

## AFFORDANCES OF STREET ENVIRONMENT FOR CHILD-FRIENDLY CITIES DURING HOME-SCHOOL JOURNEY IN OLD CITY ZONE OF MAKASSAR

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Received (diterima): 07th September 2016

Accepted (disetujui): 10th October 2016

### ABSTRACT

*Home-school journey is part of children daily routine in many Indonesian cities and towns. Consequently, the street environment is an important component for children's growth and development. In the last two decades, many urban centers have been identified as unsuitable for children's home-school journey due to issues relating to high urban density and traffic congestion. Therefore, many children are denied the opportunity to experience the outdoor environment. Their life is centered at homes and within their schools. There are few studies that explore the affordances of street environment on home-school journey for less privileged children in old city zones. This study explores the affordances of street environment that influence children's play behavior and performance during their home-school journey. The elements and environment of home-school journey play an important role in promoting children's active free play toward their environment. This study observed 40 less-privileged children, aged 9 to 11, from low income families that walked to their schools in the old city zone of Makassar. Data on children's activities and their perceptual responses on the street environment during the journey were elicited using one method which was children's observation. The data were content analyzed using Nvivo software. The result revealed that the children displayed a variety of behaviors related to the social transaction, physical play and decision making. Affordances of street environment are associated with elements including buildings, vehicles and street furniture whereby the children's direct engagements lead to indirect learning. Therefore, middle-childhood children recognized that the street environment is part of their routine living experience.*

**Keywords** : child friendly, journey, affordances

### A. INTRODUCTION

Affordances of home-school journey are measure by its ability to support children's physical, social and cognitive development (Malone & Tranter, 2003). The elements and environment of home-school journey play an important role to promote children active free play toward their environment. Most of children love to play in natural environment. Nonetheless, the children in urban area have less opportunity to play in natural environment (Chatterjee, 2005; Chawla & Heft, 2002; Malone & Tranter, 2003; Veitch, Salmon, & Ball, 2010), these children from urban area end up playing around their school, home and their surrounding area.

In urban areas, most of children are drove to school reducing the number of children walking to school (Joshi, Maclean, & Carter, 1999). Generally, the children walks to school are come from poor families where they did not own any vehicle. Therefore, this study aimed to identify the affordances of street environment on home-school journey from less privileged children's perspective. These children usually do not go home directly after school end. They usually make stopovers at the shop, playing or visiting their friends. Regular uses the street environment make children engage and familiarize as well as creating meaningful bond between children and the environment. Consequently, the street environment will be '*my place*' where children recognize it as their special place.



**Figure 1.** The situation of children walks to school in the old city zone of Makassar

Children experience along their journey in the urban area may trigger three element of children function. These element consist of social, cognitive and physical element (Johnson, Onwuegbuzie, & Turner, 2007; Westman, Johansson, Olsson, Mårtensson, & Friman, 2013). The development of children cognitive is an intellectual process as well as memorializing, attention and figuring out problems and making decision. Children's physical development is relevant to motor skill development such as jumping, riding and running. The degree of participation in play activity among children can be describe by the children's maturity in social, physical and cognitive development (Hart, 1979).

The mode of travelling in street environment is imperative to the children. Travelling in street environment is significant to the children's physical movement as well as helping them to distinguish their travelling route more effectively.

## **B. LITERATURE REVIEW**

### **1. Level Affordances**

In relation to children's engagement with their environment, affordances have two levels: level potential and level actualized. The potential affordances level is refer to an infinite number of possible affordances of an environment or object (Kyttä, 2002). In old city zone, the street environment has elements or object that the children perceived it as play equipment. Such as gutter, electric poles, sand bar, vehicle parking. The children love to play in their home-school journey. The extend of potential affordances is define by individual's qualities, such as physical skills and bodily proportion, as well as social needs and intentions. The children

go to school and back by walking with difference route. Usually, they back from school with the distance and takes time much longer than go to school. The reason is they can play together with their friends along their journey.

The level of actualized have three types are perceived, utilized and shape (Kyttä, 2002). Perceived affordances are what an individual recognizes when observing the environment. Utilized affordances are opportunities that exist and can be occupied through direct physical interaction with environment. Shape affordances involved the manipulations of environment features, which change the environment's properties either, function or form.

The affordances refer to the functionally significant properties of the environment. According to Heft's functional Taxonomy of affordances in children's outdoor environment, as adult perceived the elements in the environment from aesthetic value, but children valued the elements, either the natural features or design feature, from its affordances and playability values (Heft, 1988). In old city zone, design features have been made by human, not natural feature, such as building block, street, electric poles, gutter and some small trees. The children views design features as play equipment, such as gutter as jumping place.

## **2. Street Environment**

The phenomenon of accompanied travel to school has several important consequences. The journey to school is a major source of traffic at peak hours and ads to congestion, accident and pollution (Royal Commission on Environmental Pollution, 1994). Such journeys also cost parents time (Gershuny, 1993) and deprive children of opportunity for regular exercise (Armstrong, 1993). A proactive idea in this area is Hillman's assertion that a prolonged period of escort to school and other destination is likely to hamper development of children's spatial skills, limit their knowledge of the environment and damage their growing independence (Hillman, Adams, & Whitelegg, 1990).

In old city zone, the street environment not only connects between two places, such as meet up with friends, playing, food trade, and parking. For children who lived in old city zone, the streets are usually they used for their activities. Physical and visual contact and social life can be the experiences of children's everyday live throughout in the street environment. The children can a lot of experiences on their journey. The street has potential as a place for children to learn and play.

Based on pilot study, in old city zone, there many attributes and characteristic in the street. Such as traffic light, buildings, vehicle parking, gutters, electric poles, police patrol and some little trees.

## **3. Children's Experience of Place**

Children experience the many attributes that make a place that is important for a child's play environment (Hart, 1979). They are commonly seeking opportunities to demonstrate their behavior to develop and skills (Eccles, 1999). The desire encouraged the children to play in complex, challenging and exciting environment. It was due to their strong feeling of competence and sense of confidence. Therefore, children can develop their sense of competence among their friend through play.

Play with their friends as a child experience. The children are playing in every time and everywhere with their friends, as well as when the back from school, they play together along their journey. They play jumping, chasing each other, hide and seek. In other word, that home-school journey is a place to the children play with their friends.

#### **4. Child-Friendly Environment**

The definition of Child-friendly environment is the children obtain the physical, social and mental skill through their playful interaction in the environment around them. They have right to have a positive place identity and to participate in the process that affects their lives and futures. Children's views of friendly environment are quite similar across the word and across time. Children value independent mobility and various opportunities for action, place to meet friends, green areas and basic services, safety and continuity. It allows the children to actualize the potentials of its feature and setting.

In urban area, modern society limited children's everyday lives. The effect of increased road traffic has reduces children's independent mobility, in particularly with regard to their play areas and their school route who children go and back from school by walking, which in turn affects their developmental skills (Bjorklid, 2007; Kytta, 2004; Nordstrom, 2009; Prezza et al., 2001).

The call for child friendly cities is rooted in the recognition that cities are home to an increasing proportion of the world's children. Yet, most cities are largely unfriendly to children and have government that takes few steps to address children's need and assess children's properties. By 2002, close to half the world's children lived in urban centers, most of them in low- and middle income. Although poverty is commonly perceived as predominantly a rural phenomenon, a large and growing proportion of the world's poorest and most deprived group live in urban areas.

Cities have a greater potential for services and opportunities than rural areas. Resource mobilization is easier, information is readily available and high population densities increase the opportunity for efficiency and economies of scale in service's delivery. But this huge potential needs to be harnessed by an effective governance system. In child friendly city, good governance entails giving visibility to the child in the city development agenda and granting children an opportunity to participate in the decision-making process. From the perspective of the convention on the right of the child, a child friendly city pursues its obligation to realize the whole range of human right for all of its children.

According to Ringgio (2002) Fundamentally, a child friendly city aim to guarantee the right of all young citizen to: influence decision about their city; express their opinion on the city they want; participate in family, community and social life; walk safely in the street on their own; meet up friends and play; lived in unpolluted and sustainable environment and participate in culture and social events.

#### **5. Children's Home-range**

Home-range is closely related to the philosophical concept of territoriality. The term habitual range, travel range, exploration range, permissible range and familial space have also been used to describe home-range. Gifford (1997)

describe territories as something that may be controlled by individuals or by groups and always consist of a space. These could be larger areas such as cities as well as small scale setting such as a room, or a residential block. Home-range has also been recognized not only as one entity but several such as “free range” and “range with permission” (R Hart, 1979). Morris and Hess (1975) assert that one of the gauges for the “homeliness” of a neighborhood would be whether or not the inhabitants can easily walk its boundaries. According to them, the size of neighborhood should not be so large that going from one side to another requires special effort and that its physical size affords a reassuring sense of familiarity for everyone within its boundaries.

Moore and Young (1978) used the term “habitual range” to represent “close to home behavior, incorporating friendship pattern clustered around each child’s home, spilling out onto sidewalks, and extending into more accessible neighborhood spaces such as schoolyards, playgrounds, back alleys, lawns, vacant lots, small vegetated grassy areas., where peers can play together. Habitual range is particularly appropriate to the evaluation of residential districts.

### C. METHOD

This study was conducted at four elementary public schools in *Wajo* area as old city zone of Makassar, Indonesia. Frequency of walking activity in old city zone is high, where it has higher density of land uses. Hence, there is a need pedestrian facility in term of safety and comfort to enable children’s sense of attachment and value.

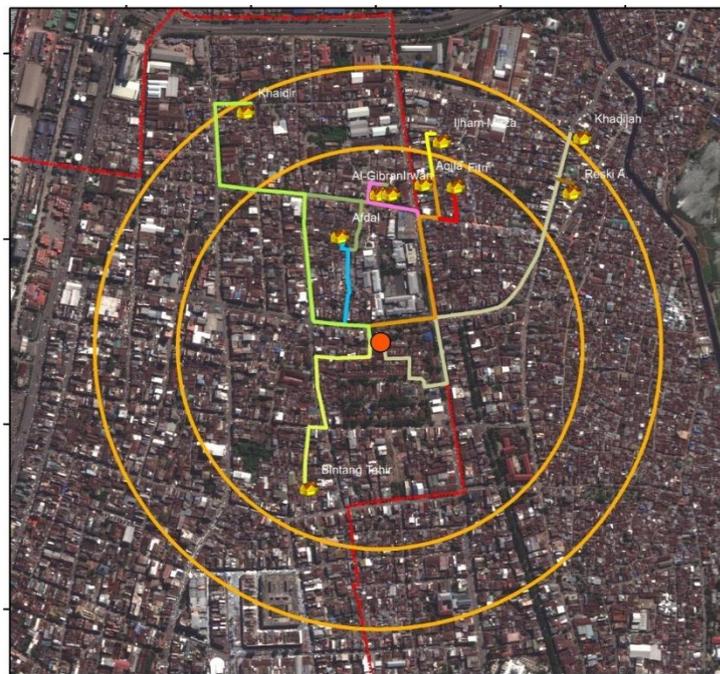


Figure 2. Map of SD Negeri Melayu and the children’s lives

This study focus on children in range of age 9-11 years old that middle childhood. Middle childhood age is a time when children going to school without accompanied by an adult (Joshi et al., 1999) and free active to play (Veitch et al., 2010). In old city zone, the children who walk to school and back are those come from poor family's background (BPS & Social Department Indonesia, 2003). These are family usually does not own any vehicle at home hence they have to walk.

The participatory method was used to explore the affordances of street environment. The children had observing at ranger from their home to school as well as their back from school. The home-school range is referring to territory that surrounds their home-school which provides a context for independent mobility, paly and exploration (Spencer & Blades, 2006). The observation on children plays due to their movement, element that they encountered around the street environment along their journey. These children had followed in order to observe their movement as well as their activities along their journey. The video camera had used in this observation to document the children's activities. These data were content analyzed using Nvivo 10 software.

#### **D. RESULT AND DISCUSSION**

The affordances refer to functionally significant properties of the environment. The children go to school and back by walking with difference route. They back from school with distance and take times much longer than go to school. The reason is they can play together with their friends along their journey as well as they have carried big bag school (see figure 3).

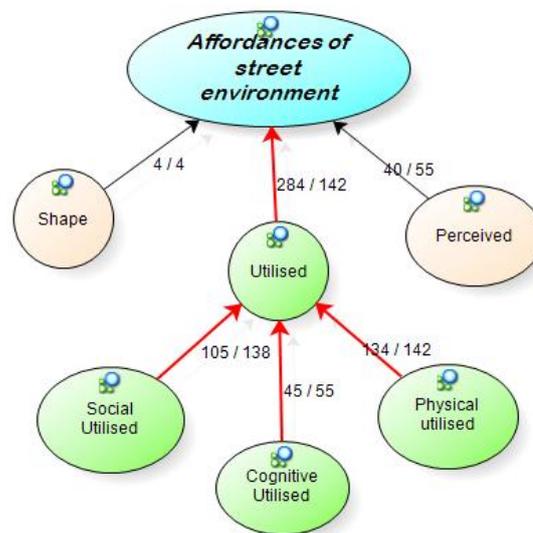


**Figure 3.** The children have bodily proportion and actualized affordances

The children activities in home-school journey indicated the actualized affordances of the environment. The actualized affordances were the individual relationship with the environment (Kyttä, 2004) which occurred through movement and perception (Heft, 1988). Kyttä, (2002) categorized the actualized affordances into three types: perceived, utilized and shape.

According to Gibson (1979), affordances of an environment are associated with element which offer or provide the user and it is perceived through direct action connected with indirect learning process. The other words, that the element or objects are considered as an opportunity for action as functional value. The objects offered for grabbing, twisting and lifting. On home school journey in old city zone, there are some objects that can be utilized affordances of children perception. Such as running, they are playing game with the role, the winner is who can reach the vehicle when the vehicle passed them until traffic light zone.

In old city zone, the street environment have found element that the children perceived it as play equipment. There are gutter, electric poles, sandbar, parking area. The grab and twisted around the electric poles with one hand while they jumping on gutter, they do during back from school.



**Figure 4.** The affordances of street environment

The affordances of street environment have found that the utilized affordances have three elements, which are physical, social and cognitive. Physical utilized is most activities in children's playing. They playing along they journey with their peers by elements of street environment. The home-school journey is also potentially important opportunity for establish daily physical activity.

Social utilized, children were playing, while they chit chat with their peers and others adult. Children appreciate situation that provide locations for them to have interaction with their friends (Castonguay & Jutras, 2009; Korpela, Kyttä, & Hartig, 2002; Min & Lee, 2006). Traveling without adult supervision provide children with increased opportunities to converse with their friends and to explore their surroundings (Romero, 2007). In other words, living surroundings which do not allow children's unaccompanied play due to a lack of an attractive play area or to the danger created by heavy street traffic.

Cognitive utilized, interaction between children and their environment varies regarding to whether the children walk to and from school on their own. The amount and type of environmental experience will be crucial in development of spatial representations of the environment (Hillman et al., 1990). This study has to support Hart (1981) that suggested that mode of travel in the environment will be important, and that if physical movement is relevant to how children learn routes. Children can socialized where they attach with environment as well as they known very well the spatial around their area. In fact, when children travel to and from school by walking, they explore to discover their environment. Its means that children's walking is merged with exploring and discovering of the environment in their route to and from school.

Most studies have found boys to be more advanced than girls, not because of difference in spatial skills, but due to the fact that in many societies boys are accorded greater freedom to explore or they may be more bold in challenging parental restrictions (Moore & young, 1978; Spencer & Wooley, 1998). It found in pilot study, that boys active freely in surrounding area. It cause of the boys have more spatial freedom, more opportunities to explore and manipulate their environment, while the girls prefer doing social activities.

Wardle (1990) argue that greater freedom afforded children in outdoor environment may provide them with greater opportunities to direct their own learning, and to select the kids of play that interest them. Wardle maintains that such opportunities are particularly important in contemporary society where the scope for quality, child-initiated play is decreasing (Wardle, 1990).

According to Pollowy (1977) by age of nine, they explore the far environment. They are capable of riding their bicycles to distant point and need the appropriate physical/spatial arrangements and interpersonal and socio-cultural context to carry out these activities. They can also use public transportation (depending, of course, on the particular socio-cultural context). The children aged 9 to upper, they begin to travel unaccompanied (Romero, 2007) on the homeschool journey and playing in their journey (Hillman et al., 1990; Joshi et al., 1999).

Children's home-range is affected by obstacles including traffic, lack of sidewalks, and fear of crime (Berg & Medrich, 1980). Children who cannot play unaccompanied in their living surrounding are worse off with regard to motor skill a development, social behavior and overall independence than children from higher quality neighborhoods (Huttenmoser, 1995).

A major emphasis in empirical research has focused on the effect of children's mode of travelling to school and independent mobility on the development of spatial cognition (Rissotto, 2002). In general, children who walk to school draw more detail and correctly oriented maps than those who driven by vehicle. It made effect for children home-school journey by walking in every day. They go to school and back in regularly make they engage and familiarize as well as creating meaningful bound with the environment. Children who walk to and from school show the highest performance in spatial cognition, because of the active relationship with the environment which this involves.

There is a concrete relationship between traffic level and spatial memory tasks, traffic may have adverse effects on the development of spatial skills through the loss of autonomous exploration of the environment (Malucelli & Maass, 2001). The children who go and back from school by their own, they can sketch map of their journey home-school journey and the drawing of the route on blank map of the neighborhood, thus confirming that freedom of movement (Rissotto & Tonucci, 2002).

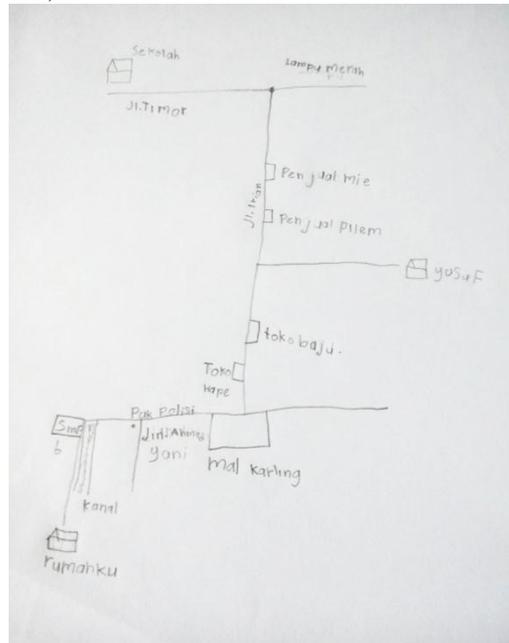


Figure 5. Drawing of the route from home to school by the child's own

## E. CONCLUSION

The affordances refer to functionally significant properties of the environment. The reason is they can play together with their friends along their journey as well as they have carried big bag school. The result revealed that the children displayed a variety of behaviors related to the social transaction, physical play and decision making. Affordances of street environment are associated with elements including buildings, vehicles and street furniture whereby the children's direct engagements lead to indirect learning. Therefore, middle-childhood children recognized that the street environment is part of their routine living experience.

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