-centered multiple-case study design to examine children's lived experiences and preferences within Kuala Lumpur's Projek Perumahan Rakyat (PPR) neighborhoods. PPR is a government social housing program intended primarily for low-income households, commonly associated with Malaysia's B40 population, the lowest 40% of households by income. Kuala Lumpur contains 72 PPR neighborhoods across 11 parliamentary constituencies. The sites were initially grouped by constituency, after which the Heads of Village were contacted to facilitate community access and invite participation. Three neighborhoods agreed to participate within the recruitment period (see Figure 1), reflecting the willingness and capacity of local leadership to support access and safeguarding procedures: PPR Gombak Setia (n=6), PPR Pantai Ria (n=13), and PPR Raya Permai (n=7). Their inclusion also supports literal replication across comparable cases, as recommended by Yin (2014). All three sites comprise multiple high-rise residential blocks exceeding five stories.

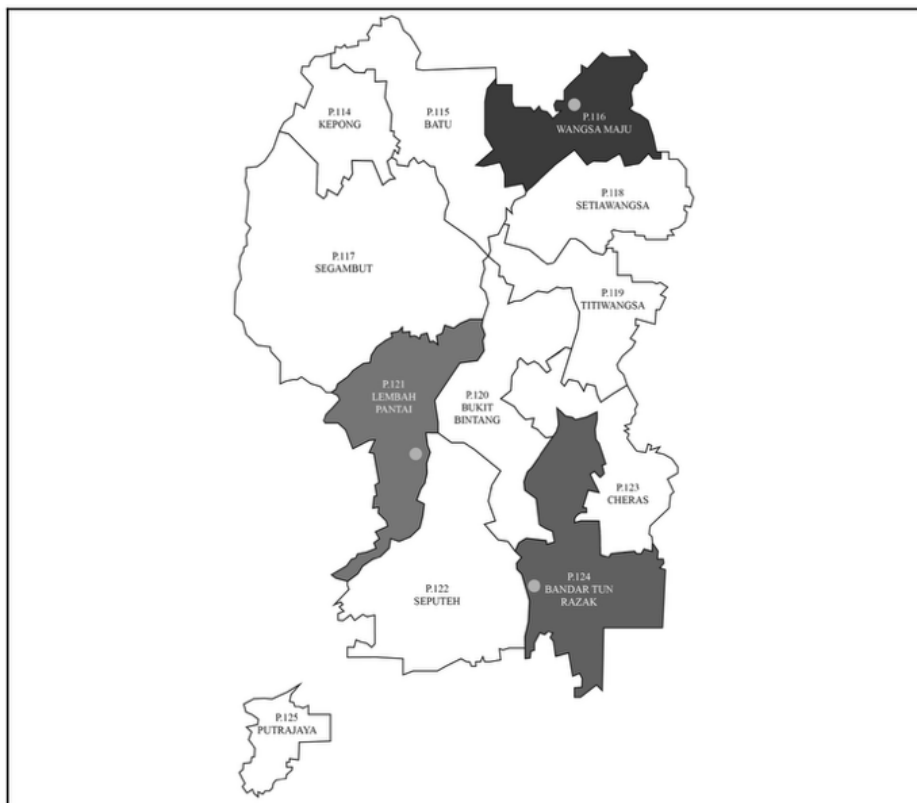


Figure 1: Maps of Participating PPR Neighborhoods in Kuala Lumpur

Twenty-three children aged 7–12 years participated: 14 girls and nine boys. Thirteen participants were aged 7–9 years, while ten were aged 10–12 years. All participants lived in PPR housing and therefore shared broadly comparable low-income social housing backgrounds.

Ethical approval was obtained. Written parental or guardian consent and children's age-appropriate assent were obtained before participation. Children were informed of their right to decline questions or withdraw without consequence. Participant identities were replaced with codes, and identifying information was removed from transcripts, drawings, and publications. Activities were conducted during daylight in familiar public areas. The researcher, two trained enumerators, a guardian, and a representative of the village committee accompanied each group to ensure safety and respond to any emotional or environmental concerns.

Child-led walks were conducted through go-along conversations to explore children's experiences within their habitual neighborhood range. Children participated in groups of three to four and guided an approximately 400-m route for about 30 minutes. They determined the route, pace, stopping points, and places discussed, while the researcher maintained a facilitative rather than directive role. Prompts included "Where is your favorite place to go?", "What do you like here?", and "What do you dislike along this route?" Data comprised children's verbal accounts, field notes, and route observations.

After the walks, children were given 40 minutes to draw their ideal neighborhood environment. This method allows children to draw what they value in their neighborhood environment, enabling them to express spatial ideas and emotions that may be difficult to communicate verbally (Adam et al., 2025). They were encouraged to depict destinations, activities, people, routes, natural elements, and other features they considered important. Upon completion, children were invited to explain the features they had drawn, including their choices, spatial arrangements, and reasons for including particular elements. These explanations guided the interpretation of the visual data.

Audio-recorded conversations were transcribed and, where necessary, translated into English. Transcripts, field notes, drawings, and children's explanations were managed in NVivo and analyzed inductively through thematic coding. The drawings were examined according to their depicted features, spatial organization, routes, placement of activities, people, vehicles, and natural elements. Triangulation involved comparing each child's lived experiences from the walks with the preferences and spatial solutions represented in the drawings. Convergences and differences were then consolidated into overarching environmental affordance themes. Data collection and preliminary analysis proceeded concurrently. Thematic saturation was considered achieved when

successive walks and drawing explanations across the three neighborhoods repeated established patterns and produced no substantively new codes, environmental attributes, or interpretations.

ANALYSIS

Findings of Child-led Walks

Children consistently identified playgrounds as their preferred outdoor destinations, valuing them as spaces for play, social interaction, and security. Their appeal arose not only from equipment such as swings and seesaws but also from the presence of friends, neighbors, and other residents. Sensory experiences further influenced place preference, as one child explained, “I like the swing because I can feel the wind while using it” (PPRGS02, age8). Thus, children’s preferred places combined opportunities for physical activity with social presence and environmental comfort.

However, playgrounds were frequently described as too small, overcrowded, or poorly maintained. When designated facilities could not accommodate them, some children extended their play into nearby streets. Although they recognized the risks, staying close to home provided reassurance through parental proximity. Street play, therefore, represented an adaptive response to insufficient play space rather than an inherently preferred activity. This compromise was captured by one participant: “Sometimes we play on the road. But I don’t like cars and motorcycles here. I am afraid to get hit” (PPRPR21, age8).

Children were also attentive to the visual and microclimatic qualities of their surroundings. Well-lit places were perceived as both attractive and secure, while trees offered shade, airflow, and aesthetic relief. As one child noted, “I like trees because they provide fresh air and a cool breeze” (PPRRP12, age11). Frequently mentioned terms, including “near,” “friends,” “people,” “bright,” and “trees”, show that proximity, sociability, visibility, and environmental quality were closely interconnected in shaping favorite places (Figure 2).



Figure 2: Word clouds illustrating children's positive and negative experiences from child-led walks across three PPR neighborhoods

Despite these positive associations, children identified substantial spatial constraints. Moving vehicles threatened their safety, while parked cars and motorcycles obstructed pathways, playgrounds, and ground-floor courtyards that might otherwise support informal play. Narrow pedestrian routes also restricted movement: "I don't like small pedestrian lanes; they are very narrow and cause congestion" (PPRGS06, age11). In addition, some playgrounds were located beside waste-disposal or utility areas, while sports courts and gardens were positioned at neighborhood edges, reducing their attractiveness, accessibility, and perceived safety.

Children consistently avoided isolated, confined, or poorly lit locations. The absence of people weakened their sense of security, while limited visibility intensified concerns about strangers, animals, and physical hazards. One child stated, "I don't like quiet places, places with no people, places that are dark, places that are confined" (PPRPR19, age10). Inadequate seating and environmental maintenance further reduced outdoor comfort, as reflected in the observation, "There's nowhere to sit outside, except for the steps" (PPRRP14, age7).

Collectively, the walks demonstrate that children assess neighborhood spaces through interconnected spatial, social, and sensory considerations. Their everyday choices reflect continual negotiation between enjoyment and risk, with proximity to home, social presence, lighting, greenery, cleanliness, and freedom from vehicles determining where they feel able to play and move independently.

Findings of Children's Drawings

The children's drawings depicted neighborhoods that extended beyond the constraints of their existing PPR environments. Across the three sites,

playgrounds, open fields, sports courts, gardens, and gathering spaces appeared as interconnected destinations rather than isolated facilities. This arrangement suggests that children envisioned the neighborhood as an integrated setting for play, movement, relaxation, and social interaction.

A recurring feature was the centralization of communal activities. Many children positioned residential blocks around the outer perimeter, enclosing a shared central core containing playgrounds, sports areas, gardens, and seating. Vehicle parking was generally placed outside this core, creating an interior where children could move and play without competing with traffic. This pattern reflects children's awareness of existing vehicular risks, as the child expressed: "The cars outside, so I can play without having to look around" (PPRPR21, age10). The drawings transformed this concern into a clear spatial response: separating vehicles from everyday play areas.

Children reinforced this vehicle-free core with interconnected pedestrian and cycling paths, crossings, fences, lamp posts, guard points, and human figures. These elements indicated that safe movement depended not only on traffic separation but also on visibility, surveillance, and the presence of other people. Open routes and recognizable signposts further suggested a preference for neighborhoods that children could navigate independently.

The drawings also incorporated shaded shelters, huts, benches, and semi-indoor spaces for resting and gathering. These features show that children did not imagine neighborhoods solely for vigorous activity; they also valued places to pause, converse, and remain outdoors comfortably. The inclusion of trees around pathways and play areas supported this preference for shade and airflow. As one child explained, "I put all the trees, grass and garden here because they provide fresh air, cool breeze, and make the environment pretty" (PPRPR13, age12). Natural and sensory features were prominent. Children drew flowers, gardens, ponds, animals, sand areas, water features, and colorful structures, integrating nature directly into spaces for play and movement. Food stalls and vendors were also positioned near gathering areas, reflecting their role as convenient refreshment and social points. One participant stated, "I like the restaurant because it makes me full, and they have beverages too" (PPRGS03, age9).

Several drawings included exploratory equipment such as climbing structures, play towers, sandpits, and open-ended play zones. These representations conveyed a preference for varied environments that support imagination, challenge, and social play rather than uniform playground equipment alone. Overall, the drawings reconstructed fragmented and vehicle-dominated PPR spaces into centralized, connected, and child-oriented neighborhoods. They demonstrate children's capacity to translate everyday

constraints into practical spatial proposals that prioritize safe movement, social visibility, comfort, nature, and diverse opportunities for play.

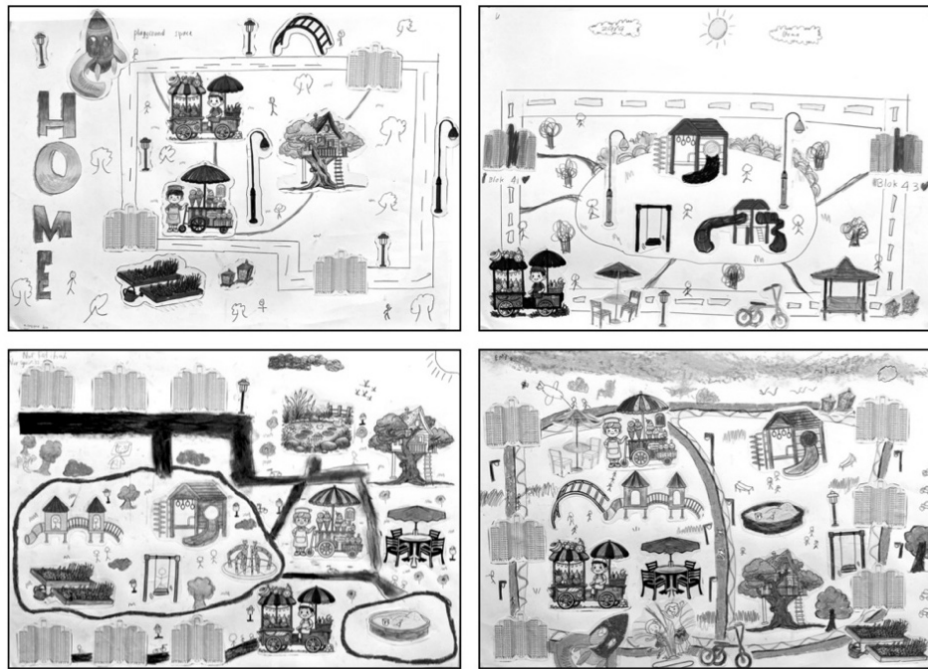


Figure 3: Examples of children's drawings depicting their ideal neighborhood environments

DISCUSSION

Triangulation of the child-led walks and children's drawings revealed how children in Malaysian PPR social housing experience existing neighborhood constraints and envision more supportive environments. The actualized habitual range comprised playgrounds, sports courts, open fields, and streets. The attributes that enabled these spaces to provide affordances were safety, comfort, nature, sensory amenities, and accessibility (Figure 4). Across both methods, children envisioned activities concentrated within a vehicle-free communal core, with residential blocks around the perimeter and parking located outside. This configuration resembles home-zone, superblock, and play-street principles but reflects children's specific responses to the spatial pressures of dense PPR neighborhoods.

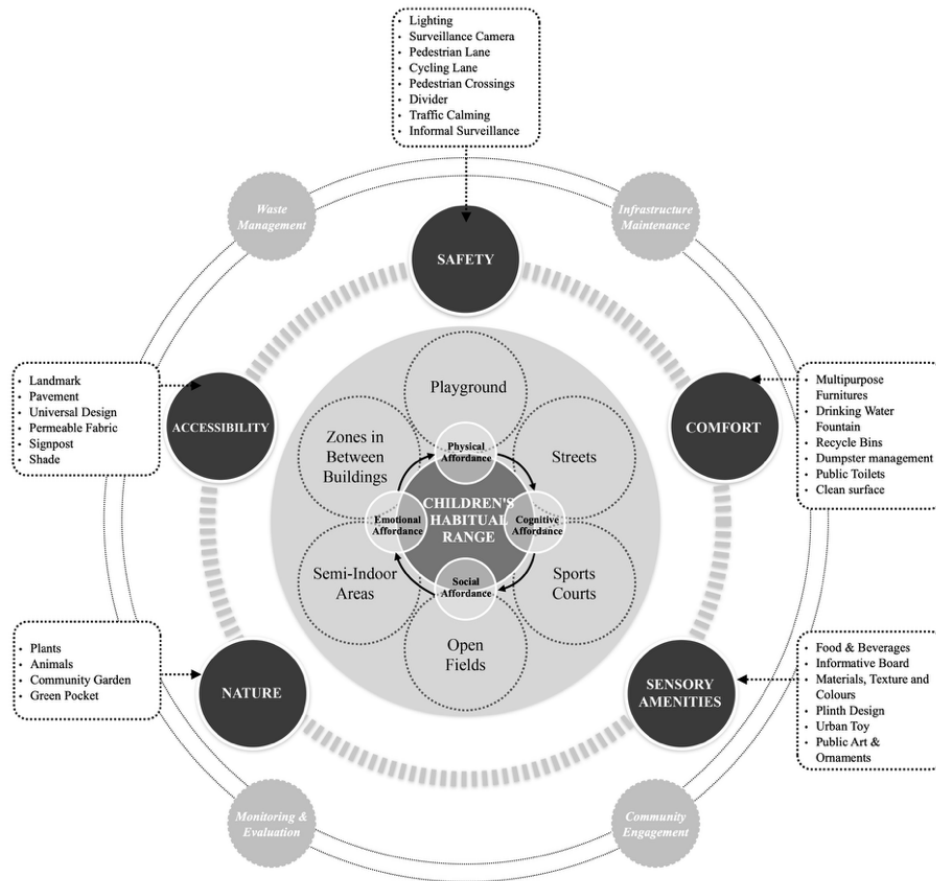


Figure 4: Affordances within the habitual range as perceived by marginalized children

Safety

Safety was the most prominent attribute. Children encountered moving vehicles, motorcycles occupying courtyards, and dark or isolated spaces. One child explained, “Sometimes we play on the road... I am afraid to get hit” (PPRPR21, age 8). Their drawings responded by relocating vehicles to the neighborhood perimeter and adding lighting, fencing, surveillance cameras, and watch points, confirming that safety underpins play and independent mobility.

Safety was also associated with social presence. Neighbors, peers, and adults provided informal surveillance, reflecting Jacobs’ (1961) “eyes on the street” and evidence linking children’s mobility to perceived supervision and reduced traffic exposure (Kytä, 2002; Högskolan & Kytä, 2003; Guo et al., 2023).

Rather than merely proposing traffic calming, children advocated separating vehicles from recreational spaces. This may reflect PPR-specific conditions, including high density, limited parking, and vehicle encroachment. Their street use, therefore, appears less a preference than an adaptation to overcrowded or inadequate play areas.

Comfort

Children sought shade, seating, shelters, and protection from tropical weather. Their drawings included canopies, benches, covered paths, and gathering areas, while the walks revealed dissatisfaction with the limited places available for resting. Comfort therefore encompassed more than physical ease; it enabled children to remain outdoors, interact with friends, and feel socially supported without continuous adult intervention. This aligns with research showing that favorable microclimates and small-scale amenities increase children's use of public spaces and strengthen place attachment (Högskolan & Kyttä, 2003; Zhao et al., 2023; Clark & Moss, 2017).

Comfort was nevertheless weakened when motorcycles occupied ground-floor courtyards and when sports courts or gardens were positioned at neighborhood edges. These conditions indicate that comfort is jointly produced through proximity, safety, maintenance, and spatial management. In high-rise PPR settings, providing benches or shelters alone is insufficient unless communal ground floors are protected from parking and storage encroachment.

Nature

Trees, gardens, flowers, and animals appeared prominently in the drawings, while children valued trees during the walks for shade, airflow, and beauty. As one child explained, "I like trees because they provide shade" (PPRPR24, age7). These findings support evidence that everyday contact with greenery promotes physical activity, restoration, and socio-emotional wellbeing (Högskolan & Kyttä, 2003; Antink-Meyer et al., 2024; Loebach & Gilliland, 2019).

Importantly, children did not depict nature solely as a separate park. Instead, they incorporated trees along paths, vegetation around sports courts, gardens near residential blocks, and shaded play areas. This extends studies that emphasize access to destination greenspaces (Antink-Meyer et al., 2024; Loebach & Gilliland, 2019; Zhao et al., 2023). In dense PPR neighborhoods, distributed greenery may be more valuable than a large peripheral park because it remains visible, nearby, and connected to children's everyday routes. The preference also reflects dissatisfaction with the concrete-dominated character of existing housing environments.

Sensory Qualities

Lighting, color, sound, movement, and natural materials influenced children's attraction to place. Brightness signaled safety, color encouraged use, and durable materials supported active play (Gibson, 1979; Kytä, 2002). As one child noted, "I like the mural art because it's very pretty" (PPRRP16, age 10), showing that environmental appeal extended beyond equipment provision and could strengthen place attachment (Weir, 2023).

Unlike studies that associate dim or wild spaces with adventurous play (Antink-Meyer et al., 2024; Dodd et al., 2022), children in PPR settings often interpreted darkness and ambiguity as danger. Sensory quality therefore contributes not only to aesthetics but also to legibility, reassurance, and enjoyment.

Accessibility

Accessibility involves proximity, legibility, and unobstructed movement. Although children generally stayed close to home, their drawings featured continuous walkways, cycling routes, clear signage, and direct connections. Narrow paths, parked motorcycles, poor visibility, and ground-floor clutter restricted mobility even when facilities were nearby.

These findings support Moore's (1986) habitual range and research on children's independent mobility (Kytä, 2002; Weir, 2023; Loebach & Gilliland, 2019; Ning et al., 2026). Children proposed centralized layouts, shorter routes, clearer sightlines, and activities visible to familiar residents, helping explain why peripheral facilities may remain underused.

Accessibility therefore reflects the difference between potential and actualized affordances: facilities cannot support children when routes are obstructed, unsafe, or difficult to interpret (Gibson, 1979; Kytä, 2002). In dense social housing, access depends not only on facility provision but on whether children can reach destinations safely, visibly, and independently.

Implications for Child-Friendly Social Housing

The findings indicate that children's perceived and actualized affordances within their habitual range are shaped not only by physical form but also by safety, visibility, accessibility, and social presence. Across the three participating PPR neighborhoods in Kuala Lumpur, children preferred spaces where they could move independently while remaining visible to familiar adults and peers. Their walk narratives and drawings suggest that child-friendly planning does not necessarily require large or specialized facilities; rather, it requires the reorganization and better management of everyday shared spaces.

The five identified affordances can be translated into practical design and policy measures. For safety, parking control should prevent cars and

motorcycles from occupying courtyards, pedestrian routes, and play areas. Where feasible, parking and vehicle circulation should be relocated towards neighborhood edges, while central communal areas should be prioritized for walking, play, and social interaction. Traffic-calming measures, physical separation between vehicles and pedestrians, improved sightlines, and lighting along frequently used routes would further support children's independent mobility. Lighting should be distributed across paths, courtyards, entrances, and activity nodes rather than concentrated only around parking areas.

For comfort, ground-floor courtyards should be formally designated and managed as shared community spaces rather than treated as residual parking or storage areas. Shaded seating, covered walkways, weather-protected play areas, and well-maintained resting places would enable children to remain outdoors for longer periods in Kuala Lumpur's tropical climate. Clear responsibility for cleaning, maintenance, and the removal of obstructions is therefore as important as the initial provision of facilities.

For nature, planning should incorporate small-scale, continuous green elements throughout children's daily routes. Tree-lined walkways, planted edges, pocket gardens, shaded play areas, and community gardens may be more accessible and usable than a single peripheral green space. Such micro-green infrastructure can improve thermal comfort, visual quality, and opportunities for informal interaction while remaining within children's visible and familiar activity range.

For sensory quality, color, lighting, natural materials, and varied play surfaces should be used to create legible and inviting environments. These elements should not be treated as decoration alone, as they help children recognize safe routes, distinguish activity areas, and develop stronger attachments to place. Durable and easily maintained materials are particularly important in intensively used communal spaces.

For accessibility, facilities should be connected through direct, unobstructed, and shaded pedestrian and cycling routes. Edge-located courts and gardens require improved connections, surveillance, and active frontage if they are to function as usable child-oriented spaces. New facilities should therefore be assessed not only by quantity or distance but also by whether children can reach them safely, independently, and comfortably.

At the policy level, these measures require coordination between housing authorities, local government, resident committees, and facility managers. Parking enforcement, ground-floor management, maintenance responsibilities, lighting audits, and periodic assessments of play-space accessibility should be incorporated into PPR management practices. Children should also be consulted during neighborhood upgrading, as their accounts identify barriers that conventional facility-based planning may overlook.

These implications should not be generalized to all Malaysian social housing. They arise from three voluntarily participating PPR neighborhoods in Kuala Lumpur. Nevertheless, they provide context-specific directions for improving similar high-density housing environments and a basis for testing child-responsive planning measures across a wider range of PPR settings.

CONCLUSION

This study used child-led walks and children's drawings to examine how children aged 7–12 experience and envision their neighborhood environments across three PPR sites in Kuala Lumpur. Although playgrounds, streets, sports courts, open fields, semi-indoor areas and zones between buildings were valued destinations, children's preferences centered on five interrelated affordances: safety, comfort, nature, sensory quality, and accessibility. Together, these attributes supported a clear spatial preference for centrally located, vehicle-free communal spaces with greenery, shade, lighting, seating, and direct, legible routes.

The findings position marginalized children as critical stakeholders whose experiential knowledge can strengthen social housing planning and management. DBKL should incorporate child-responsive spatial audits and children's participation into PPR upgrading programs and planning approvals. Housing agencies should establish minimum standards and dedicated budgets for play-space provision, shaded connections, lighting, micro-green infrastructure, and long-term maintenance. Architects and planners should prioritize pedestrian–vehicle separation, visible communal cores, unobstructed ground-floor circulation, and facilities located within children's everyday activity range. PPR management bodies and resident committees should enforce parking controls, prevent motorcycles from occupying courtyards and pathways, maintain shared spaces, and periodically consult children regarding neighborhood conditions.

The findings are context-specific and should not be generalized to all Malaysian social housing. The study was limited to 23 children aged 7–12 across three Kuala Lumpur PPR neighborhoods. Future research should include broader age groups, gender-sensitive and intergenerational perspectives, additional housing contexts, and mixed methods such as spatial mapping and mobility tracking.

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