



**THE AFFORDANCE OF URBAN CHARACTERISTICS
TO PROMOTE CHILD FRIENDLY ENVIRONMENTS: A
CASE STUDY ON ALKHALIFA NEIGHBORHOOD,
CAIRO**

By

Nourelhoda Adel Ahmed Mazen Hussein

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Architectural Engineering

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The Affordance of urban characteristics to promote Child Friendly Environments: A
case study on Alkhalifa neighborhood, Cairo

Key Words:

Child friendly environment; Affordance; Urban characteristics; Vitality; Alkalifa
neighborhood

Summary:

This research explores the functional meaning of the environment i.e. the affordances, in relation to the urban characteristics to promote the child friendly environments. A methodological framework is deduced from literature to evaluate the child environments using the affordance theory. The child friendly environments are identified through vitality theory to deduce a list of characteristics by which the case study is selected. Alkhalifa neighborhood within the Historic Cairo is chosen as a case study. This research work concludes the main characteristics that influenced the availability of affordances, which are land use ownership, type and diversity. The street scale, walkability, safety and social context show their fundamental role as well.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the reference section.

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Dedication

To the innocence of children..

Acknowledgments

In the name of God, the Most Gracious and the Most Merciful

All praises is to God, and to Him alone. In moments of distress, He guides me, inspires me and enlightens my path. My appreciations to my professors whom I learned from along the path. To my family and friends and husband who showed unconditional support. And to everyone who showed sympathy and passion towards my work. May God reward you all.

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Abstract

The way the neighborhood is built either promotes or restricts the process of interaction and hence child development. To be able to choose a suitable environment in which the child is going to live, grow and develop, it is important to select the neighborhood with urban characteristics that are child friendly. Although Egypt is defined, in terms of child friendly cities, with low children's Rights and services, the environmental dimension of the Egyptian context has not been examined. The aim of this research is to investigate the affordances of the urban characteristics in one of the urban fabrics in the Egyptian context to be able to examine its child friendliness. This research explores the functional meaning of the environment i.e. the affordances, in relation to the urban characteristics to promote the child friendly environments. Heft's functional taxonomy is deduced from literature to be used as a tool to evaluate children environments. The urban characteristics of child friendly environments are theoretically identified through urban theories like vitality, livability walkability and pedestrian friendly theories. Two urban characteristics are chosen for the empirical study, which are mixed land use and hierarchy of function and scale. Two street segments in Alkhalifa neighborhood within the Historic Cairo are chosen for the empirical study. This research work concludes by identifying the urban features that promotes the availability of affordances present in Al-khalifa neighborhood, which are: low street traffic, human street scale, fixed and non-fixed street furniture, road material and landscape. It results in creating an edited tool of Heft's functional taxonomy by adding the urban dimension to the taxonomy.

Chapter 1 : Introduction

1.1. Preface

Healthy child development is determined by a combination of physical, social, family, individual, and environmental factors. A lot of child's development research has focused on the influence of individual, family and school environments without paying much attention to the neighborhood context, yet given that the neighborhood setting is consistently recognized as an important level of influence on the child's development¹. Neighborhoods provide high exposure to stimulations that offer the child opportunities to interact with others and his/her surroundings, which promote his development. The neighborhood offers a set of affordances, which are qualities of the environments that offers the child to play, explore, travel independently, engage with adults and other social groups as well as peers, confront with the natural world, and access cultural and commercial resources. It is important that children get involved in activities like running, cycling; acting out imaginations in their play; and experimenting different materials such as wood, sand, water, fire, plants and animals².

Experiencing all kind of affordances in the immediate environment enriches three aspects of children development, which are cognitive, physical and social. All of the three aspects of children's development are interrelated.³ The significance of cognitive development is associated with children's interest and knowledge about themselves or the environment⁴. Cognitive development is a process in which children interact with the stimuli provided by the environment⁵, through gaining meaningful evidence from the environment and process it in their minds⁶. Through playing and interacting with peers, adults and environment⁷, learning happens that leads to the construction of thought processes, including remembering, problem solving, and decision-making, from childhood through adolescence to adulthood. It is argued that the way the

¹ Villanueva K, et al. (2015). Can the Neighborhood Built Environment Make a Difference in Children's Development? Building the Research Agenda to Create Evidence for Place-Based Children's Policy. *Academic pediatrics*, 16(1), 10-9.

² Van Andel, J. (1984/1985). Effects on children's outdoor behavior of physical changes in a Leiden neighborhood. *Children's Environments Quarterly*, 1 (4), 46-54.

³ Chawla, L and Heft, H. (2002). Children's Competence and The Ecology of Communities: a Functional Approach to The Evaluation of Participation, *Journal of Environmental Psychology*, 22: 201-216.

⁴ Cornett, J. Y. (1998). *An investigation of the reliability and validity of two transdisciplinary play-based assessment methods: the open-ended and objective-based observation coding procedures*. Illinois State University.

⁵ Piaget, J. (1951). *Play, dreams and imitation in childhood*. New York: Norton.

⁶ Flavell, J. H. (1992). Cognitive development: Past, present, and future. *Developmental Psychology*, 28(6), 998.

⁷ Vygotsky, L. S. (1967). Play and its role in the mental development of the child. *Soviet psychology*, 5(3), 6-18.

neighborhood is built either promotes or restricts the process of interaction and hence the development.

Lately, governance and communities have started to pay much attention to implement neighborhood interventions and initiatives that encourage children's health and livable development at the community and neighborhood level. The current global movements on livable and child friendly cities show the need and the urge for immediate steps towards establishing them. A Child friendly environment is the one that promotes development. The existing definitions of Child Friendly Cities fall into two main categories: Right based approach and Environment based approach. This study emphasizes on the Environmental Based Approach rather than the Rights to investigate if the local Urban Environment promotes child friendliness or not and how its urban characteristics have impact on the opportunities for child interaction and hence his/her development.

Great Cairo Region GCR widely differs in the urban characteristics of its neighborhoods, which therefore differs in the qualities they offer the child for interacting and playing (affordances). Those neighborhood characteristics can then determine how child friendly the environment is. It is a common observation how children living in an interactive environment, where they have a lot of opportunities and qualities, show a different attitude and behavior, from those in other environments that lack opportunities for interaction. Vital urban fabrics, like the traditional fabric of Historic Cairo, with high levels of connectivity between streets, moderate to high urban density, and mixed land use with residential dwellings, shops and services provide a child with a walkable environment¹. Those walkable urban fabrics probably provide certain affordances for the child to explore and actualize. To be able to explore the effect of neighborhood characteristics on what they offer to a child, it is important to understand the context in which children grow and develop. This will help reduce developmental vulnerability in children and to offer optimal settings for child development and hence a child friendly environment.

1.2. Identifying Terminologies

Child friendly environment is an environment that stimulates the development of the child. Child friendliness of the environment lay in the fact that the children are an important part of the social community; they are not eliminated from any everyday events, and they play important roles in the community². According to the UNICEF, a child friendly environment should ensure that the needs and rights of children are addressed in cities and spaces³.

Vitality/Livability represents the characteristics of a place with a safer, more desirable, and more attractive space which has the capacity of people and activities for

¹ Martin KE, Wood LJ. (2013). We Live Here Too... What Makes a Child-Friendly Neighborhood?

² Kytä, M. (2003). Children in outdoor contexts. Affordances and independent mobility in the assessment of environmental child friendliness. Espoo: Helsinki University of Technology, Centre for Urban and Regional Studies

³ Riggio, E. (2002). Child friendly cities: Good governance in the best interests of the child. *Environment and Urbanization*, 14(2), 45–58.