






Assessment of Child-Friendliness in Neighbourhood Street Environments in Nanchang, China: An Intersectional Perspective of Affordability, School Trips and Place Identity



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ABSTRACT

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In the context of rapid urbanization, this study focuses on how to build child-friendly street environments within a 15-minute living circle. By exploring children's perceptions and preferences of street environments, the study reveals the complex interactions between the physical and social environments and children's daily lives. Data were collected and analysed using a qualitative approach, combining observation and interviews. The results show that street environments have a significant impact on children's well-being and sense of place identity, and that safe, accessible and engaging street spaces are essential for fostering positive experiences and a sense of belonging among children. The study also identifies key factors that influence the usability of the street environment and children's access behaviour. Based on the findings, the study's recommendations for promoting pedestrian-friendly design, incorporating play spaces into street design, encouraging community engagement, and fostering intergenerational integration, will guide urban planners and policymakers in creating more child-friendly and sustainable urban environments. These recommendations are expected to provide important references for theoretical advances, methodological innovations and policy formulation, thereby promoting the healthy growth of children and the comprehensive development of cities.

1. INTRODUCTION

Rapid urbanisation on a global basis has led to significant changes in cities, with the twin pressures of farmland preservation and city building creating new challenges for urban planners and policymakers [1, 2]. Some studies have indicated that a large proportion of the world's approximately 3 billion people living in urban areas are children under the age of 18 [3]. Thus, the need to prioritise child-friendly urban environments is becoming increasingly urgent [4]. However, the design of urban environments and facilities prioritizes adults and motorized vehicles, often neglecting children's rights and healthy development in the face of demographic change [5-7].

The concept of child-friendly cities (CFC) has emerged as an important framework for reconciling this imbalance [8], emphasising the rights and needs of young citizens in urban planning and development [9, 10]. The United Nations Sustainable Development Goal 11 promotes inclusive, safe, resilient, and sustainable cities and human settlements [11]. The CFC approach emphasises the importance of creating environments that enable children to independently access places, socialise and learn from their surroundings [12, 13]. Specifically, in terms of implementation, however, it is still largely focused on developed countries, whereas developing countries are still in their infancy [14].

Jiangxi Province's Nanchang, China, has experienced remarkable urbanisation and has made some attempts at sustainable development [15]. It has a reputation as the *Breadbasket of Jiangnan* and the *Home of Fish and Rice* [16], and has a development plan for life and tourism. However, the COVID-19 pandemic has severely tested the resilience of contemporary cities, catalysing the emergence of the 15-minute city paradigm [17]. Nanchang still lacks a timely reflection in this regard.

Undeniably, the conceptualisation adapts to accessibility and inclusiveness, which are key elements of a child-friendly environment [18]. It also adapts to contribute to human well-being, as expected by the SDGs [19]. Therefore, how to build a child-friendly urban environment has become an important topic. Accessibility and inclusiveness are two core elements of child-friendly environments, and they have a profound impact on children's growth and quality of life [20]. While sustainable development has become a common goal around the world [21], in practice, urban planners and policymakers are often faced with the challenge of balancing sustainable urban development with meeting the specific needs of children. Particularly in the context of the emerging urban planning concept of "15-minute living circles", there is a need to understand children's real perceptions of and preferences for the street environments in which they live. This study aims to fill this gap by exploring the dynamic relationship between

children and the street environment through an integrated research approach. As a result, this study has important theoretical value and more far-reaching practical significance for promoting the construction of child-friendly cities. This will not only help to enrich and improve existing urban planning theories, but also provide a strong reference and guidance for future urban practice, and ultimately achieve a more inclusive, sustainable, and child-friendly urban environment.

In order to better undertake this study, research questions are proposed:

1. What aspects of the street environment have an impact on children's well-being and sense of place identity?

2. What are the key factors influencing the usability of the street environment and children's access behaviours?

3. What are children's perceptions and preferences of the street environment and how can their well-being and sense of local identity be enhanced by meeting these perceptions and preferences?

In answering these questions, this study adopts Affordance Theory by James Gibson, can better describes the interaction possibilities between the environment and the individual and creates intuitive, easy to use and friendly spaces [22]. Hence, a detailed literature review is conducted in Section 2. It also includes child-friendly cities and environments, and children's well-being and identity, providing theoretical support. Section 3, specifies the research methodological stance of the study and details the data collection and analysis methods. This is followed by the presentation of the findings, in which the overall narrating logic is compared to the theory and methodology, ensuring content consistency. The final section concludes the study by critically analysing the limitations and providing recommendations for future research.

2. LITERATURE REVIEW

2.1 Taxonomy of affordance in environments

Children have desires to create, explore and be active when interacting with their environment [23-25]. This relates to the concept of "affordance" first introduced by Newman and Holupka [26]. Affordance is defined as a functional property of the environment that provides children with the opportunity to interact positively with their surroundings [27-29]. The concept of affordance involves a reciprocal link between the environment and the animal, with the two reinforcing each other [30]. Furthermore, the crucial reciprocal relationship between the perceiver and the environment is emphasised in ecopsychological theory is important [31, 32]. Research has shown that the presence of affordability, independent mobility, and opportunities for environmental affordances in the surrounding environment are important factors in creating child-friendly environments [33, 34]. In the Chinese urban environment, child-friendly environments are characterised by opportunities for play, exploration, access to nature, active travel and visible activities [35].

The idea of affordances, particularly in relation to children's activities, has emerged as a key framework for scholars to understand how environmental attributes facilitate and shape play and social interactions among children [36]. Previous studies have focused on outdoor environments, public spaces, and various urban environments, emphasising their

importance in guiding child-related design, practice and policy development [37]. Also, taxonomy theory provides a functional lens for looking at children's environments, categorising them according to the activities they facilitate [31, 38]. The functional approach proves to be psychologically insightful because it emphasises the activities that the environment is able to support, rather than just its physical attributes. In addition, Abbey et al. [39] introduced social availability, emphasising how environments can facilitate social interactions between children. Also, children's decision-making is often influenced by their peers, indicating social dynamics in exploratory activities [40]. Thus, the theory of availability is extremely valuable from today's perspective.

2.2 Child-friendly cities with environments

Within the discourse on availability theory, the concept of child-friendliness has been mentioned several times. Child-friendly environments are a complex, multidimensional, and multilayered concept that refers to environmental settings and structures that support individuals and groups of people concerned with children's issues, thereby enabling children are able to construct and realise their goals and projects [18, 41]. This notion bridges the gap between environmental qualities appreciated by children and the practical application of physical planning, as exemplified by the idea that "environmental child-friendliness is a community product developed from local structures that transcend the individual level" [42].

However, despite this theoretical understanding, the widely recognised importance and benefits of CFC, children's rights have not been mainstreamed or adopted in urban policies [8]. Furthermore, to ensure these rights are upheld, both the assessment of urban effectiveness and its maintenance over time require a consistent methodology to be realised [43]. Children's spaces are an important component of sustainable development [44, 45]. It is imperative to clarify that environmental child friendliness (ECF) can be described and assessed through two core criteria [46]. It reveals the mechanisms by which a good environment affects individuals, going beyond mere physical comfort to encompass, the experiential aspects of environmental quality, such as supporting their personal goals and aspirations [47]. Although there are commonalities among young people's environmental aspirations, they are not a homogenous group. Differences such as class, gender and culture play a role in the construction of these aspirations as well as in shaping environmental practices [48]. Moreover, it has been argued that policy support is more effective in order to construct smart cities and a sustainable future [11, 49, 50].

The scope of ECF can be broadly defined through ten dimensions that cut across individual and collective experiences of child-friendly environments [14]. Additionally, there is a need for further exploration and discussion on theoretical frameworks describing the different norms and dimensions of child-friendly environments. Table 1 lists some of the current theoretical perspectives on environmental friendliness.

Therefore, after conducting a literature review on availability and child-friendly theories, the authors mapped the relationship between the two, thus laying the foundation for further research (as shown in Figure 1).

Table 1. Theoretical framework describing 10 normative dimensions of a child-friendly environment

Normative Dimensions	Abstract Definitions
1. Housing and dwelling	<ul style="list-style-type: none"> • Flexible and secure housing alternatives • Processes that transform the dwelling into a home
2. Basic services (health, education, and transport)	<ul style="list-style-type: none"> • Basic (public and private) services nearby that facilitate the everyday life of children
3. Participation	<ul style="list-style-type: none"> • Opportunities to participate in planning and development
4. Safety and security	<ul style="list-style-type: none"> • The guaranteeing of physical and psychological safety by the state and the municipalities: child welfare and the prevention of violence • An environment that is tolerant and pluralistic • Safe transport systems and public places in general
5. Family, kin, peers and community	<ul style="list-style-type: none"> • Opportunities for close social relationships with family, kin and friends and arenas for activities
6. Urban and environmental qualities	<ul style="list-style-type: none"> • High standards in physical elements of the local environment; provision of variety of interesting opportunities
7. Provision and distribution of resource; Poverty reduction	<ul style="list-style-type: none"> • The provision of financial resources and work opportunities to young people who have a role to play in the local economics
8. Ecology	<ul style="list-style-type: none"> • The protection of nature and application of principles of sustainable development in the construction of built environment and society
9. Sense of belonging and continuity	<ul style="list-style-type: none"> • A sense of cultural continuity and sense of belonging to a certain place at certain time
10. Good governance	<ul style="list-style-type: none"> • Fixable governance that takes into account young people's opinion in decision-making; the provision of participatory structures, such as youth councils and various participatory projects

Source: Horelli [47]

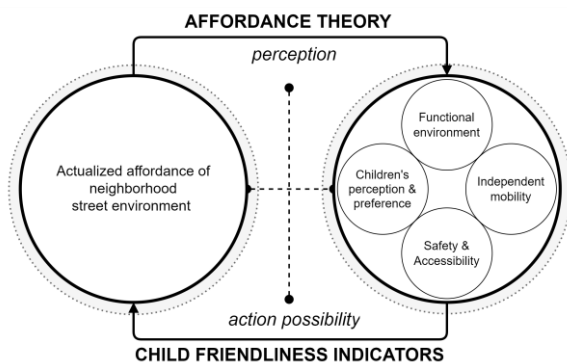


Figure 1. Affordance Theory and the child-friendliness indicators connection

Source: Author

2.3 Child well-being and place identity in environments

Early research on children in urban settings focused on

well-being, poverty, child labour and health [14, 51, 52]. However, to fully understand children's well-being, it must recognize the multidimensional and complex nature, child well-being addresses the full range of children's needs and fulfilment in terms of physical, emotional, educational and social participation [53]. To this end, various dimensions must be considered in the planning, design, and management of outdoor spaces that support children's independent initiatives [13].

Furthermore, it is important to be clear in this context that child rights theory provides a solid theoretical foundation for children's well-being, emphasising that children should enjoy a range of inalienable rights, including the right to survival, development, protection and participation [54]. Extending this framework, Bronfenbrenner's ecosystems theory goes further by stating that children's development occurs at multiple levels of the environment (such as the family, school, community and society) are realised through the interactions of these levels [55, 56].

In the discourse on children's well-being, Street [57] has highlighted that empowering children with a sense of belonging is a positive attitude in discourses on children's well-being. Similarly, Ben-Arieh et al. [58] have emphasised that when creating wellbeing or opportunities for wellbeing, it is directly reflected in the economic and emotional quality for children, as well as their psychological state [59]. Elements such as the physical, social and cultural environment should also be considered. Collectively, these theories together form the theoretical basis of child well-being for this study and provide an important theoretical underpinning for assessing the impact of street-friendliness on children's well-being.

Moving beyond the theoretical framework of child well-being, place identity emerges as another crucial aspect. It is the emotional connection and cognitive sense of belonging established between an individual and a particular place [60]. It reveals an individual's subjective perception of physical space, which covers for various disciplines such as sociology, geography, psychology, environmental science and ecology, public administration, spatial planning, etc. [61]. Sense of place theory underscores that an individual's perception and experience of place is the basis for the formation of place identity [62], whereas social identity theory states that individuals construct and maintain their identity of place through social categorisation and comparison [63].

These theories offer valuable perspectives for comprehending the emotional connections and identities established between children and the streets of Nanchang City. Faccioli et al. [64] argued that when environmental attitudes and beliefs about local identity are linked, people's natural response is to be inclined to be protective of the environment. However, in vernacular areas with a rich history and strong community and cultural ties, cultural diversity and local identity become more prominent [65]. It's noteworthy that authorities, in their planning, tend to overlook people living in rural and urban settlements, who continue to differ in their relationship with the natural environment and local communities, which leads to differences in the degree of identification with place. On the other hand, Peng et al. [61] identified a certain impediment to understanding place identity, which is the lack of clarity in relation to other environmental psychology concepts, such as place attachment, rootedness, sense of place, place dependence and place satisfaction. This ambiguity poses an even greater challenge for children, a group that is not fully socialised. In this context, the

distribution of place identity among individuals through welfare measures, environmental attitudes and place identity can provide research with sufficient evidence to follow [64, 66].

Moreover, there exists a close correlation between residents' territorial identity and the perception of landscape, which is the cultural projection of a place by society. This landscape serves as the centre of meaning and symbolism, and plays a role in the process of constructing territorial identity [1, 67, 68]. It's worth mentioning that Child-friendly spaces are supposed to act as important social infrastructures that are essential for health and contribute significantly to children's physical, social and cognitive development [44]. Regrettably, children's rights in the city are not widely recognised or integrated into urban planning policies and practices [9].

In light of these literature reviews, the current issues and gaps are more clearly identified. In the subsequent sections, the methodology is presented, contributing to the scholarship by enriching the research with specific data collection and analyses and thereby contribute to the scholarly discourse.

3. RESEARCH METHODOLOGY

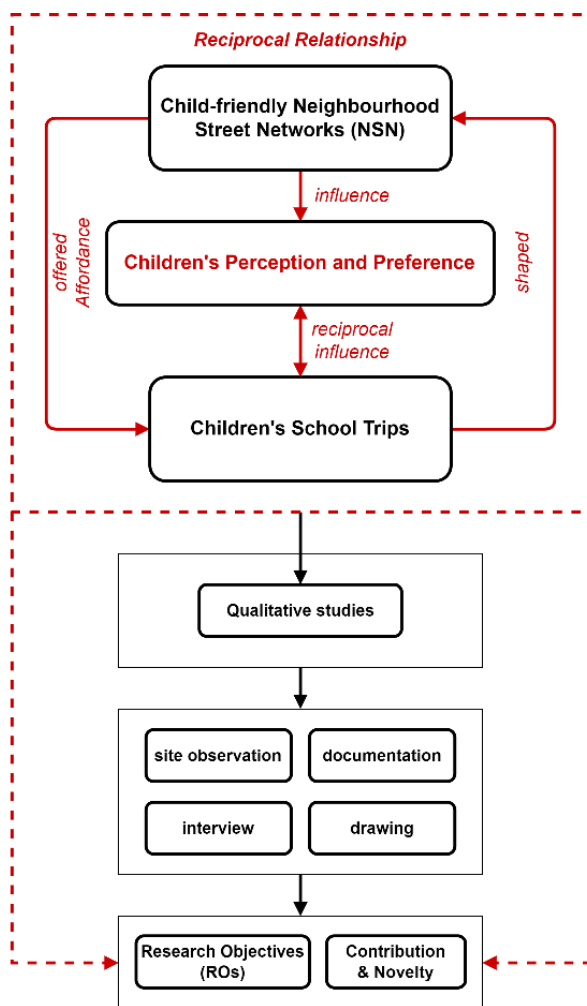


Figure 2. Research design
Source: Author

Figure 2 shows the study's research design. The goal of this study was to identify the characteristics of the urban streets and the uniqueness of the renovated old city of Nanchang City, Jiangxi Province, China. In order to achieve this, a qualitative

methodology was chosen as it allows for an in-depth exploration and understanding of these characteristics and uniqueness. On-site observation allows for a visualisation of the actual conditions and atmosphere of the city streets, capturing details that cannot be reflected in quantitative data. By interviewing children and their guardians, it is possible to get a direct understanding of their real experiences and perceptions of the city streets and the old city after renovation, a first-hand, authentic feedback that cannot be replaced by quantitative research. Finally, mapping allows for a more intuitive understanding of how children perceive and use urban space from their perspective. Therefore, the multi-dimensional and in-depth exploration characteristics of qualitative methods make them the most appropriate methodological choice for this study [12].

3.1 Data collection procedure

Specifically, this study focused on children's interactive experiences during their daily outdoor activities (including their home-school trips and informal play). The chosen methods are appropriate to the nature of play in urban areas "15-minute life cycle". The researcher and the team also do not alter or interfere with the nature of their play.

As a result, the renovated old city of Nanchang City served as the location sample, allowing for improved data collection and theme tightening, both of which were beneficial for the quality of the data.

Purposive sampling was employed for the selection of individuals in the sample. The study recruited children who met the specific requirements by selecting schools in the local area as the primary source of participants. When individuals engage, they do not perceive themselves as simply fulfilling a task or being evaluated by the researcher. This study, which focuses on children, highlights the need of using a participative approach. Verbal procedures, such as accompanied interviews, were employed during data collection to highlight the rapport between the researcher and the subjects. Therefore, this study employed both visual and aural approaches simultaneously during the children's play.

The next section provides additional details regarding the methodology employed in this study for conducting site observations, documenting findings, and collecting data through interviews.

3.2 Site observation

The researcher submitted an application to the Nanchang Community New Park Road Neighbourhood Committee, seeking approval for the proposed study and its related tools. Throughout the site observation phase, the researchers conducted a detailed field investigation focusing on the above streets. Taking into account the different types and spatial characteristics of each street, data on various aspects such as its traffic flow, pedestrian activities, street facilities, green landscape and the interaction between the street and its surroundings were recorded. These data provide valuable first-hand information for subsequent analyses and studies.

Through in-depth in situ observation and data collection, a more comprehensive understanding of the actual situation of community streets in Nanchang can be obtained, providing useful references and suggestions for urban planning and community development. Table 2 is a compilation of sample streets for subsequent analyses.

Table 2. Summary the feature of sample street

Name of Street	Type of Street	Type of Space
YX I (Yuxin Street)	Synthesis street (external neighborhood street)	Public space
YX II	Synthesis street (external neighborhood street)	Public space
NIS I (Pingan Neighborhood inner street)	Internal Neighborhood-living Street	Public, Semi-public and semi-privacy space
Living quarters street I	Internal Neighborhood-living Street	Public, Semi-public and semi-privacy space
Living quarters street II	Internal Neighborhood-living Street	Public, Semi-public and semi-privacy space

Source: Author

3.3 Documentation

The study emphasises children’s interactive experiences in their daily outdoor activities, particularly their home-to-school journeys and informal play activities. With this in mind, the chosen research methodology fits the characteristics of play activities within the 15-minute circle in urban areas. To fully capture the true state of the children’s behaviour during play, two observation and recording methods were used, as shown in Table 3.

Table 3. Two types of observations to capture views of children in their play

Type of Observation	Characteristics of Children’s Play
Direct observation	<ul style="list-style-type: none"> • Observation time from 10 to 30 minutes • Radius of play within 200m or children rapidly move from on one side of street to another side for a shorter time
Participant observation	<ul style="list-style-type: none"> • Observation time up to duration of play about 30 minutes to an hour • Radius of play up to children rapidly move from on space to another over a longer time

Source: Author

3.4 Interview and drawing

Children’s participation creates a reciprocal or co-operative relationship [69]. By recognising children as competent contributors to the research, their voices are heard and their agency is respected. This approach is in line with the United Nations Convention on the Rights of the Child (UNCRC), which promotes the right of children to express their views on all matters affecting them. Skelton [70] noted that when children feel that their views are taken into account and that they are active participants, rather than passive subjects, they show greater interest, motivation, and a sense of ownership of the research project. This not only improved the quality of the research findings, but also fostered positive and respectful relationships between researchers and children. Therefore, interviews and drawings were also considered as one of the sources of data for this study. Interviewing tools involved tape recorders and drawing tools including plotters, A4 paper, erasers, markers and rulers to facilitate children’s drawing.

It is important to acknowledge that this study has methodological limitations despite using qualitative, in-depth inquiry. The main one is the specificity of sample selection and methodology execution, which may introduce subjective bias. Also, this study strictly adhered to ethical guidelines to ensure that each participant gave informed consent with full knowledge of the study, and strict measures were taken to protect their privacy and data security in order to minimise the potential impact on the participants. The entire research process was fully compliant with the relevant ethical regulations.

4. FINDING AND DISCUSSION

This section presents the key findings of the study and discusses the implications of these findings in the context of creating child-friendly urban environments, particularly within the framework of the 15-minute city concept. Figure 3 is a discussion of the observations centred around the three research questions described in the introduction.

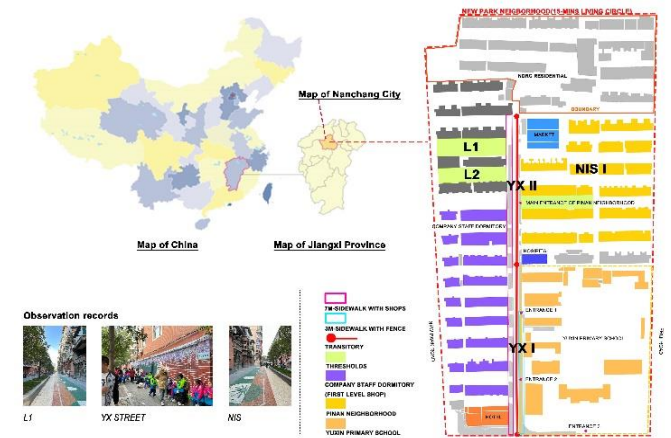


Figure 3. Master plan of new park road neighborhood
Source: Author illustration

4.1 Impact of the street environment on children’s wellbeing and sense of place identity

Studies have shown that the street environment has a significant impact on children’s well-being and sense of place identity. As shown in Figure 4, the observation of the street found that children, as a crucial group in the urban environment, experience the street environment in ways that profoundly affect their daily life quality and psychological well-being. Safety stands out as a pivotal factor in children’s evaluation of the street environment [71, 72]. Children tend to choose streets that they perceive as safe for their activities, which usually have good traffic management, clear traffic signage, and pedestrian-friendly infrastructure such as wide and well-maintained pavements, and traffic calming measures. One of the children said:

“Today we have gym class, and sometimes when we’re bored, we play a little bit. It’s better here, it’s safer, there’s fewer people, and I usually go here, where I can see other people exercising.”

Such amenities not only ensure children’s safety but also empower them to navigate the city independently, bolstering

their autonomy and self-confidence. Additionally, green environments and play facilities are equally important for children. Green landscaping on both sides of the street and public play facilities provide children with opportunities to get close to nature and recreation, easing the stresses of urban life and fostering a heightened sense of well-being and fulfillment. The presence of these elements also makes the street environment more colourful and attractive. Moreover, children’s sense of place identity is closely related to the social spaces in the street environment [73]. Street spaces that facilitate children to interact with their peers and engage in meaningful activities are seen by children as important places to socialise. These spaces provide children with opportunities to meet new people, interact and learn, as well as to develop teamwork skills and a sense of social responsibility, thus enhancing their sense of belonging and identity in their neighbourhoods [74].



Figure 4. L1 and L2 site observation

The results of the study reveal the important impact of the street environment on children’s lives. Quality street design enhances children’s sense of security, facilitates social interaction, and, in turn, enhances their overall well-being. In order to build child-friendly cities, priority needs to be given to improving pedestrian facilities, adding green spaces, and providing play equipment [14, 20, 35, 42]. This is echoed in the literature review. Then, these improvements not only optimise children’s daily experiences but also contribute to their long-term development and social integration. Streets should be seen as important spaces for children to socialise and grow, and designed with social and psychological impacts in mind, creating a safe and positive environment for children to grow and play.

4.2 Availability of the street environment and children’s access behaviour

The insights uncover several key factors influencing the usability of street environments and children’s mobility patterns. Notably, the closeness of streets to children’s residences and schools, coupled with how well-connected these streets are within the urban fabric, deeply shape children’s daily activities. The link between the physical environment and children’s physical activity, the accessibility and good connectivity of streets is crucial in encouraging children to demonstrate greater activity and independence in their daily activities [75]. As Figure 5 illustrates, streets designed for pedestrian and cyclist friendliness encourage children to independently choose these paths for commuting and leisure, thereby fostering physical activity and social engagement. One of the children said:

“I play here every day, and my mum lets me play on the road for half an hour before I go home and do my homework.”

Furthermore, the condition and design of the streetscape

significantly impact children’s mobility choices [76]. Poorly maintained, illuminated or inadequately signposted tend to be perceived as unsafe access options, which in turn inhibits children’s willingness to use them. Conversely, streets with clean, well-maintained public spaces and amenities designed for children are preferred by children and are often used as their first choice for activities and play. Hence, to make streets more appealing to children and promote healthy mobility habits, planners and policymakers should focus on accessibility, connectivity and design and maintenance standards. By optimising these key factors, the quality of life of children can be improved and their physical and mental health can be effectively promoted.



Figure 5. Documenting of observation of children’s access behaviour in the streets

The above demonstrates the strong link between urban design and children’s daily activities. Child-friendly street design promotes physical activity and social interaction, while the opposite may hinder children’s activity and socialisation [40, 46, 77]. Urban planning needs to take children’s needs seriously and ensure that public spaces are inclusive, accessible and safe. Society as a whole should work together to create safe and fun urban environments for children.

4.3 Children’s perceptions and preferences of the street environment

Research has shown that children have a range of perceptions and preferences for street environments. Overall, children have a strong preference for streets that are vibrant, interactive and provide a sense of safety [78]. They valued streets with diverse amenities such as playgrounds, benches, and green spaces that facilitate a variety of activities and social interactions (as shown in Figure 6). In addition, children emphasised the importance of streets being inclusive and accessible, regardless of age or ability.



Figure 6. Records of children’s activity preferences

The interview data has also highlighted the key role of the street environment in shaping children’s well-being and sense

of local identity. Children emphasise the importance of considering children’s needs and preferences in urban planning and design, particularly within the framework of 15-minute cities. By prioritising child-friendly street environments, cities can contribute to the overall well-being and development of their youngest citizens, while fostering a sense of community and belonging [14, 48, 78]. The findings highlight the need for a holistic approach that incorporates children’s perspectives and prioritises their well-being in all aspects of urban development.

It can be ascertained that children’s perceptions of and preferences for the street environment are crucial to urban planning. Valuing and integrating children’s perspectives enhances their quality of life and also fosters their sense of belonging to the community, reflecting the city’s respect and care for children’s rights [72, 79]. In future relevant planning and design, more consideration should be given to children’s needs to shape an urban environment that is closer to their lives.

4.4 Children’s perspectives: Interviews and drawings of ideal cities and streets

During the interviews, many children shared their insights in depth, frequently mentioning key elements such as safety, play equipment, green environments and social spaces. There was a general desire among them to be able to walk and ride safely on bright, spacious streets with clear traffic signs and signals. In addition, children expressed a desire for more play facilities to add to the vibrancy and fun of city life. One child interviewed said:

“I love the little square and the pavilion to play games, jump rope, and get out of the rain.”

The study also organised a drawing activity to further visualise children’s visions, inviting them to present their ideal cities and streets on canvas. As the future owners of cities, children’s voices and visions are crucial to creating urban environments that are pleasant to live in, visit and learn in the study [80]. Therefore, future urban planning and design practices should focus more on children’s participation by incorporating their needs and visions.



Figure 7. Children’s ideal city streets and life scenes

Figure 7 identifies several key elements from children’s drawings. Firstly, safety is an obvious concern, as reflected in drawings of spacious roads, clear traffic signs and solid

bridges on both sides of the river. The assessment of child friendliness closely links children’s basic need for safe travel to affordability and school trips. Secondly, children expressed their concern for the natural environment and greenery in their drawings, which also alluded to their expectations for a harmonious co-existence of nature and the city in terms of place identity. In addition, children’s drawings depicted different houses, vehicles, and people, presenting a diverse and vibrant cityscape, reflecting children’s aspirations for social interaction and public life.

5. CONCLUSION AND RECOMMENDATIONS

This study aims to provide insights into how urban planners and policy makers can create cities that are both sustainable and conducive to the healthy development of children. The practical implications of the findings of this study are to provide urban planners and policymakers with insights into how to create cities that are both sustainable and conducive to children’s healthy development. By exploring children’s perceptions of and preferences for the street environment within the unique context of the 15-minute city concept, the study reveals the complex interplay between the physical and social environments and children’s daily lives.

Through a qualitative perspective, combining observation, interviews, mapping, photography and discussion, the study reveals several key findings. Street environments have a significant impact on children’s well-being and sense of place identity. Subsequently, safe, accessible and engaging street spaces are critical to fostering positive experiences and a sense of belonging for children. The analysis highlights key factors that influence the usability of the street environment and children’s access behaviour. A child-centric approach is imperative in urban planning and design. By prioritising children’s needs and perspectives, cities can become more inclusive, sustainable and resilient. Based on the findings of this study, the following recommendations are made to provide guidance to urban planners and policy makers in creating child-friendly and sustainable cities:

- (1) Advance pedestrian-friendly design. Prioritise pedestrian-friendly design elements to encourage children and their families to walk and be included in their local communities.
- (2) Integrate play spaces into street design. Incorporate age-appropriate play spaces into the street environment to meet the diverse needs and interests of children and promote physical activity, creativity, and social skills.
- (3) Foster community participation. Establish platforms and mechanisms for the active participation of children and their families in urban planning and decision-making processes.
- (4) Enhance intergenerational harmony. Design street environments that meet the needs of all age groups, promote intergenerational interaction and foster a sense of community. This approach not only promotes the social development of children, but also enhances the inclusiveness and cohesion of communities.

By implementing these recommendations, contributions theoretical advancements, methodological innovations, and meaningful policy implications. Ultimately, this paves the way for the creation of sustainable and genuinely child-friendly cities that nurture the growth and development of future generations.

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