

A territorial leeway: Children's adaptive behavior in tourism neighborhood, Prawirotaman, Indonesia

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ARTICLE INFO	ABSTRACT
<i>Article history:</i> Received August 04, 2025 Received in revised form Apr. 30, 2026 Accepted May 13, 2026 Available online June 01, 2026 <i>Keywords:</i> Children's drawing Play behavior Play range Spatial experience *Corresponding author: Tika Ainunnisa Fitria Universitas 'Aisyiyah Yogyakarta, Indonesia Email: tikafitria@unisayogya.ac.id	Many urban kampungs in Yogyakarta have undergone significant transformation into tourism-oriented destinations, including the neighborhood of Prawirotaman. This transformation has contributed to the reduction of children's play spaces and has limited opportunities for outdoor play experiences compared to those available to children living in rural environments. Consequently, children are required to continuously negotiate and adapt to the spatial and social changes occurring within their neighborhood context. Accordingly, this study seeks to examine the relationship between play territoriality and the spatial experiences that shape children's behavioral responses, while simultaneously addressing existing research gaps concerning children's territorial adaptation behavior. Data collection was conducted through snapshot observations to document children's play activities and movement patterns, including gestures, conversations, spatial settings, and the objects involved in play activities. These observations were further supported by drawings, narratives, and mapping techniques. The study employed a behavioral approach combined with content analysis methods. The findings reveal that children living within kampung environments adapt to ongoing neighborhood transformation through forms of territorial leeway that enable play activities to persist. Furthermore, children's spatial experiences significantly influence their adaptive behavior, their perceptions of transitional spaces, and the extent of their play territories. This study contributes to the enrichment of architectural behavioral theory and provides a foundational framework for the development of child-friendly residential settlements.

Introduction

Children's everyday activities constitute an integral component of neighborhood life and spatial experience. Discussions concerning children and space have continuously evolved through various cross-disciplinary studies, including research on spaces of childhood (Adams and Savahl 2017), outdoor environments (Alexander, Cocks, and Shackleton 2015), children's social context (Rasmussen 2004),

children's play experiences (N. F. Aziz and Said 2016), opportunities for play (Martin, Jelić, and Doktor Olsen Tvedebrink 2023). These perspectives emphasize the spatial functionality of the environment as well as children's capacity to appropriate and utilize space, particularly for play activities. The relationship between children and space can therefore be understood as a transactional process (N. F. Aziz and Said 2012; Norazlan and Said 2023) one that is inseparable from schools, homes, and public spaces (Rasmussen 2004; Sari and Lai 2023). This



relationship is closely associated with children's behavioral patterns as they explore their surrounding neighborhood environments. Understanding children's environmental behavior is essential for supporting their ability to inhabit healthy neighborhoods (G. W. Evans et al. 2007). Through environmental exploration and play activities, children develop broader ecological literacy and spatial awareness (Norazlan and Said 2023). Nevertheless, urban children generally experience fewer opportunities for outdoor play compared to children living in rural settings. Children residing in urban neighborhoods, including kampung environments, encounter spatial limitations and high building density. Urban conditions have contributed to decreasing levels of children's mobility (Loebach and Gilliland 2016), while children's geographical territories have become significantly smaller than those experienced by previous generations (Loebach and Gilliland 2022). This condition indicates the marginalization of children within their own environments. In contrast, the kampung represents a neighborhood structure characterized by active social interaction and flexible territorial boundaries (Maliki, Abdullah, and Bahauddin 2015).

Children's behavior can be more comprehensively understood through play activities, as play reveals children's spatial characteristics and relationships with their environments. However, play remains infrequently utilized as an analytical framework for examining children's relationships with space and the environment (N. F. Aziz and Said 2016). Meanwhile, children's engagement with preferred play spaces reflects their attachment to place and their sense of belonging within the neighborhood context (Loebach and Gilliland 2022). Such spatial freedom becomes increasingly constrained as kampung environments undergo spatial transformation. Consequently, children's play territories become more restricted, both spatially and temporally (Visser and van Aalst 2022). Territory itself may be understood as a spatial system associated with ownership and defense by individuals or groups (Odunlade and Abegunde 2023). Accordingly, this study focuses on children's behavior by examining the relationship between play territoriality and children's spatial experiences.

Children and play territorial

Neighborhood transformation contributes to the reduction of children's play spaces (Loebach and Gilliland 2022). Conversely, children demonstrate strong interest in playgrounds that provide diversity, novelty, and exploratory experiences (Almers et al. 2021). Play constitutes an essential daily need for children and involves dynamic movement across multiple spaces (Yusof et al. 2026). Children's play territories generally consist of spaces surrounding their homes, including transitional spaces (Smith et al. 2023), which function as primary mechanisms through which children learn about and understand their neighborhood environments (van Heel, van den Born, and Aarts 2023). Through play activities, children simultaneously establish and negotiate their own territorial domains.

Children often encounter contradictory conditions between ongoing neighborhood transformation and their own spatial preferences. In response, they construct spaces of interaction and continue to seek spatial experiences within residual or intermediate spaces (Adams and Savahl 2017). In summary, children's capacity to adapt to the limitations of play space frequently remains overlooked within existing discussions (Almers et al. 2021). Children typically engage in play collectively and demonstrate familiarity with outdoor environments beyond their homes (Yusof et al. 2022). This condition reflects their confidence in determining where play activities will occur. They establish their own territories and maintain spatial flexibility to support social interaction. Children access play spaces according to their abilities, ranging from categorization and spatial recognition to risk-taking behavior. Although children naturally act as explorers, their responses remain dependent upon individual perceptions of situations and environments (Hansen Sandseter 2007). Therefore, children's behavior cannot be separated from territorial exploration, which emerges from the ways they perceive and interpret their neighborhoods, including kampung environments.

Children's spatial experiences and Kampung

Children experience spatial transformation within their environments through motoric and sensory engagement (Norazlan and Said 2023). Interactions between children and their environments may therefore be interpreted as transactional processes. Children identify favorite places for play and social interaction with peers.

They are attracted to challenging environments and to spaces containing objects that stimulate observation, learning, and curiosity (N. F. Aziz and Said 2012). Children's interactions with their surroundings are shaped by their intentions, desires, and daily plans (Yusof et al. 2022). Consequently, children's spatial experiences reflect their behavioral responses toward neighborhood transformation. The limited spatial conditions within kampung environments therefore indicate distinct forms of territorial behavior among children. The specific characteristics of children's spaces have been widely discussed within previous studies (Karsten 2005). Earlier research has primarily focused on children's outdoor activities as part of their everyday spatial experiences (Sari and Lai 2023), including studies concerning children's use of outdoor environments (Loebach and Gilliland 2016), home-school journey (Sari and Lai 2023), educational journey (Rifai et al. 2025), children's geographical play behavior (Yusof et al. 2022), and ecological literacy (Norazlan and Said 2023). However, most of these studies have been conducted within natural or less urbanized settings. Research addressing children's behavior within transformed neighborhoods remains relatively limited.

This study therefore aims to address the existing research gap concerning children's territorial behavior in relation to adaptation processes. Using behavioral and territorial approaches, the study investigates children's territorial behavior within a tourism-oriented neighborhood through their play activities in transitional spaces. The research was conducted in Prawirotaman, a prominent tourism district in Yogyakarta that is currently experiencing rapid spatial transformation. The transformation of kampungs into tourism destinations across Asia has previously been discussed in relation to cultural and urban transitions, including studies conducted in Chatang Village, China (Shawei, Dinghang, and Zhong 2018), Tamsui, Taiwan (Liu 2012), Busan, Korea (Hong and Lee 2015), Morten, Malaysia (I. L. A. Aziz 2018). Within this study, particular attention is given to the ways children utilize transitional spaces, such as alleys and aisles, as territories for play. Play functions as the primary indicator for understanding children's behavior (N. F. Aziz and Said 2012) while transitional spaces represent the principal territories for everyday interaction within kampung environments (Fitria et al. 2022).

Children's behavior also reflects dynamic interactional patterns occurring in pairs or groups (Heft et al. 2014). Therefore, this research employed specific methods to collect data concerning children's behavior. Investigating children's experiences requires careful attention to interconnected aspects in order to identify the relationships embedded within their spatial experiences and behavioral patterns (Kalvaitis and Monhardt 2012).

Methods

Snapshot and walking along

Behavioral data were collected using snapshot observations, a method considered effective for documenting activities within relatively short periods of time (Can and Heath 2016). Activities such as photographing, walking, and conversing illustrated the interaction between children and their neighborhood environments, while simultaneously revealing their emotional expressions and responses toward space (Askerlund and Almers 2016). Furthermore, these observations documented: 1) children's play activities and movement patterns, 2) gestures and bodily expressions, and 3) conversations occurring during play activities. This process was complemented through the use of Global Positioning Systems (GPS) to mark spatial locations. Specifically, GPS tracking was employed to monitor children's activity patterns (Loebach and Gilliland 2016), thereby identifying meaningful places through geographical positioning and spatial mapping (Kytä, Broberg, and Kahila 2012).

Children's drawing and narrative

Investigating children's spatial preferences requires methodological approaches capable of eliciting their narratives and subjective experiences (Alexander, Cocks, and Shackleton 2015). Therefore, this study utilized children's drawings as a medium for exploring their play preferences. More specifically, children were asked to illustrate their play journeys, providing insight into their everyday experiences and spatial preferences within the neighborhood environment, while simultaneously reflecting how they perceive and understand their surroundings. To strengthen the interpretation process, the drawings were accompanied by

narratives expressing the children's feelings and thoughts (Kalvaitis and Monhardt 2012). In summary, the integration of drawing methods and narrative interpretation enabled the exploration of children's emotions, memories, and place attachment toward their kampung environment and the objects embedded within it. The drawings revealed both: 1) the settings in which children played, and 2) the objects they observed, utilized, or discovered during play activities. Through these elements, the observations aimed to understand children's experiences while engaging in play within transitional spaces. Subsequently, the drawing results were analyzed using content analysis methods, which provided insights into behavioral patterns, spatial meanings, and activity structures (Kalvaitis and Monhardt 2012).

Protocol

This study was conducted in accordance with a structured data collection protocol. An official letter issued by the Department of Architecture at Universitas Aisyiyah Yogyakarta explained the objectives and purposes of the research. The researcher obtained permission to participate in, observe, photograph, and document children's activities. Representatives of the local community verbally requested permission from parents and gathered the participating children at a resident's house for the drawing session. During the research process, children were given freedom in producing drawings and in leaving the session whenever desired. Permission was consistently requested before taking photographs, and the results were shown to participants afterward.

Research involving children should prioritize ethical considerations, sensitivity, and children's autonomy in making choices (Yusof et al. 2022). All collected data were used exclusively for research purposes.

Results and discussion

Children's Spatial Experience

Transitional spaces stimulate and shape children's play behavior within neighborhood environments (Yusof et al. 2022). Children were asked questions concerning "where they go to play" and "what they saw, used, or discovered" during their play activities. The play activities were categorized according to Chawla (2002), including actions, verbal expressions, and circumstances encountered during play. This categorization assisted in understanding children's experiences while playing within transitional spaces. In Prawirotaman, most children utilized alleys, aisles, and vacant land as play spaces, with the majority of games occurring within these transitional environments. Activities included meeting friends at guard posts, playing hide-and-seek, playing various games, riding bicycles, and playing ball games. Children appropriated narrow spaces between houses, guard posts, trees, parked vehicles, clotheslines, and fences during play activities. Their spatial experiences were constructed through memory, movement, and engagement with surrounding objects within the transitional space (figure 1).



Figure 1. A drawing by a 7-year-old boy (left): "I am walking through the alley seeing homestays and my friend's houses. I am running after a kite that broke because of strong winds. I am riding my bike, playing football, and seeing cats. I am playing with my friends, sister, and cousin." A drawing by a 9-year-old girl (right): "I am walking through alleys and streets with my friends. Playing cooking and selling are my favorite games. I am picking banana leaves and stems to cook."

Furthermore, children's spatial experiences were influenced by their spatial preferences. For instance, some children played with Lego and cards within the aisle located in front of their houses, remaining in these areas for extended periods of time. Other children incorporated play into their primary daily activities. For example, children played in front of the mosque by

climbing fences and running during breaks from reciting the Qur'an. These findings indicate that children construct spatial experiences within transitional spaces through the exploration of surrounding objects, the selection of preferred play environments, and the formation of memories during play activities (figure 2).



Figure 2. Children's spatial experiences: children playing Lego in an aisle (left); children climbing fences during breaks from Qur'an recitation activities (right)

Children's perception towards transitional space

This observation aimed to understand children's perceptions regarding transitional spaces within their kampung environment through the question: "Why are you playing here?" This question sought to identify children's physical and spatial perceptions of transitional spaces. Children utilized transitional spaces to meet friends, continue games, discover new experiences, avoid boredom at home, or supervise younger siblings. These findings indicate that children develop diverse perceptions of transitional spaces through play activities. They frequently allocate time for play even while carrying out other primary activities. This demonstrates that children's perceptions of transitional spaces are influenced by the diversity of activities accommodated within them and by the spatial flexibility these environments provide for play. Transitional spaces were therefore perceived as shared environments. Moreover,

children demonstrated a sense of ownership toward transitional spaces by marking territorial boundaries during games. For example, a group of boys debated territorial claims by stating: "This is my area"... "I played here yesterday"... "I usually play here"... "This has been my area since yesterday" (while marking the play territory using sandals)... "You should play there" (while climbing and pointing toward another location).

These findings indicate the existence of shared perceptions among children concerning transitional spaces (figure 3). Children interpreted the territoriality of transitional spaces as representational and symbolic environments associated with their play activities within the kampung. This condition differs from formal residential settlements, where children's play spaces are generally designated as specific playground facilities. Within the kampung context, children spontaneously constructed and negotiated their own play territories. Furthermore,

children identified play spaces based on locational references, such as “the schoolyard,” “near the mosque,” “at the cakruk (guard post),” “south of the warung (stall),” or by referring to friends’ names, such as “Let us go to Adi’s house.” These findings suggest that children within kampung environments do not formally recognize the concept or terminology of a playground. In addition, children demonstrated little concern regarding the physical quality of transitional spaces. This was revealed through responses to the question: “How do you feel when you play

here?” Children consistently expressed feelings such as “fun,” “happy,” and “enjoyable.” These responses indicate that children perceive transitional spaces as environments for interaction, as personal territories, and as spaces to which emotional attachment is formed. This spontaneous perception emerges dynamically during play activities and continuously shifts throughout the course of the game. Consequently, transitional spaces have become everyday territories for children within the kampung environment.



Figure 3. Children’s perceptions of transitional spaces: children marking territorial boundaries during play (left); children identifying a friend’s yard as a play space (right)

Children’s play range

Children’s territorial play ranges, extending from their homes to play spaces, were generally accessed independently or collectively with friends. Their play territories were concentrated within the kampung environment and were typically located approximately 200–500 meters from their homes within walking distance. In contrast to [Zhou et al. \(2022\)](#), who emphasized the influence of residential scale on children’s physical activity, this study found that the highest concentration of children’s play activities

occurred within alley spaces adjacent to mosques and open fields ([figure 4](#)). These areas offered opportunities for exploration and spatial experience for both individuals and groups. Building upon this observation, transitional spaces in Prawirotaman provide children with opportunities for independent outdoor mobility under relatively low levels of supervision, enabling children to independently determine the nature and location of their play activities ([Lin et al. 2023](#)).

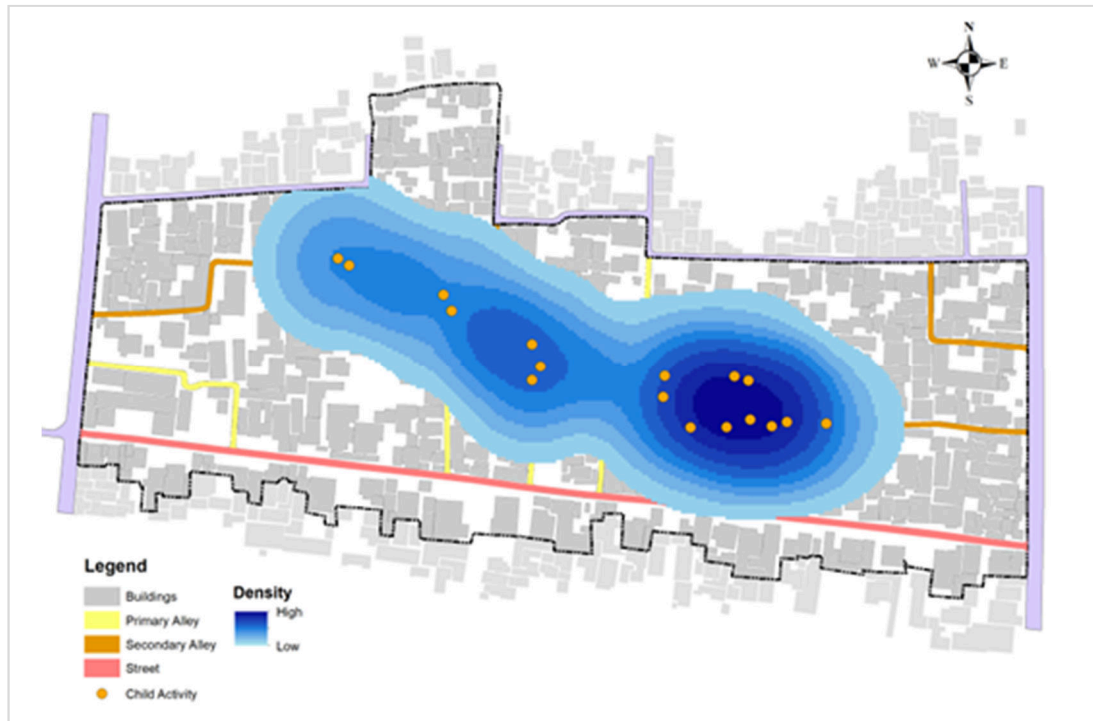


Figure 4. Distribution and density of children's play territories within transitional spaces

The territorial pattern observed was largely unstructured, reflecting the organic spatial configuration of the kampung and its transitional spaces; nevertheless, children clearly recognized territorial boundaries. These boundaries were controlled either individually or collectively. For example, a 10-year-old girl explained that she enjoyed playing along the alley but was prohibited by her mother from going beyond the kampung gate. In addition, children recognized spaces they considered attractive or beneficial. Two girls aged 7 and 9 stated: "We are going to the homestay" (while mentioning its name), "we can access the Wi-Fi there." Meanwhile, a group of boys negotiated their movement before beginning play: "Let us go to the mosque"... "No, we went there yesterday, let us go to the kindergarten yard instead" (figure 5). Moreover, the organic spatial structure of the kampung encouraged children to identify alternative routes through aisles leading toward their play territories. Children could also easily recognize and remember these routes. Spatial boundaries significantly influence children's movement patterns, environmental sensitivity, and their initial processes of spatial exploration (Weir 2023).

In summary, children within the kampung environment demonstrated a clear understanding of the limits associated with their territorial movement. In contrast to Helleman, Nio, and De Vries (2023), who argued that children choose outdoor play environments solely based on pleasure, this study indicates that children also understand and independently negotiate their movement patterns, even in the absence of parental supervision. Their spatial exploration depends upon the configuration of transitional spaces and the territorial leeway available for movement. Children engage in territorial negotiations involving spatiality, parents, and playmates when determining their play ranges. They demonstrate confidence in deciding where they will play, establish territorial boundaries, and maintain flexibility to support social interaction. Children engage in play according to their abilities, ranging from categorization and orientation to risk-taking behavior. Their everyday outdoor movement patterns are directly influenced by spatial elements perceived as interesting or meaningful. These findings reveal a strong relationship between neighborhood structure and children's spatial experiences. Within urban neighborhoods, kampung environments continue to provide opportunities

for spontaneous movement and for children to creatively and socially explore outdoor spaces.



Figure 5. Children's play boundaries: A group of boys is negotiating before playing

Conclusions

Children's behavior is strongly influenced by the ways in which environments provide opportunities and spaces for play. Children independently explore and appropriate their living environments to fulfill their play needs, thereby strengthening place attachment and emotional engagement with their surroundings. These findings contrast with [N. F. Aziz and Said \(2016\)](#), who argued that the design of children's outdoor environments frequently fails to accommodate children's needs and preferences, resulting in low levels of environmental engagement. Accordingly, the conventional concept of the playground as a formally designed and purpose-built space for children appears unsuitable within the kampung context. Such a concept compartmentalizes and restricts children's activities by confining play to designated playgrounds and schoolyards. Instead, the concept of "play space" is more appropriate for kampung environments, where children utilize transitional spaces for outdoor activities and social interaction. This spatial concept enables children to determine their preferred environments, generate spontaneous activities according to their own ideas, confidently establish movement routes, and satisfy their curiosity through independent learning and environmental

literacy. Furthermore, the transformation of the neighborhood into a tourism-oriented environment does not significantly influence children's perceptions of transitional spaces.

Moreover, the findings of this study partially differ from [Loebach and Gilliland \(2022\)](#), who suggested that children rely on urban public-space facilities for play activities unavailable within their residential environments. Within the kampung context, children freely utilize transitional spaces and surrounding objects as components of their play environments. Their play ranges remain concentrated within the neighborhood. Furthermore, kampung environments do not formally recognize the terminology or spatial division associated with public space, as territoriality emerges flexibly through mutual agreement and everyday social habits. Consequently, children within kampung environments independently and spontaneously construct concepts of territoriality within their neighborhoods. In other words, children adapt to neighborhood transformation through territorial concepts shaped by spatial experiences, perceptions of transitional spaces, and play-range patterns.

Children within kampung environments adapt to spatial transformation through forms of territorial leeway that support play activities. They are permitted to explore outdoor

neighborhood environments freely and repeatedly. Transitional spaces provide extensive opportunities for enjoyment, exploration, and social interaction. Children's adaptation to spatial transformation will continue as long as transitional spaces, functioning as their play territories, continue to exist. Finally, this study is expected to enrich theories of architectural behavior, particularly regarding children's territoriality. From a practical perspective, the findings provide recommendations for urban spatial planning policies aimed at creating child-friendly settlements and informing detailed spatial planning strategies. In summary, urban planning processes cannot be separated from the existence of kampung transitional spaces, including alleys and aisles, as essential components in the creation of sustainable cities.

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Author(s) contribution

Tika Ainunnisa Fitria contributed to the research concepts preparation, methodologies, investigations, data analysis, visualization, articles drafting and revisions.

Mohd Hisyam Rasidi contribute to the research concepts preparation and literature reviews, data analysis, of article drafts preparation and validation.

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