A Review on Child Friendly Neighborhood, Case Study: Hewareberize Neighborhood, Sulaymaniyah, Northern Iraq

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master of Science
in
Urban Design

Eastern Mediterranean University
February 2021
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

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ABSTRACT

Children experience childhood in urban conditions progressively and more than one billion kids nowadays live in cities and towns. Cities and neighborhoods have to be safe and livable for children, because children's surrounding environment can significantly affect their entire lives. The planning and designing of projects related to children in cities and neighborhoods should be done for children and with children, because participation of children and using their ideas are the first step toward successful projects for all. Children's requirements in cities are the same as an adult's; all people want to have safe, secure, healthy life. So it is clear that a city good for children, is a city good for all. Every child has the rights to be protective and walk around their environment safely and experience new things. The Convention on the Rights of the Child embodies the most comprehensive explanation of the rights of children. The embodiment of the Convention of the rights of the Child at local level is the definition of a Child Friendly Cities (CFC).

The aim of this study is to analyze and evaluate Hewareberize neighborhood in Sulaymaniyah in Northern-Iraq with principles of Child Friendly Cities, in order to determine existing situations and according to the findings, provide further recommendations for its improvements. The study emphasized the view and opinions of children as participants, and suggested that children must be central in the process of research. For reaching the aim a mixed methodology has been used as qualitative and quantitative method. Qualitative data has been collected through the cognitive map, the interview and observation; and quantitative data has been gathered by physical analysis and documentation and also observation. Twenty children aged

between 6 to 12 years inside the Hewareberize neighborhood, have been participated in this study in doing the interview and the drawings which is the most effective way to understand children's feelings and requirements.

This study recognizes the methods that can be used for analyzing and evaluating a community or neighborhood to determine a child-friendliness of that area. It has been mentioned that participation of children in these type of research is the most required to get more effective finding and results. Bases on the findings, the evaluation of the neighborhood have been done, with the principles of Child Friendly Cities. Then, several recommendations have been mentioned to make the neighborhood more children friendly.

Keywords: Child Friendly City, Neighborhood, Children's right, UNICEF, Participation of children, Children's drawing

ÖZ

Çocuklar kentsel koşullarda çocukluğunu aşamalı olarak yaşıyor ve günümüzde bir milyardan fazla çocuk şehirlerde ve kasabalarda yaşıyor. Şehirler ve mahalleler çocuklar için güvenli ve yaşanabilir olmalıdır, çünkü çocukların çevresindeki çevre tüm yaşamlarını önemli ölçüde etkileyebilir. Şehirlerde ve mahallelerde çocuklarla ilgili projelerin planlanması ve tasarlanması çocuklar için ve çocuklarla birlikte yapılmalıdır çünkü çocukların katılımı ve fikirlerini kullanmak herkes için başarılı projelerin ilk adımıdır. Şehirlerde çocukların gereksinimleri bir yetişkininki ile aynıdır; tüm insanlar güvenli, emniyetli ve sağlıklı bir yaşam sürmek ister. Dolayısıyla, çocuklar için iyi bir şehrin, herkes için iyi bir şehir olduğu açıktır. Her çocuğun koruyucu olma, çevrede güvenli bir şekilde dolaşma ve yeni şeyler deneyimleme hakları vardır. Çocuk Hakları Sözleşmesi, çocuk haklarının en kapsamlı açıklamasını içermektedir. Yerel düzeyde Çocuk Hakları Sözleşmesinin somutlaşmış hali, Çocuk Dostu Şehirler (ÇDŞ) tanımıdır.

Bu çalışmanın amacı, Kuzey Irak'ta Süleymaniye'deki Hewareberize mahallesini Çocuk Dostu Şehirler ilkeleri ile analiz etmek ve değerlendirmek, mevcut durumları belirlemek ve bulgulara göre iyileştirmeleri için ilave öneriler sunmaktır. Çalışma, katılımcılar olarak çocukların görüşlerini ve fikirlerini vurguladı ve çocukların araştırma sürecinde merkezi olması gerektiğini öne sürdü. Amaca ulaşmak için nitel ve nicel yöntem olarak karma bir metodoloji kullanılmıştır. Bilişsel harita, görüşme ve gözlem yoluyla nitel veriler toplanmıştır; ve nicel veriler fiziksel analiz ve dokümantasyon ve ayrıca gözlem yoluyla toplanmıştır. Hewareberize mahallesinde yaşları 6-12 arasında değişen yirmi çocuk, çocukların duygu ve gereksinimlerini

anlamanın en etkili yolu olan röportaj ve çizimlerin yapılmasında bu çalışmaya katılmıştır.

Bu çalışma, o bölgenin çocuk dostu olup olmadığını belirlemek için bir topluluk veya mahalleyi analiz etmek ve değerlendirmek için kullanılabilecek yöntemleri tanımaktadır. Çocukların bu tür araştırmalara katılımının daha etkili bulgu ve sonuçlar elde etmek için en çok gerekli olduğu belirtilmiştir. Bulgulara dayanılarak mahallenin değerlendirilmesi Çocuk Dostu Şehirler ilkeleri ile yapılmıştır. Daha sonra mahalleyi daha çocuk dostu hale getirmek için birkaç tavsiyeden bahsedildi.

Anahtar Kelimeler: Çocuk Dostu Şehirler, Mahalle, Çocuk hakları, UNICEF, Çocukların katılımı, Çocuk resimleri

To

The Spirit of My Father, My Lovely Mother and All Who Love Children

ACKNOWLEDGMENT

First of all praise be to God for all his Graces in granting me patience and faith to complete this thesis.

I would like to express my special thanks and appreciations to my supervisor, (PROF. DR. Mukaddes POLAY) for her guidance, encouragement, and the advice that she gave me throughout the progress of this study.

I want to thank the staff of the Department of Architecture in general, particularly the team of Urban Design Graduate program.

I would like to express my deepest gratitude to my dear mother (Gashaw) for her constant encouragement, continuous care and support during the course of my study. Also, thanks go to my brothers and sister. This accomplishment would not have been possible without them. Thank you.

Finally, My thanks and appreciation to the good citizen of Famagusta in Northern-Cyprus for being so friendly and for helping me adapt quickly within their community, my gratitude goes to those who provided security and stability in the city, which gave me the sense of safety as a foreign student and encouraged me to continue study and obtain my master's degree in the great city of Famagusta.

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INTRODUCTION

Although children are our future, they are also our present so we should seriously try to take their voices (UNICEF, 2001). Children experience childhood in urban conditions progressively and more than one billion kids nowadays live in cities and towns. In order to have a safe and free movement of children we should prepare the perfect design and plan for our neighborhoods (Derr et al., 2013). Moreover, adults desire the same requirements of children in the city, it means that we all need having parks and green spaces close to us, clean air to breath, safe streets and protected sidewalks and bike lanes, clean public spaces, a feeling of safety.

The main principle is "a city good for children, is a city good for all" (Danenberg et al., 2018). The future of children in their lives is clear if cities do not have perfect planning. The impact on poverty and urban slums will exacerbate if cities do not grow in sustainable ways and bring suitable infrastructure to support growth of population. Then for these reasons the action has been launched based on the sustainable development principles and rights of children, by the UN (Gleeson & Sipe, 2006). The principles of sustainable development obviously demand that the achievement of environmental, social and economic objectives meet the requirements of the present generation without compromising future generations. National governments should preserve the respectability of the economic, environment and social fabric of their worldwide and local situations through

procedures that are participatory and fair. The Convention on the Rights of the Child (CRC) principles reinforces this responsibility of the states (UNICEF, 1990). A materialization of the Convention on the Rights of the Child at the local level is a Child Friendly City, which practically means rights of children are reflected in laws, budgets, policies and programs. In a Child Friendly City, children can have their voices and they can tell their own opinions freely which affect decision making processes (UNICEF-Canada & UNICEF, 2009). The Child friendly cities notion (CFCs) was settled for the first time throughout the Second United Nations Conference in Human Settlements that was held in Istanbul in 1996 (Osman El Hassan, 2013). In accordance with the CRC, the well-being and quality of life of children is the ultimate indicator of a good governance, sustainable development, and healthy environment. So if the sustainability goals are not attained, children will be the main member of society and the global community that will be affected. In a simple term, a combination of the UN principles of children's rights and of sustainable development together has provided the child friendly city movement's foundation.

Child friendly city Initiative has essential services to shield children from mischief and meet their primary needs, and help children to participate in the process of decision making that affect their lives (Derr et al., 2013). In addition, the responsibility of Child Friendly City will grow in providing safe, playful and livable areas for children and their caregivers. A Child Friendly City guarantees the right of children to:

- Participate in decision making about their city.

- Feel free to indicate their opinion about their city.

- Participate in community, social life and family.

- Take essential services as education, shelter, and health care.

- Have safe water for drinking.

- Be secured from violence, abuse, and exploitation.

- Walk in the streets on their own safely.

- Have a meeting with friends and play together.

- Have green spaces for animals and plants.

- Live in a clean environment.

- Join social and cultural events

- Access to all services and be equal, regardless of their religion, gender, income, ethnic origin and disability.

Generally the goals of Child Friendly City can be grouped into several categories: natural green spaces, health and safety, integration, and access.

This study has worked on these twelve criteria of CFC in the case study of Hewareberize neighborhood in Sulaymaniyah city in Iraq.

1.1 Problem statement

In general, lots of things have influenced the health of children and their wellbeing. Population growth, crime, poverty, environmental pollution, war, industrialization, the soil and the waterways have all played their role. In addition, city designers and planners around the world are challenged with increasing rates of urbanization that include the growth of children numbers living in cities and urban communities. Throughout the Industrial Revolution, developers were concentrated on growth and advantages or benefits of economics instead of the requirements and desires of people. That is why underrepresented actors as children, youth and women have a

little space in the plans of those developers (Horelli, 1997). As well as many social factors in urban development were neglected (Davis, 2000).

Even recently, in urban development the same problem can be seen in many nations. Although a huge number of research is existed about the living conditions and environment of children in cities, the concentration on these studies have differences in the last several decades. Moreover, throughout the past fifty years, resource usage and growth of population have both been growing dramatically (Gleeson & Sipe, 2006). So focus on children as the heart of urban planning and design will create more safe, livable, and sustainable cities for all people. In addition, we must be sure that the two main impacts on children's psychological being which means children's whole life are children's happiness and their living condition. Children and youth need reorganization of the capacity for them to participate and it encourages them to have a sense of connection with their community (Malone, 1999).

In addition, we can clearly see the difference between the view of young people and adults, about the problems and resources of the community. Young people and children are closely related with their local environment, and sometimes they know more knowledge about those issues that affect them and related to them than adults. Moreover, (Driskell, 2002) determined two benefits of participation of children in community development which are: making children to learn new skills, and giving information for adults about children's perspectives of their environment.

The good governance principles can provide opportunities for supporting children if cities try to manage on the base of them. These principles which are (social inclusion, equity, a commitment to the rights of children, and accountability)

developed through the frameworks of the United Nation policy. Urban settlements can turn into a dangerous environment for families and their children, without these good governance principles and the absence of investment in management of waste and resources, social services, and infrastructure.

In addition, as it has been stated, safety and protection is one of the main challenges within districts and communities (Leonard, 2007). One of the reasons that make children to become highly supervised in their communities is the increasing fear of their parents. Moreover, the risks to children in their communities can be divided into three parts: violence and criminal acts, stranger danger, and traffic and congestion (Rakhimova, 2011). The absence of public transportation, protected bike lanes, and pedestrian routes in a neighborhood avoid children's autonomy movement until they reach legal age to drive.

Researchers did not focus on the urban children and their environment relationship until the 1960s.(Gleeson & Sipe, 2006). There are few studies about children in general and their health and wellbeing in North Iraq. Moreover, there is the need to conduct studies especially related to children and urban design together.

Through observation it has been recognized that Hewareberize neighborhood in Sulaymaniyah city in North Iraq does not fulfill numbers of the requirements and principles of Child friendly cities. Particularly, streets are not protected for children aged (between 6 to 12) in Hewareberize neighborhood in Sulaymaniyah to walk on their own; children have a few recreational places in the neighborhood and also children in the same age group have limited opportunities to meet friends and have

somewhere to play with them; and children also do not have enough chance to participate in decision making about their city, neighborhood and places they live in.

1.2 Aim of the study

Humans are flexible in their childhood. The early environments of children lead the developing long term social, psychological and physical health as well as their choices, aspirations, and values. So it is obviously significant to create a good environment with healthy lifestyles and positive choices for children, and give the chances for children to learn how to be participating members of society (McAllister, 2011).

A Child Friendly City fights against decreasing of childhood in outdoor activities in some ways. Those children that have more involvement in their community are those who are likely to feel responsible for the places they use more, and venture outside. In addition, one standard of Child Friendly City is the necessity of adequate green areas. A Child Friendly City emphasizes on the need for an unpolluted environment and for the green areas for animals and plants. Urban nature can be more significant for children as they come to contact with these urban areas in a familiar environment in their everyday lives, than untouched wilderness areas (Wells, 2000). According to (McAllister, 2011), there are two ways to include children in planning: First planning with children and then planning for children. Each of these ways needs consultation and discussion with children. We should have some information about the relation between children and their environment and how they influence each other in order to successfully plan for children. So the only ways to receive this knowledge are communication with children and observing them directly.

In accordance with (Woolley, 1999), Those outdoor places that are suitable for children to play in are: First, neighborhood open spaces, for example playgrounds, sport areas, parks, natural green spaces, playing fields, streets, and city farms. Second domestic open spaces for example community gardens. In order to provide more opportunities for playing and social contact, those places should have vegetation, seating areas, and adequate lighting or we can say creative design.

Therefore, the aim of this study is to analyze and evaluate the Hewareberize neighborhood in Sulaymaniyah in Northern-Iraq with principles of Child Friendly Cities, in order to determine existing situations. According to the findings, provide further recommendations for its improvements.

1.3 Research questions

It is one of the most important points to make our neighborhoods more child friendly that helps children to be free to explore, socialize, and play in all areas of the city like other urban citizens, and to participate in decision making about their city and life and to express their opinion more freely. Independent mobility of children will get when children feel free to get around their districts on their own. This is beneficial to connect children with their communities, and it affects their development and well-being as it helps to higher physical activity and sociability levels and also to mental wellbeing improvement (Stanley et al., 2015).

According to work on Sulaymaniyah City as a case study, Along with the aim the following research question is addressed: Does the Hewareberize Neighborhood fulfill Child Friendly City principles?

Furthermore, this research answers following sub-questions:

- What are the principles of Child Friendly City?

- What are the children rights?

1.4 Limitation and scope

This study is limited with the evaluation of Hewareberize neighborhood in Sulaymaniyah depending on the criteria of Child Friendly Cities. Also, it is limited with children aged between 6 to 12 years, because it is the area which has more social facilities for children. The reason behind deciding this age range is that in these particular ages children start to be active in outdoor spaces and play there (Chawla, 1992). In addition, the theory of Piaget defined this age group as 'Concrete Operational Stage', which is the time of middle childhood and in this stage of development children become more sophisticated and logical in the way they think. This study has focused on children's outdoor environment, so children's indoor home environment has been excluded.

1.5 Methodology

As stated before, this study is to evaluate children conditions in their residential environments with the principles and criteria of Child Friendly City. Moreover it is about respecting children's rights that ensures a safe and clean environment for children. To reach the aim, a mixed methodology has been used as a qualitative and quantitative method. Also In this research the method of triangulation is used in which multiple methods or data sources are used in a qualitative and mixed research to develop a comprehensive understanding of the case study and whether it fulfills the requirement of child friendly city (Patton, 1999). A number of literature reviews and documentary research have been done on the main subjects which are the Child Friendly Cities, residential neighborhood, Children's Rights, Children's drawings, and child physical environment. Then in order to collect data, observation and

physical analysis at the site have been done, as well as an interview and cognitive map with participants to know their problems and desires have been conducted. It covers a range of age groups from 6-12 years, with focusing on Hewareberize neighborhood in Sulaymaniyah in North Iraq.

The questions of semi structured interviews (which is based on the criteria of Child Friendly City) and the papers for drawing the map have been together given to each family with (A4 papers, pencil, and color pencils). First of all, the children have been informed that there are no right or wrong answers, feel free to say whatever you want because no one gets to know about them. This is beneficial to see the problems and needs of the neighborhood from the eyes of the children and to realize what they really want and those they do not want.

This study has been conducted among the children in Hewareberize neighborhood in Sulaymaniyah, which is a city in North Iraq. In addition, interviews were conducted in the residential areas of the neighborhood by choosing several houses randomly. In accordance with (Sandelowski, 1996), qualitative research's sample should be small to maintain the depth of case oriented analysis that is essential to this way of inquiry. Moreover, according to (Creswell, 1998) the sample size will be adequate in a range between 20 to 30 interviews depending on the sample size guidelines. Moreover, the participants that are involved in this study are 20 children from a full range of ages between 6–12 years.

Data collection is done by observation, physical analysis and documentation, semi structured interview and cognitive map with children, for the interview and cognitive map the consent form has been obtained for their parents, they have been asked to

sign the form before starting of their children to respond to the interview and cognitive map.

In this study qualitative data has been gathered via interview and cognitive map, and it has been analyzed after that. About the interview the qualitative data has been analyzed by content analysis. Moreover, about the cognitive map it has been analyzed that how children will improve their neighborhood if they have a chance, and what are those places important to them. Also to determine those places that children do not want.

About the Physical analysis and documentation, which is used for this type of studies is depended on the assessment that submitted by CERG, UNICEF, and Bernard van Leer Foundation (Giusti et al., 2010), and it has been made compatible with the International Convention of the rights of the child, and it consists of six essential "dimensions: home environment, health and social services, educational resources, safety, protection and mobility, play and recreation, community life"(Rakhimova, 2011, p. 5). In order to achieve the aims of this study, these dimensions have been used except the first one "Home environment".

Chapter 2

LITERATURE REVIEW

The concept of Child-Friendly City (CFC) has inspired almost all studies using the child friendly environment concept. This concept focuses on creating better conditions of life for all children in cities by protecting their basic rights (Nordström, 2010). Horelli defined the concept of child friendly environments as complex, multilevel and multidimensional. It refers to environmental structures and settings that give support for all children and those groups which take an interest in children's problems and issues and help them to implement and construct their projects and goals (Horelli, 2007). In addition, child friendly designs and environments have to give children their rights and enhance their group participation and awareness, and avoid or at least decrease abuse, violence and exploitation against children.

It has been a long time that researchers work towards a city that is actually for all people including children. According to Bridgman (2004), those research that directly related to children and their lives have been started with The Child In the City by Ward (1978) and Children's Experience of Place by R. Hart (1979). There is nearly a lot of research about rightful places for children and youth, assessments of young people's environmental preferences, for instance, by design guidelines and cognitive mapping for developing proper environments for children. In addition, most of the researches have focused on planning and designing for children and

youth but planning and designing with them have gotten attention within about the last recent decades.

In addition, there is a strong relationship between child friendly cities and the 2030 Agenda for Sustainable Development which with the New Urban Agenda they are a chance to shape urbanization to account for the most disadvantaged population, especially children, and to strengthen the city's expertise in urban planning (UNICEF, 2019).

In general, a Child Friendly City (CFC) is any organization of local governance and city which works on satisfying child rights as stated in the Convention on the Rights of the Child. CFC is a city that is proper for all, where the needs, rights, voices, and priorities of children are essential and important parts of public policies, decisions and programs. According to Malone (2011), a Child Friendly City is a city where youth and children have the chance to completely develop and to freely and actively participate in community and public life.

2.1 Importance of child friendly cities

If a city can be suitable for people with different age groups, then it is a healthy city. So the children group is one of them that are considerable quantitatively and qualitatively (Rastegar et al., 2018). In addition, if we want to have a successful city for all, we can do it by making the city successful for children. Because when somewhere created and planned to respect requirements and needs of children, by default, the space will respect all populations of society. According to UNICEF (2019), when a built environment is not proper for children, it influences quality of life of the whole community. So, it means that the built environment provides so

much opportunity where cities can commit to protect youth and children's rights. When Kevin Lynch (1977) focused that urban planning needed to work on more than just the aesthetics and function of cities; it also needed to understand how children act in, inhabit, and respond to the environment they live in. Furthermore, children's multidisciplinary and geographic studies are based and emphasized on the principles that children are social agents who individually experience their environment and act as a part of larger society and also that they know about their lived experiences (Derr et al., 2019).

It is somehow difficult and challenging for urban planners to reconcile the desires and needs of people from a full range of cultures, abilities and ages. This job cannot be taken so lightly and it is not that easy. Because it is about the environment that people live in every day which affects the way they see the world. But still there are certain groups that maybe neglected in this process, particularly if they do not have ability to make their desires and needs known, for example, children which have received little or no attention. These groups' official recognition is the first and most fundamental step to create a society where everyone feels included and welcome (McAllister, 2011). In addition, children as all the other members of society have their rights upon the city, but we have to admit. While the adults in the community have priority in being a part of the city, the children are fully ignored in most of the places except some rare outdoor spaces and school places (Oulmane-Bendani, 2013). Unfortunately, they have to live in these areas which are built for and by the adults. However, children are sometimes overlooked in public policy even in built environments and public health professionals working on place based health (Bishop & Corkery, 2017). Children cannot pay taxes or vote, and they are not often assumed to be able to participate in the development of policy (Brown et al., 2019).

Additionally, in Gleeson and Sipe (2006) it has been mentioned that Karen Malone explained how globally around half of children in the world are living in destitution and poverty, and even they are not well protected and they are denied the basic resources and protections extended in the Convention of the Rights of the Child, Which include safety right and the right to live in a clean environment and have a place and space for free play, leisure and recreation.

Every city should encourage and support children's imagination, curiosity, and their desire to explore their surroundings by welcoming, interesting, and safe physical environment. According to UNICEF (2019), For children and adults, cities can potentially be 'a school of life'. Public spaces, outdoors, and streets are initial spaces for children to experience their notions of independence. Children encounter stimuli to grow social and cognitive skills, and have chances to decision makings based on experience and reasoning, and also Berg and Medrich (1980), stated that environment influences the whole children's lives in many significant ways. According to Marcus and Moore (1976), children are a powerless minority in designing and planning an environment for themselves. Although they are not as important as decision makers, children may use some places more than adults in somewhere like a neighborhood or home, and they might be very active participants of those facilities. In addition, Children usually live in very disadvantaged positions, for example, in the city those built environments that adults constructed for their own, to provide their daily needs (UNICEF, 2019).

Development advances of children are at a pace from beginning ages until they go into primary school. This period in the lives of children is very important stage because they develop their cognitive skills and remarkable linguistics, and they start

to exhibit social, moral, and emotional capabilities. Children's experience in the economic and social circumstances can enhance or compromise the development, and long-term variances are obviously associated with economic and social circumstances (UNICEF, 2006). Essentially the features that are perused by children are the same as most people for their urban surroundings benign and flawless streets, having green area, unpolluted air, activities to do, ease of mobility, social live, and simply a place to live and go to at the end of the day, a home (Brown et al., 2019). It is much needed to have natural places surrounding our children for thriving, learning, and playing. It is also essential to give children opportunities to contact with the beauty of clouds, waterways and rivers, critters and blossoms and trees. We have to fascinate them by these things to be careful and close to their surrounding world, to have a sense of protection, not only appreciation, and to help them to be ready to live their lives accordingly. These are all strategies of a public health, an environment, and an education, and a way to our required future (Palone, 2014). So, focusing on children in research and studies is significant because throughout history, youth and children have not been included in the planning and designing process of urban environments, and they have been excluded in the definition of "the Public".

Focusing on children is also important because of the high number of children living in the cities. Although one third of the world population is children, there is a vital difference in population composition through the world's regions, children still drive sixty per cent of natural growth in cities, in developing countries (UNICEF, 2019). Recently we can clearly notice the huge number of people living in cities and the number of children growing up in cities which are more than ever before. According to UNICEF (2012), the number of children that live in urban areas is more than one billion. It has been projected that more than sixty per cent of the world populations in

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2030 will live in urban areas and also more sixty per cent of them will be children or under the age of eighteen (Brown et al., 2019). As it has been mentioned before, most of children grow up in urban area's environment, and this environment has effects on their development. So it is necessary to shape urbanization for children, because, well planned urban settings which fulfill children's needs, will affect not only on development of children, but thrive as homes for generations to come. Regardless of these important points that have been mentioned above, recently, planners and designers have not valued children and youth as a priority, or even a major consideration.

2.2 The beginning of studies and researches of children

"Throughout the Industrial Revolution and in the pre 1930s, developers were concentrated on economic growth and benefits, more than the necessities of individuals"(Rakhimova, 2011, p. 10), and many social considerations were overlooked in urban development. So, there has been little room for women, children and youths, like underrepresented actors (Horelli, 1997). From the middle of the nineteenth century and so on, the wellbeing and happiness of children in 'the city of the dreadful night' developed as a concern of social commentators, researchers, and governments (Gleeson & Sipe, 2006).

At 1911 Bremner's work, which was presented in the Chicago exhibition, was an example of the leading efforts to present, examine, and consider material on welfare of children, systematically (Rakhimova, 2011). Study and interest about the social and psychological dimensions of the playing by children had started to grow, as well as the important role of the interaction between children and the urban environment. In 1920 the idea of pedestrian safety in neighborhood design had begun to appear

with Clarence Stein's additional separation of automobiles and pedestrians, and Clarence Perry's school-oriented, self-contained, neighborhood unit. It made a critical measure of the Neighborhood Unit of Perry in the 1920s, and it was integrated in the late 1930s designs (Frank et al., 2003).

Overall, in 1930 and earlier, the attention of lots of studies and research was on building urban environments in a nurturing way for children such as providing playgrounds, parks, and other facilities. Somewhere which needs to be a necessary place for children to develop socially, physically, and mentally with their friends (Rakhimova, 2011).

For the period of the 1930s and 1940s, sociological studies of urban children turned to more complex methodologically. For instance, Bernard (1939), and Macdonald et al. (1949) studied the behavior of children and young people relative to socio-economic conditions.

The findings of the study by Bernard (1939), indicated that there is a difference in children's connection with their neighborhood according to their socio-economic conditions. There is a stronger connection between children in lower socio-economic groups with their neighborhood and friends. Bernard (1939), also explained about transportation which has a role in children's welfare and happiness, as well as families related transport factors like car ownership (Gleeson & Sipe, 2006).

In addition, the research of Macdonald et al. (1949), explained how activities and leisure of children, depending on their socio-economic background. The total class

differences in the contribution of children in particular individual activities and structured leisure activities.

Researches about the relationship of urban children and their surrounding environment, and how environment can influence their mental development, started to develop after the 1960s. In the beginning of the 1960s, in the United States the National Institute of Child Health and Human Development was established within the National Institutes of Health (Gleeson & Sipe, 2006). The aim of this was to examine children's behavioral and social development, with biological and learning processes; it had been understood by the leaders of the project that environmental planners, architects, and engineers were necessary as collaborators. So, it was the beginning of involving research from different fields in the study of children.

In addition, in the United Kingdom, the first studies appeared about the interaction of children with their urban environment in the middle of 1960s. Moreover, in the late 1960s, a book had been established called Planning for Play which was written by Lady Allen of Hurtwood, that explained the design implication of children's activities, and types of activities that children did and where they liked to do them (Allen, 1968).

The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established In 1968. Later on, a ten-year program had been initiated by UNESCO which the aim of the program was developing the understanding of people-centered solutions to environmental complications (Rakhimova, 2011). So the leader of this interdisciplinary approach was an urban designer and advocacy planner, Kevin Lynch, involving a combination of planners, natural scientists, social

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researchers and scholars, architects, and other urban environmental practitioners. The usage of space by children was very interesting for Lynch, with those spaces that socialize and play with each other, for example, like courtyards, local streets, and staircases. In addition, one of the parts of this project was participation of children by drawing their neighborhood maps, and then it showed that children's environment affects their drawings.

So, after that, by this research program by Lynch, other researchers have been motivated to work on similar studies. Also, this study helped to scholarly understanding of urban children's condition.

From the 1970's onwards, kids and young adults in cities have been pushed away from safely using and enjoying their neighborhoods (Gaster, 1991). In addition, Marcus and Moore's review in 1976 claimed that in the 1950s, there was only one research published by Lynch and Lukashok (1956) named investigation into childhood memories of the city. This research investigated children's environment thoroughly and in a critical way. Furthermore Marcus and Moore (1976), emphasized the evaluation of children's environment in a scholarly way was a recent phenomenon.

Due to the effort of Lynch, other researchers were inspired to undertake studies that can be compared including Moore and Young (1978) who looked into the territories of children's homes, the roads and paths used to walk around the neighborhood, and place of affiliations. Furthermore, Ward (1978), was another one that looked into children's relationship with their urban environment (Gleeson & Sipe, 2006). In addition, the late 1970's were characterized by multiple global efforts (Lynch &

Banerjee, 1977); (Ward, 1978) in order to better recognize the interaction between children and the urban environment.

Moreover, the attempt to involve children's ideas and perspectives into policy documents was the main change in the 1980s. The research that was done on urban children in the 1980s had paralleled themes raised in the prior decade. The focus during this period was on how the environment impacted the development of children socially and mentally, and children's physical urban environment (Gleeson & Sipe, 2006). In addition, in the 1980s, there were attempts that were made in order to include children's ideas and perspectives regarding their neighborhoods in the policies and research. De Monchaux (1981), argued that, historically, children's needs in the urban environment have been assumed rather than proved, and the fact the officials need to have a better understanding of the important factors regarding children's engagement with the environment.

In the late 1980s, complex statistical advances were developed in order to define the environmental quality to comprehend the healthiness of children by using family characteristics as controlling variables (Gleeson & Sipe, 2006). The attempt to include children's ideas and perspectives in making policy documents was the main change, in the 1980s.

Over the last decade the concept of child friendliness has been spreading at the neighborhood and community, national, and global levels. In the child friendliness movement, it is the central theme that sees the well-being of kids and young people as a sign of a sustainable and healthy (UNICEF, 1997). The 1990s gives us proof of

the increased importance by numerous disciplines on the wellbeing and health of children.

During the car boom, research in public health and medical journals fought for increased walking and cycling since they were regarded as a good form of physical activity in order to improve public health. Public health practitioners, for the first time, have also started to work urban planning's researches and other similar fields (Rakhimova, 2011).

In the 1990s, many built environment and children's health researchers placed the blame of the continuous decline of the health of children on urban expansion (Burchell & Mukherji, 2003). Furthermore, many have wanted to recognize the reason of the growing rate of overweight in children in the western nations. In addition, the research area concerning medical issues and physical health of urban children arose in the early 1990s. Olden (1993), reported the controversy surrounding the physical fitness level of American youth.

The rapid increase of research since the mid-1990s can be used as evidence of the growing emphasis by several disciplines on children's wellbeing and health. Moreover, from the mid-1990s, a dramatic change has occurred regarding research towards the urban environment and children's health. Researchers have deviated from researching children's mental health, and have gravitated to making research on children's physical health and problems with inactivity and childhood obesity.

In addition, From the 1990s, a large increase in the amount of academic journals that are dedicated to the urban environment and children's health has occurred. This

increase is a result, in part, to other disciplines becoming more concerned and involved in children's health, thus, expanding the field of stimulating demand and inquiry for multidisciplinary venues for publication (Gleeson & Sipe, 2006).

From the 2000s, the notion of having children participate in the process of planning became more well-known. Driskell (2002), has stated that youths must take part in the processes of development of their community due to the fact that they are more closely knowledgeable with their environment. Furthermore, they are the most familiar on the impact of the development decisions regarding the local environment would have on their lives and that of their communities. In addition, Killingsworth et al. (2003), stated and argued that this interest in children and youth's urban outcome and experiences has caused a revitalization of the call to identifying ways to build a research agenda to the new demand of knowledge, and to embracing interdisciplinary collaborations.

2.3 UN convention on the rights of the child

The most ratified UN convention that includes children in the definition of a person under eighteen years of age is the CRC, and it forces legal responsibilities and obligations on government, institution, and families to realize the rights of the child as codified in the convention (Chatterjee, 2006). Furthermore, UNCRC or The United Nations Convention on the Rights of the Child is the convention that is the world's most widely ratified and fastest human rights treaty that since its adoption in 1989 at the UN general Assembly, 196 countries have joined it (UNICEF, 2017). From then until now, it has caused a major turning point in changing the perspective on children. In addition, this view requires the recognition of children having rights as society members.

The Convention on the Rights of the Child embodies the most comprehensive explanation of the rights of children. It is a document that describes childhood as a state bound by expectations and structures; and it sets responsibility to states, institutions, and individuals for realizing that childhood.

The United Nations Committee on the Rights of the Child is made up of 'independent experts' that are chosen and elected by ratifying countries. These experts usually represent a range of professional backgrounds. These backgrounds include international law, human rights, social work, juvenile justice, journalism, and health care many of which have been active in non-governmental and governmental organizations. This results in the committee regularly reviewing the progress that is achieved by countries that are obliged under the obligation they have taken under the convention concerning protection and promotion of these rights. Furthermore, this committee is responsible for determining whether children have the complete rights that are recognized under the Convention on the Rights of the Child (UNICEF, 2006).

The Convention on the Rights of the Child protects the rights of every human being under the age of 18. This includes infants and young children. In addition, this Convention provides guidance on the correct method of raising children and educating them. Furthermore, this convention includes an article on the aims of education (article 29).

2.3.1 The rights of a child

There are 54 articles in United Convention on the Right of the Child (CRC) that present the rights of children and how governments have to work together on making these rights available to every child in the world. According to the convention,

governments have to fulfill needs of children's and support them to reach their full potential. The Convention defines who children are, their rights, and the governments' responsibility. Children should have all of the rights stated in the Convention, which are all equally significant and all connected together (UNICEF, 1989). CRC was adopted in 1989 by the United Nations (UN), which identifies that there are differences between children's needs and adults' needs because children have some particular needs. It gives children several political rights, for example, respect for their views, freedom of expression, protection from harm, and non-discrimination (McAllister, 2011). The first legally binding international instrument is CRC, to incorporate the full range of human rights, that consist of political, cultural, civil, social, and economic rights (UNICEF, 2019). Child rights have been known by all populations in the community. Additionally, the underlying principles have been understood by experts, parents, members of civil society organizations, local government decision makers, public servants, caregivers and children; and put them into practice continually (UNICEF, 2018).

Every child has rights, regardless of their gender, ethnicity, abilities, religion, language, or any other status. In the Convention, no right is more significant than others. The right to education (Article 28) and the right to be safe from abuse and violence (Article 19) have the same significance as the right to freedom of expression (Article 13) and the right to play and relax (Article 31).

According to UNICEF (2019), The articles of the Convention are clustered into guiding principles with three categories of child rights:

- Rights of protection: That is about protecting children from neglect, cruelty, abuse, and exploitation. So this rights category makes sure that children are feeling safe.

- Rights of survival and development: This category makes it allowable for children to thrive and survive, and gives children access to education and health resources required for the development and survival of children.

- Rights of participation: It is about the freedom of children to participate and express in decision making. This category ensures children to take an active role in the community.

According to UNICEF (2006), The principles of Human rights apply to all areas of early childhood development. Including children and their rights, these principles are supported by the four common principles of the Convention, which are:

- Respect for the views of the child; non-discrimination; the right to development, survival, and life; and the child's best interests.

- Participation of children and respect for their views, by the age of 3, most children are able to communicate thoughts and ideas in words. The care providers as families and schools have to listen to children's views and respect them.

- Non-discrimination and universality, discrimination can happen between families and communities. Families may give priority regarding disability, birth order, gender and even physical attractiveness.

- The right to life, survival and development for the child to develop, all rights must be achieved. The base of children's development is the interdependence and indivisibility of child rights.

- In addition, the best interests of the child should lead decisions made by families and by states in unavailability of families.

2.3.2 Sustainable development and children's rights (and CFCI)

The main point in the principles of sustainable development is when the achievement of economic, environmental, and social meets the present generation's needs, devoid of compromising future generations (Gleeson & Sipe, 2006). Through some equitable and participatory procedures, the integrity of the social, economic and environment fabric of global and local environments has to be maintained by Nation governments. The CRC principles strengthen this states' responsibility. It challenges them to maintain the rights of children to live in a healthy, safe, and clean environment, and to have the opportunity to participate in recreation, leisure, and free play in this environment. Children will be more affected than other members of the overall community, if these sustainability goals are not achieved. Obviously, UN principles of sustainable development converged with the rights of children to provide the child friendly city movement's foundation (Gleeson & Sipe, 2006).

Without regard to their level of human development, countries around the world are recently tasked with applying the 2030 Agenda for Development. An integrated framework for the efforts of global stakeholders; national governments; and local governments, has been provided by The Sustainable Development Goals. Accordingly, UNICEF's Strategic Plan 2018–2021 and the New Urban Agenda are closely associated with the Sustainable Development Goals. The local governments have been reinforced indirectly by The Child Friendly Cities initiative approach, in the implementation of the 2030 Agenda, through comprehensively addressing subjects related to the families and children's well-being and health at the local level.

It is not only about mirroring the SDG objectives, in the connection between the 2030 Agenda and the CFCI, but also about concentrating on local development (UNICEF, 2018).

There are numbers of strategies that have to be adopt by a Child Friendly City, to simplify sustainable result and change for children, according to UNICEF (2018) these are: Budget allocations for children; Communication awareness raising and advocacy; Cross-departmental coordination and partnerships; City-wide strategic planning (the CFCI Action Plan); Inclusive child participatory mechanisms and processes; Child-friendly policies and legal frameworks; Collection of data and evidence through monitoring; Capacity building to create sustainable results for children.

The link between sustainable development and children's rights has been formally articulated in several UN global documents and declarations developing from intergovernmental meetings and conferences. The Plan of Action is one of the most important documents for stimulating discussions on sustainable development and children (UNICEF, 1990). This action plan is for all stakeholders, communities, and local governments to encourage and implement sustainable development. Agenda 21 has been used by UNICEF to strengthen the Child Friendly Cities Initiative like an action program to encourage community organizations and mayors for letting children to participate in environmental decision-making (Gleeson & Sipe, 2006).

In addition, the connection between the lives of children and sustainable development is not just about the responsibility of adults as guardians, it is similarly about determining the capacity for young people and children to involve and

participate in planning, development and implementation processes (UNICEF, 1997).

It has been stated by UNICEF (1997) that children have an exceptional interest in the

formation of sustainable human settlements that will provide fulfilling and long lives

for themselves and also for upcoming generations. They need to have chances to

contribute and to participate in a sustainable urban future.

Finally, a society will not be concerned with its future in general and will be

susceptible thereby to social and ecological abnormality, if it overlooks children and

youth. But when a society respects and provides for children's needs, it will always

take care of the future and make provision for it (Palone, 2014).

2.4 Child friendly cities

Special needs of children in urban areas have got more focus, during urbanization

and active urban development, in the twentieth century. Our future is connected with

children and children reflect our societies. If societies take care and focus on the

well-being and welfare of children then this is the nation's primary task to prepare

for the future. Accordingly, Child Friendly Cities building is like a challenge or new

experiment for the whole community and members of society, and also for local and

national municipalities (Nam & Nam, 2018).

The embodiment of the Convention of the rights of the Child at local level is the

definition of a Child Friendly Cities (CFC). It is about the reflection of the rights of

the children in laws, budgets, policies and programs. In addition, children are active

agents and they have an active role in child friendly cities and their opinion should be

asked and respected, and they have to influence decision making processes

(UNICEF, 2017). According to UNICEF (2015), children and youths in (CFC) have

full chances to develop and participate in community and express their opinion on matters affecting them. This is a city where every child has equal rights regardless of their social status, religion, gender, nationality, and health status.

During 1996, more attention was given on children's problems in cities by the United Nations, then in the same year, the United Nations on Conference of Human Settlements (Habitat II) in Istanbul provided influential motivation and inspiration to care about and solve urban children's problems. So, in that time Child Friendly Cities initiative was launched in Turkey, acting on a resolution passed through the second UN Conference on Human Settlements (UNICEF, 2017). The idea of the Child-Friendly City (CFC), backed by internationally agreed-upon policy instruments, for example, the Habitat Agenda, Agenda 21, and the Convention on the Rights of the Child (CRC), exemplifies a commitment to produce better living situations in cities for all children by protection their basic human rights. The CFC also guaranteed all children to make the world a world for them (Chatterjee, 2006).

The international program of Child Friendly Cities (CFC) is working to have better conditions for children, and to prepare opportunities for them to affect decisions. Building a network of communities is done by the Secretariat of Child Friendly Cities that exemplifies the Convention's principles. Child Friendly Cities (CFCs) give children the chance to contribute fully in the community, express their thoughts, and impact local decisions. They protect children from exploitation and violence, and give them basic services such as health care, safe water, and education. Child Friendly Cities will protect the children's right to be equal citizens regardless of income, ethnic origin, gender, religion or disability, and decrease pollution, drink safe water, develop green spaces, walk safely in the streets without adult's

supervision, meet friends and play together, and participate in family, community and social life and in cultural and social events (McAllister, 2011). Safe and supportive environments that nurture children of all ages is the main principle of the initiative, with chances for learning, leisure, psychological development, social contact (Gleeson & Sipe, 2006).

Building CFCs is the same as implementing the Convention on the Rights of the Child in the local level (Nam & Nam, 2018). Additionally, the European cities workshop was held at the Innocenti Research Centre in 2003, and in preparation of this, a theoretical paper was written by Peter Newell for the International CFCs Secretariat. It has been mentioned in the paper that implementing the CRC headed by the local government in an urban area, is the process of building child friendly city. Moreover, according to Gleeson and Sipe (2006) building a child friendly cities is not a theoretical process, it is a practical one, that has to engage actively with young people and their actual lives. Based on UNICEF (2001) there are some basic elements that are needed by Child Friendly Cities to ensure that the city is able to fulfill the CRC's principles, these are listed in (Table 2-1).

In accordance with UNICEF (2015) CFC initiative has organized an extensive range of partners which are: community-based organizations (CBOs) and non-governmental organizations; local and central government bodies; experts and academic institutions; business and the media; national and international agencies; and the most significantly, youth and children groups. The initiative involves the Convention on the Rights of the Child's implementation, at a local level and with most direct influence on the children's lives.

- Good access for all children to affordable, quality basic health services, clean water, adequate sanitation and solid waste removal;
- Local authorities to ensure that policies, resources allocations and governance actions are made in a manner that is in the best interests of the children and their constituencies;
- Safe environments and conditions that nurture the development of children of all ages with opportunities for recreation, learning, social interaction, psychological development and cultural expression;
- A sustainable future under equitable social and economic conditions, and protection from the effects of environmental hazards and natural disasters;
- Children have the right to participate in making decisions that affect their lives and are offered opportunities to express their opinions;
- Special attention is given to disadvantaged children, such as those who are living or working on the streets, sexually exploited, living with disabilities or without adequate family support;
- Non-discrimination based on gender, ethnic background or social or economic status.

Figure 2.1: Characteristics of child friendly cities (Gleeson & Sipe, 2006)

As we have mentioned above, a child friendly city is a program of decent local governance dedicated to the implementation of the CRC. All local governments regardless of their size, even in rural places, are all asked to make sure that their governance provides priority to all children and makes them participate in the processes of decision making (Gleeson & Sipe, 2006).

We can clearly see an important growth in the Child Friendly Cities initiatives, in recent years. This is positive evidence to the importance of the initiative for municipalities and local actors. So recently, the CFCI movements have been spreading around the world, and applied in more than 1300 cities in more than 38 countries with 30 million children (UNICEF, 2017, 2018). Moreover in this regard, while developed countries tend to concentrate mainly on the contribution of children; safe and friendly environment; and urban planning, developing countries tend to concentrate on education, health care, child-care, and nutrition services as the main challenges (Nikku & Pokhrel, 2013). Municipalities that are involving in the CFC

Initiative are implementing many policies to advance children's rights, wellbeing, and welfare under the principles defined above, and municipalities continue to try to become better places for children to live by expanding children's rights.

2.4.1 The vision and goals of child friendly cities

International human rights instruments is supported the CFC movement, So it has the promise of making environments that could nurture young people and children, particularly in contexts where they are most vulnerable in densely inhabited, resource disadvantaged developing societies that are home to a important percentage of the universal youth population (Chatterjee, 2006). Moreover, Child Friendly Cities vision is that all of the children enjoy their childhood, as well as, young people enjoy their youth, and reaches their full possibilities through identical realization of their rights within their communities and cities (UNICEF, 2018).

In accordance with UNICEF (2018) to work to fulfill this vision, local governments with their partners categorize objectives (outputs) under the umbrella of the five goal areas (outcomes) that stated in the Child Friendly Cities Framework for Action. The Framework defines a community or city with child friendly governance, which purposes at reaching these goals:

1. Every young person or child is appreciated, treated fairly, and valued by local authorities and in their communities.

2. Every young person or child has their priorities, voice, and needs heard and taken into consideration in public policies, programs, laws, budgets, decisions that influence them.

3. Every young person or child has access to quality needed social services;

4. Every young person or child lives in a s clean, secure, and safe environment;

5. Every young person or child has chances to enjoy and involve leisure, play family life.
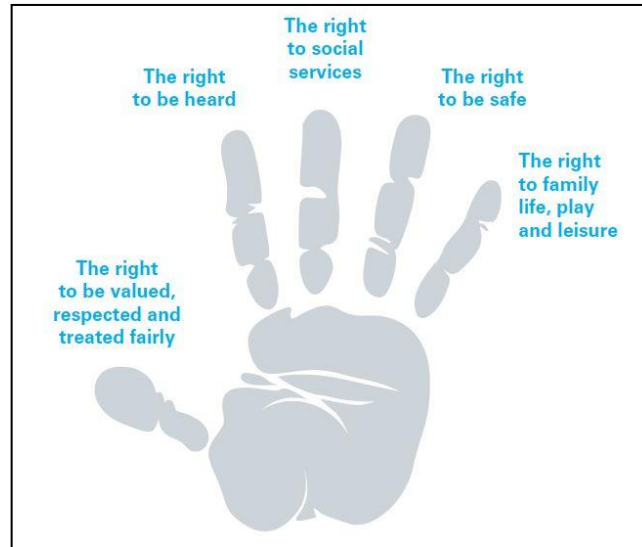
Figure 2.2: The goals of child friendly cities (UNICEF, 2019)

2.4.2 Principles of child friendly cities

The principles of creating child friendly cities are particularly significant in light of growing urbanization and the significance of citizens, plus children and young people, to affect decisions taken by local programs and authorities being implemented (UNICEF, 2015).

On the base of Brown et al. (2019), child friendly city look like a city which respects children's rights; it is connected with nature; it lets children to participate in the processes of urban design and policy making; it is safe; it focuses on independent mobility; and it has specific place for play.

In a child friendly city, safety and health are a priority. In the criteria of the CFC there are several criteria about safety, health, and both. These consist of the right to:

being protected from violence and abuse; get elementary services such as education and health care; live in an unpolluted environment; drink safe water; walk safely in the streets on their own (McAllister, 2011).

In accordance with the CFCI website UNICEF (2004), a Child Friendly City is a local system of good governance working to achieve the rights of children. In addition, the principle of child friendly city is every child has the right to:

1. Influence decisions about their city.

2. Express their opinion on the city they want.

3. Participate in family, community and social life.

4. Receive basic services such as health care and education.

5. Drink safe water and have access to proper sanitation.

6. Be protected from exploitation, violence and abuse.

7. Walk safely in the streets on their own.

8. Meet friends and play.

9. Have green spaces for plants and animals.

10. Live in an unpolluted environment.

11. Participate in cultural and social events.

12. Be an equal citizen of their city with access to every service, regardless of ethnic origin, religion, income, gender or disability.

Table 2.1: Child Friendly cities principles and CRC articles (Author)

Principles of CFC (Keywords)		CRC Articles
1. Decision making	Art.12	Children have the right to give their opinions freely on issues that affect them. Adults should listen and take children seriously.
	Art. 13	Children have the right to share freely with others what they learn, think and feel, by talking, drawing, writing or in any other way unless it harms other people.
	Art. 15	Children can join or set up groups or organizations, and they can meet with others, as long as this does not harm other people.
2. Express their opinion	Art. 12	Children have the right to give their opinions freely on issues that affect them. Adults should listen and take children seriously.
	Art. 14	Children can choose their own thoughts, opinions and religion, but this should not stop other people from enjoying their rights. Parents can guide children so that as they grow up, they learn to properly use this right.
3. Participation in community.	Art. 8	Children have the right to their own identity – an official record of who they are which includes their name, nationality and family relations. No one should take this away from them, but if this happens, governments must help children to quickly get their identity back.
	Art. 9	Children should not be separated from their parents unless they are not being properly looked after – for example, if a parent hurts or does not take care of a child. Children whose parents don't live together should stay in contact with both parents unless this might harm the child.
4. Getting essential services.	Art. 5	Governments should let families and communities guide their children so that, as they grow up, they learn to use their rights in the best way. The more children grow, the less guidance they will need.
	Art. 6	Every child has the right to be alive. Governments must make sure that children survive and develop in the best possible way.
	Art. 18	Parents are the main people responsible for bringing up a child. When the child does not have any parents, another adult will have this responsibility and they are called a "guardian". Parents and guardians should always consider what is best for that child. Governments should help them. Where a child has both parents, both of them should be responsible for bringing up the child.
	Art. 24	Children have the right to the best health care possible, clean water to drink, healthy food and a clean and safe environment to live in. All adults and children should have information about how to stay safe and healthy.
	Art. 25	Every child who has been placed somewhere away from home - for their care, protection or health – should have their situation checked regularly to see if everything is going well and if this is still the best place for the child to be.
	Art. 26	Governments should provide money or other support to help children from poor families.
	Art. 27	Children have the right to food, clothing and a safe place to live so they can develop in the best possible way. The government should help families and children who cannot afford this.
	Art. 28	Every child has the right to an education. Primary education should be free. Secondary and higher education should be available to every child. Children should be encouraged to go to school to the highest level possible. Discipline in schools should respect children's rights and never use violence.
5. Getting safe water	Art. 24	Children have the right to the best health care possible, clean water to drink, healthy food and a clean and safe environment to live in. All adults and children should have information about how to stay safe and healthy.
6. Security	Art. 6	Every child has the right to be alive. Governments must make sure that children survive and develop in the best possible way.
	Art.19	Governments must protect children from violence, abuse and being neglected by anyone who looks after them.
	Art. 34	The government should protect children from sexual exploitation (being taken advantage of) and sexual abuse, including by people forcing children to have sex for money, or making sexual pictures or films of them.
	Art. 35	Governments must make sure that children are not kidnapped or sold, or taken to other countries or places to be exploited (taken advantage of).
	Art. 36	Children have the right to be protected from all other kinds of exploitation (being taken advantage of), even if these are not specifically mentioned in this Convention.
	Art. 37	Children who are accused of breaking the law should not be killed, tortured, treated cruelly, put in prison forever, or put in prison with adults. Prison should always be the last choice and only for the shortest possible time. Children in prison should have legal help and be able to stay in contact with their family.
	Art. 38	Children have the right to be protected during war. No child under 15 can join the army or take part in war.
	Art. 39	Children have the right to get help if they have been hurt, neglected, treated badly or affected by war, so they can get back their health and dignity.
7. Safety	Art. 6	Every child has the right to be alive. Governments must make sure that children survive and develop in the best possible way.
	Art. 27	Children have the right to food, clothing and a safe place to live so they can develop in the best possible way. The government should help families and children who cannot afford this.
8. Meeting with friends.	Art. 29	Children's education should help them fully develop their personalities, talents and abilities. It should teach them to understand their own rights, and to respect other people's rights, cultures and differences. It should help them to live peacefully and protect the environment.
	Art. 31	Every child has the right to rest, relax, play and to take part in cultural and creative activities.
9. Having green spaces	Art. 29	Children's education should help them fully develop their personalities, talents and abilities. It should teach them to understand their own rights, and to respect other people's rights, cultures and differences. It should help them to live peacefully and protect the environment.
10. Living in clean environment.	Art. 24	Children have the right to the best health care possible, clean water to drink, healthy food and a clean and safe environment to live in. All adults and children should have information about how to stay safe and healthy.
11. Participation in cultural and social events.	Art. 31	Every child has the right to rest, relax, play and to take part in cultural and creative activities.
12. Equality	Art. 2	All children have all these rights, no matter who they are, where they live, what language they speak, what their religion is, what they think, what they look like, if they are a boy or girl, if they have a disability, if they are rich or poor, and no matter who their parents or families are or what their parents or families believe or do. No child should be treated unfairly for any reason.
	Art. 12	Children have the right to give their opinions freely on issues that affect them. Adults should listen and take children seriously.
	Art. 13	Children have the right to share freely with others what they learn, think and feel, by talking, drawing, writing or in any other way unless it harms other people.
	Art. 14	Children can choose their own thoughts, opinions and religion, but this should not stop other people from enjoying their rights. Parents can guide children so that as they grow up, they learn to properly use this right.
	Art. 30	Children have the right to use their own language, culture and religion - even if these are not shared by most people in the country where they live.

2.4.2.1 Participation in decision making about their city

Public participation is very important point planning process, and is generally recognized as a 'good thing' for planners and designers. But only from the 1990s children and young people were involved in the planning process with planners (Gleeson & Sipe, 2006). In addition, along with practice and research that emphasis on the urban environments' quality, a rights-based approach to urban policy means respecting the children and young people's right to participate and contribute in the decision making processes (Brown et al., 2019).

Participation means that children express their opinions and tell their experiences and contribute in the process of decision-making. The right of human to take part in decisions that influence their lives is an essential human right, and stated in the United Nations Convention on the Rights of the Child that children have to be given the opportunity communicate their thoughts, make decisions that are appropriate for their lives, and to express their opinions (UNICEF, 2006). In addition, children themselves know what they need more than adults, so it is right to say they are the experts on their own lives. Children's participation is mostly described as the process that children participate in and incorporate in those decisions that influence their own lives and the communities and cities which they live in.

After the Convention on the Rights of the Child, other international agendas have provided requirements for young people to be an active agents in action and decision-making, as well as Agenda 21, that contains a section on the role of children and youth should play in affecting the environment (Derr et al., 2018), and Habitat II and III, which contain provisions for young person to shape urban decision making (Habitat, 2016).

Those possible dangers that are seen by children do not always the same as by adults. Moreover, we should let our children be responsible for their own lives and choose how and where to play, so it may help them to be cleaner and safer. The city can take advantage from participation of children in decision making because it helps the government better understand the issues of children, and it also helps to promote citizenship and democratic skills for this new generation (Derr et al., 2019). Children are great experts on their own requirements and needs. They understand more than adults about some of the greater details of community life, and certain research have made the effort to involve young people in research about their communities (McAllister, 2011).

The important key to planning with children is integration; we can improve our society and make it more equitable by integrating young people into the process of decision making.

2.4.2.2 Feel free to indicate their opinion about their city

Every child has the right of sharing thoughts freely, and they must be completely free to express their opinions and ideas about decisions that influence them and affect their environment. Giving opportunities for children to share their ideas and thoughts has not just benefits for children alone, it has also benefits for adults and the whole community. In addition, adults can learn new things from children and young people because sometimes children see the world from a completely different perspective. So their thoughts and creative ideas can be used in order to have better and more equitable community.

There are some specific articles in the United Nations Convention on the Rights of the Child, which places commitments on Countries to give opportunities for youth

and children to freely express their thoughts and feelings and their opinions have to be taken seriously in decisions and matters that may affect their lives.

Moreover, Article 19 in the Universal Declaration of Human Rights of 1948 particularly calls for the right to freedom of expression of opinion and thoughts, and also Article 21 stated the right to participate in government (Derr et al., 2018). While these rights apparently could be extended to all individuals, as well as children, advocates of the rights of children supported the establishment of the United Nations Convention on the Rights of the Child of 1989 (CRC) as an approach to guarantee that these children's rights would extend to children directly (Edmonds & Fernekes, 1996).

2.4.2.3 Participate in community, social life and family

The physical environment influences the lives of children, as well as the social environment. In order to improve children's social environments we should think about what is good for children, what creates 'good parenting', the children's contact between each other, family and community, and the role of children play as active agents in society. In addition, there are some factors that forced children not to go outside and spend their whole day at home, which are: insecure public spaces such as the danger of traffic accidents, street violence, and occupation by a dominant group; So these factors affect them to be disconnected with their society and to decrease participating in their community (UNICEF, 2019).

Participation needs governance accountabilities and mechanisms. But participation also has needs of safe and accessible public space for children and their caretakers to meet people. The lack of green and public space in urban areas affects children and

their community not to congregate and socialize, and not to have the quality and quantity space to play. So it limits the time that children spend outside their home.

2.4.2.4 Take essential services as education, shelter, and health care

If cities have proper planning, their population should have access to basic services such as social services, health, and education, which helps them to develop life skills, to thrive, and to meet each other. The right of humans to health care means that clinics, doctor's services, hospitals, and medication have to be available, accessible, on equitable basis, and acceptable and of good quality for everyone (UNICEF, 2019).

In poor and low income neighborhoods where there is absence or the lack of employment opportunities and educational centers such as (libraries, schools), there is a high number of crime rates. In addition, infrastructure and opportunities with interest and investment from authorities are connected together. With decreasing the rate of the first one, the other will decrease too, and it will make a distrust of public institutions for children and young people.

For children in older ages, education does not just mean the academic curriculum. But it is somewhere to engage and learn with civic development, which helps to develop environmental sustainability, social cohesion, and economic inclusion (UNICEF, 2019).

2.4.2.5 Have safe water for drinking

The history of many urban areas has been determined by their access to water, because as we know one of the most fundamental sources of life is water, and it can be defined as a spirit of many cities. All cities should have safe and clean water for drinking and for daily use for children and the whole community; they should also develop managed sanitation services. The dimensions of the human right to

sanitation and water are affordability, accessibility, quality, availability, acceptability of water and sanitation (UNICEF, 2019). Moreover, according to CRC children and adults should have knowledge about their own health and safety.

2.4.2.6 Be secured from violence, abuse, and exploitation

In communities children's safety is one of the main concerns. Recently, children are highly supervised by adults outside their homes and public spaces, which is the result of growing fears of their parents about the risks and dangers to children (Woolcock & Steele, 2008). A main challenge concerning public safety is the attempt to reduce and control criminal activity in many different ways. For instance, preparing well-lit areas particularly (public spaces, streets, and playground); and improving visibility in neighborhoods. So these can help to decrease or at least control criminal activity (McAllister, 2011).

Moreover, there are some other issues that affect children to stay at home or make a risk on their lives. For instance, the risk of violence from other children or adults and exposure to other criminal acts may put children at danger when going out of their home or moving around their area (Spencer & Woolley, 2000). For instance, a research by Leonard (2007) is about children's accounts of dangerous environments, stating that the "once innocent areas for children like public places, parks, and streets have become redefined as spaces where children and young people are in possible dangers.

2.4.2.7 Walk in the streets on their own safely

Every child should have a freedom of movement; they should have a variety of environmental properties to play. In addition, freedom of movement has long been recognized as being of essential significance in a child friendly environment.

Children define the opportunities for freedom of movement as One of the main positive characteristics of an urban environment (Chawla, 2002).

Moreover, children's Independent Mobility (CIM) is one of the rights of children to go to relatives' or friend's house, schools, play areas, shops, or other places by using bike, public transport, or by walking and without adult supervision and freely (Whitzman et al., 2009). Moreover, with increasing in children's ages, the need to availability and accessibility of public space in their community will increase (Holloway & Valentine, 2000).

The freedom of children to experience their cities independently is different through countries, but there are some experiences that are falling in the entire world. For instance: going out after dark, crossing the road, riding the bus alone (Shaw et al., 2015). Moreover, because of safety sometimes parents reduce the freedom of their children but agency and autonomy are also significant. If there is a safer environment, parents will give their children more freedom. Shrinking of public spaces is also another factor that affects children's experiences outdoors (Woolcock & Steele, 2008). So these problems and issues have the influences on the development of children physically and socially (Prezza et al., 2001).

In addition, communities and neighborhoods have to be designed to facilitate walking. Designing the neighborhoods as a mixed-use encourages more walking. Having safe streets for both walking and cycling is so important to include in the design of residential areas. Because having these two activities means the freedom of children in movement without parental supervision.

There are several good cases of walkable communities, and some initiatives to improve children's freedom of movement. For instance, Pedestrian Charter in Waterloo initiative officially put importance on pedestrian comfort and safety; and another example is Denmark that worked heavily for the design of safe streets for children and considerably decreased child mortality rates (McAllister, 2011).

Independent movements such as walking and cycling around their districts or neighborhoods in children's lives can also develop some of their important skills (Kelty et al., 2008; Martin & Wood, 2014). For example those experiences help children and youths to:

- Improve skills in solving problems, such as looking for an alternative if there is an obstacle on the route.
- Develop skills in road safety, for instance having more experience in crossing roads.
- Have more knowledge about their spatial and local area, for example locations of places like shops.

2.4.2.8 Have a meeting with friends and play together

Children improve their mental, social, and physical skills through their playful contact with their world. Play is basically an expression of children's drive for understanding and proficiency (Woolcock & Steele, 2008). Sometimes play is very difficult to describe, psychologists and biologists have sometimes tried to define it according to its function (Giddens, 1964).

Play is human's beginning step in their active lifestyles, it is very important for children for their physical and mental development and for learning and welfare (Kemple et al., 2016). It is the unplanned, voluntary, and natural human expression

which it teaches them to make sense of their world. In addition, in the articles of CRC, it has been stated that every child has a right to involve in recreational activities, to play, to leisure and rest, and to participate in cultural activities freely.

Play is usually considered as being supremely significant for children. If children do not have freedom to go outside and experience their surroundings, so they lose chances for natural play. Children's play has not to be planned and taught by adults, it should be chosen by the children themselves (UNICEF, 2019). The lack or absence of play can totally affect children, such as their development, overall wellbeing, levels of physical activity, eyesight, and allergies (Brown et al., 2019). Moreover, it is important for children to engage in different types of play which give them too many chances to socialize, explore, learn, and experience. Children should play whenever and wherever they want.

The lack of physical activity and play can also influence the whole life of humans. Recently, around the world rates of heart disease and obesity among youths have increased significantly, which are the effects of lack of play and physical activity. The absence of walkable and safe spaces or places to play is the main reason for raising the rate of physical inactivity in children.

2.4.2.9 Have green spaces for animals and plants

One principle for a Child Friendly City directly shows that children and youth have the right to: "Have green spaces with animals and plants". Urban natural spaces are extremely valuable properties that have to be recognized for the benefits of the entire community population. They offer various benefits to the protection of the natural environment, and also to the well-being and health of people, and to the sustainability of cities.

C. Clark et al. (2007), undertook a regular review of the influence of the built and physical environment on mental health of children. In the finding of the study he stated about the necessity of children in having access to open and green spaces. They mentioned those studies that observed how access to green and natural areas can affect children's mental health. In their study they concluded the significant benefits of natural and green areas for children's mental health. In any community if they have proper green and natural spaces then they will be a healthy and safe environment for all. Having access to green space is so important for people, particularly for children, and it has significant benefits. But when children do not have any connection with the natural and green environment, they are more likely to suffer from issues and problems with their general health and wellbeing, behavior, and socialization (Engemann et al., 2019).

There are several outdoor places for children to play in, which is outlined by (Woolley, 2007). For example, domestic open spaces like; neighborhood open spaces such as playing fields, parks, natural green spaces, streets, sports, playgrounds, city farms, and grounds; and community gardens. It is an important point to have a creative design for these spaces by adding seating areas, vegetation, or any other ideas to the space. Which it gives citizens more opportunities for more unstructured play and socialization.

(Karsten, 2005) defined that the street public space is now a space for adults, while there is just a home as a space for children. Many government officials, architects, and planners are not thinking of children when they design a space or a place, they are the last member of society to think of, and the need and requirements of children are not or rarely given priority.

2.4.2.10 Live in a clean environment

One of the principles of Child Friendly City is the need for the need for an unpolluted environment. The built environment can cause urban-specific environmental health problems. Non-transmissible diseases such as obesity, cancer, and pneumonia, for instance, need structural solutions on a larger scale, with interventions in the physical urban environment. Pollution is connected with pneumonia and other breathing illnesses directly that accounts for approximately 1 in 10 under-five deceases. Air pollution is defined as a leading danger to the health of children (UNICEF, 2019).

The influences of air pollution and traffic, their play space qualities, the connectivity of community services and activities, and having proper numbers of natural areas for children are all significant to their happiness (Woolcock & Steele, 2008). Huge number of cars and using vehicles are cause to significant risk on children's life from road accidents and the threat of air pollution and noise (Stansfeld et al., 2000).

2.4.2.11 Join social and cultural events

All children have the right to participate in cultural and social activities and events, and to play, rest, and relax. Children need to socialize with people and meet new friends to learn from them. They need to involve social events such as birthdays, family gatherings, and so on. Participating in religional and cultural events is also important for children, to experience new things and understand their culture and religion, and feel as if they are a part of this community.

2.4.2.12 Access to all services and be equal, regardless of their religion, gender, income, ethnic origin and disability

Nondiscrimination is one of the most important rights of children. Every child without exclusion has to receive all of their rights to actual protection. The rights of

all children have to be respected regardless of the child or their parent's language, race, political opinion, color, religion property, national, birth, social or ethnic origin, or disability. Outlawing discrimination is an essential and absolute principle, stated by the whole international standards concerning to human rights. Discrimination is an absolute violation of human rights (UNICEF, 1989).

According to Woolcock and Steele (2008), children are victims of actions of discriminatory prejudices and racism. The most affected are:

- Girls who are victim in several cultures to discriminatory attitudes: more than 20 million girls from getting an education are avoided by discrimination.

- Children and young people that haven't incorporated into society from ethnic and minority communities.

- Children and young people from poorer backgrounds.

- Children and young people who are disabled and have specific necessities, which more than 10% of the world's children are handicapped, and more than ¾ won't have access to the care, education, and support they need.

2.5 Involving children in urban planning and design

Participation in the decisions makings is one of the essential rights of children, which affect their own lives and they also have an ability to offer valuable suggestions and opinions from different perspectives. In intergenerational urban spaces children have not just a right to be as a user; they have to be engaged as participants in design and planning of those spaces (Derr et al., 2013).

Children are like experts on their own desires and requirements. They recognize the finer details of public life, and specific studies have tried to include youth and

children in research about their societies and communities (Burke, 2005). It has been stated by Noschis (1992) that children and adults should be interconnected together and also with the local community on a systematic basis, and it has been mentioned that the separated fenced, and classic playgrounds do not support children learn or develop about the world. Integrated spaces help children to learn the actions of adults; also it helps them to learn about the ways of being members of society.

In addition, the most important point in participating children is having information on how to use their ideas and opinions in an effective and beneficial way. As Simpson (1997) explained that there are many studies and examples that mentioned and accepted the idea of participating or involving children in the urban environment design, but the general absence and lack of academic or theoretical analysis has shown us that there are not enough proposals on how these participation by children and youth can be effective.

Moreover, from the few recent decades, the planning with children topic has developed in the literature and became popular. Building a Child Friendly City calls for considering children and youth in two different ways: planning with children, and planning for children (McAllister, 2011). This research field certainly started in the late seventies, after the discussing of two studies by first The Child in the City by Ward (1978) and then Children's Experience of Place by R. Hart (1979), which were studies discussing children's opinions of their environments. After that, there have been countless articles, researches and books on how to design and plan cities for children and youth.

By planning with children, participating children into the community can be significantly developed and improved, but in planning for children it can also be addressed. Playing areas are sometimes hidden away, and children are not viewed as active participants that have a right to be involved in society, they are viewed as difficulties and issues to be solved. Noschis (1992), defines that playgrounds should not be "an island segregated from the rest of neighborhood", they have to be a place that children and youth have access to in the neighborhood, and that is a role of playgrounds.

On the basis of UNICEF (2006), there are several benefits in participation of children, for both children and adults. First for children the benefits are: They are learned how democracy works and that how they educated for democratic citizenship; They become aware of democratic decision-making culture, that there is no difference in the right of decision making between children and adults; By working with different age groups, younger ones learn from the older ones who serve as role models in indicating self-confidence, children in older ages learn to treat younger ones kindly, with consideration and respect, and, when needed, protect them; They participate in areas of life actively, which are normally forbidden to children, such as decision-making on a local policy level; In mixed groups, gender equality is strengthened; They improve their significant social and personal skills, such as methods of decision-making, communication, and conflict resolution, also In some projects, they learn to how to speak in public in front of older peoples and adults, and to express their certain opinion or explain that why they dislike and reject something; And they realize that, participation can be lively, enjoyable, and fun, in well-implemented projects.

Second for adults the benefits are: It is an educational experience for adults to learn from children; Adults understand the great potential of the young generation and their views and the way they see the world; they become more open to understand the new ideas by children.

The benefits children gain from working on an involvement project are advantageous for the whole community. Children from both genders who are empowered to form and support their own opinions, who are conscious of their requirements and skills and have experienced democratic decision-making practically are knowledgeable, responsible people who will contribute to society's continuity and additional development.

Working with children, and involving them in decision-making provide many serious challenges. For example, like the lack of experience of children, and the need of the extra time, as Driskell mentioned about that in his book, Creating Better Cities with Children and Youth (Driskell, 2002). For the welfare and protection of children, all children participation should be: Respectful; Facilitated with child-friendly environments; Educational and transparent; Voluntary; Relevant; Supported by training; Inclusive; Accountable; Safe (UNICEF, 2018).

2.5.1 Asking for experience and perceptions of children

The involvement of young people and children in the processes of building and transforming their surrounding environments has an essential role in the formation of child-friendly environments (Adams, 2009). Children can have valuable and creative ideas and thoughts about their neighborhoods. They are the ones who know about their needs and requirements the best. In addition, when we want to ask children about their opinion we should understand that children are not always able to express

them by words, sometimes using other approaches as play and art are the best tool for participation (Brown et al., 2019). As we mentioned before, it is important to know how to listen to children and which way to use. But also the way we use to ask them our questions is important too. So for example, it is better to ask children 'how do you like to play' than 'what would you like in a playground?' because in the second one you will just get results in traditional answers, but in the first one you will get the better answers and can be a good way for designers to know about their experiences and to work with (Winge & Lamm, 2019).

In addition, many children in the world, mostly girls, are not permitted to walk and cycle to school, use public spaces, and play outdoors; or they do not feel comfortable doing so. Sometimes, from the children's perspective, traffic and stranger danger are the biggest obstacles in keeping active and healthy (Woolcock & Steele, 2008). There are some researches about the importance of understanding children's perception of risk and danger and using their ideas and opinions in design and planning of community. For instance, a research by Leonard (2007) which is about children's accounts of dangerous and risky environments, 65 children aged 14 were asked to participate and explain their experiences of risk and to draw spaces where they felt safe or unsafe. It states that parks, streets, and other public places which are most innocent spaces for children, have become redefined as spaces where children are in potential risk. The study recommends "children's geographies cannot be separated from the societies that they spend their daily lives in".

2.5.2 Children's drawings and research

The United Nations Convention on the Rights of the Child requests its member countries to respect rights of children, which include expressing their opinion, participating in decisions that affect them, being an active agents in their community,

and dependable informants who have ability to understand, investigate and contribute to the research process, and whose opinions, drawings, and views are worthy of investigation (Deguara, 2015).

Drawings of children provide a 'window' into their views and feelings, mostly because they reflect a copy of their own minds (Farokhi & Hashemi, 2011). It has been more than a century since children's drawings have been catalogued, analyzed, and studied (Duncan, 2013). Some of the initial publications on the creative and value importance of artwork of children were by figures for example author and pedagogue, appearing in the investigations of English naturalist, Swiss caricaturist (Darwin, 1877). In addition, drawing which exists since the prehistoric era is a general means of expression and includes a system of lines grouped to make a shape. It allows the children to express their thoughts about their environment more simply than by words (Oulmane-Bendani, 2013).

In the same field of speech and playing there is also expression. Children who express their pains, enjoyments, feelings, and imaginings by drawing are happy children. By children's drawings, you can understand their relationship with their environment and others (Edwards, 2016). Moreover, drawings certainly tell of the inner self, existence, and thoughts of the drawer. People in general enjoy drawing because drawing motivates the global desire to express oneself and then their heart is released. In addition, according to Farokhi and Hashemi (2011) one of the main techniques to collect social information about and from children is drawing. Drawings can be used as a powerful tool for the evaluation purposes, because most children are able to draw without being stressful, and also many children do not like

to answer questions, so using drawing tests will be easy, completed, enjoyable and quick.

In general, there are many motives for studying drawings of children and they differ from discipline to another. But, within these various disciplines and systematic approaches, there are two key orientations in defining drawings. First, drawings are described as a cognitive deficit or as a tool for reflecting limited ability of children for conceptual representation. Second, drawings are described as a chance to create equivalence as the graphic statements are not affected by the visual retinal image (Bakar, 2002).

In addition, according to children's age, their drawings can be divided into several stages by different scholars, in this study the ones from Lowenfeld (1957) and Edwards (1997) have been explained.

Table 2.2: Drawing development in children

Perspectives **Drawing Development in Children** Viktor Lowenfeld Betty Edwards 2 | 3 | 4 | 6 | 8 | 12 | 14 yrs	**6 years**	**8 years**	**10 years**	**12 years**
Viktor Lowenfeld *Creative and Mental Growth*	**The schematic stage** The child arrives at a "schema," a definite way of portraying an object, although it will be modified when he needs to portray something important. The schema represents the child's active knowledge of the subject. At this stage, there is definite order in space relationships: everything sits on the base line.	**The gang stage: The dawning realism** The child finds that schematic generalization no longer suffices to express reality. This dawning of how things really look is usually expressed with more detail for individual parts, but is far from naturalism in drawing. Space is discovered and depicted with overlapping objects in drawings and a horizon line rather than a base line. Children begin to compare their work and become more critical of it. While they are more independent of adults, they are more anxious to conform to their peers.	**The pseudo-naturalistic stage** This stage marks the end of art as spontaneous activity as children are increasingly critical of their drawings. The focus is now on the end product as they strive to create "adult-like" naturalistic drawings. Light and shadow, folds, and motion are observed with mixed success, translated to paper. Space is depicted as three-dimensional by diminishing the size of objects that are further away.
Betty Edwards *Creative and Mental Growth*	**The Landscape** By five or six, children develop a set of symbols to create a landscape that eventually becomes a single variation repeated endlessly. A blue line and sun at the top of the page and a green line at the bottom become symbolic representations of the sky and ground. Landscapes are composed carefully, giving the impression that removing any single form would throw off the balance of the whole picture.	**The stage of complexity** At nine or ten years, children try for more detail, hoping to achieve greater realism, a prized goal. Concern for where things are in their drawings is replaced by concern for how things look—particularly tanks, dinosaurs, super heroes, etc. for boys; models, horses, landscapes, etc. for girls.	**The stage of realism** The passion for realism is in full bloom. When drawings do not "come out right" (look real) they seek help to resolve conflict between how the subject looks and previously stored information that prevents their seeing the object as it really looks. Struggle with perspective, foreshortening, and similar spatial issues as they learn how to see.	**The crisis period** The beginning of adolescence marks the end of artistic development among most children, due to frustration at "getting things right." Those who do manage to weather the crisis and learn the "secret" of drawing will become absorbed in it. Edwards believes that proper teaching methods will help children learn to see and draw and prevent this crisis.

In addition, according to Bakar (2002) many other researchers of children's drawings such as Goodnow; Kellog; Golomb; and Thomas, stated that the process of drawing changes through familiar developmental features as same age group of children do employ the same techniques, strategies and tools, or in representing certain figures or objects in their drawings. These several stages are the result of the limited cognitive conceptual development of children that impose limitations on realizing more complex depictions in drawing as proposed by Piaget (Bakar, 2002).

Arnheim (1997), has defined drawing as visual art and to recognize a language of drawing and graphic logic needs a detailed approach including artistic process and a dynamic idea of visual perception. In his theory he has stated that drawing of children are viewed from the viewpoint of visual art, formed through artistic procedure shaped with 'graphic logic' and understanding drawing needs 'conception of visual perception.

Moreover, Machón (2013), categorizes children's drawings for eleven groups which are: natural elements, sun, birds, human figure, flowers, houses, trees, clouds, transport, cars, and mammals; and human figure is the most used one by children. Similarly, in her research Hall (2010) made an effort to list the children's drawings content, for fourteen key content strands: natural environmental features, weather/sky features, fire, buildings, people, animals, human made environmental features, writing, miscellaneous objects, vehicles, names, toys/play equipment, symbols/patterns/abstracts, and numbers.

In free drawing, the requirements and interests in the children's heart can be understood by how they choose the objects and themes. According to Farokhi and

Hashemi (2011) in a research in Florence, an important tendency was found, when they studied on the children's drawings from grade one to grade five. It was found that sixty percent of children aged 6 to 7 drew "houses" their free drawings, with a very small number of flowers and trees or other things. So drawing "house" is interpreted as the stability, emotions and strength that are achieved by life in somewhere that humans have their essential needs in it. But in drawings by children aged 10 and 11, "houses" are one object inside full of other items such as sun, flowers, and trees, that symbolize necessities of the world rather than just a home or a place to live.

According to Duncan (2013), children can use:

- Different lines can be used to symbolize specific landscapes and contexts, like zigzags for grass or wavy lines to represent water.

- Different colors can be used to symbolize particular objects such as using white for the moon and blue for water.

- Different sizes and composition can be used for suggesting relations and distinguishing types of objects within a scene.

- Different shapes can be used for making a copy of objects in actual life, for example: for drawing balls they use circles, and for houses and vehicles they use rectangles and squares.

Consequently, drawings can be seen as a successful tool for reading children's perspectives (Thomson, 2008). These discussions also propose that sometimes children's drawings are different significantly from child to child, and context or situation.

2.5.2.1 Benefits of using children's drawings as a research method

One of the main benefits of using drawing as a tool for understanding children's situation and feeling is that drawing can highlight individualistic perspectives more so than writing and conversation, because by writing and conversation you might get less detailed or more generic descriptions or information of the same objects (Duncan, 2013). For instance, children aged from one to seven years might have limited ability to express their idea by written language as they have not learned to use all the letters or to make sentences. So, most of the researchers view the drawing method as child-friendly and as a tool that children can easily respond to, enjoy and engage in.

Analyzing the drawings of children has been a systematic measure to evaluate opinions and attitudes of children towards their environment. Their drawings are emotional indicators for particular environmental issues, and show their attitudes to diverse environmental situations.

Children's drawings are used as facilitators for supporting other research methods in most of the times (R. A. Hart, 2013). For example, the information that is collected from drawings can supplement an interview. Children's drawings can be used in several other ways in research and studies as they are a common part of activity of the children.

Drawing has been described as windows in perceptions and thoughts of children of the social world, and it is also a window into their views and feelings, generally because they are the reflection of the image of children's mind (Thomas & Silk, 1990)

2.5.2.2 Challenges in using children's drawing as a research method

Hall (2008), states that, drawings of young children are not easy to understand, and understanding of the environment in which the activity of drawing takes place is essential to be able to realize the purposes and meanings children attribute to their drawings. In addition, sometimes through drawing there are hardly any concrete techniques and strategies offered to use in receiving the most of the collected data (Bakar, 2002).

In addition, understanding children's drawing is different according to the child's age, environment, and context. So the task may prove challenging in accessing children's own meanings and analyzing these diverse drawings (Dockett & Perry, 2005).

As it has been mentioned above, most of the researchers view the drawing method as child-friendly and as a tool that children can easily respond to, enjoy and engage in. However, this may not be the same for all of the children in every context. Some researchers have demonstrated that some children do not like drawing and it is not very welcomed like a positive experience, they just do not see and understand the point in drawings (Duncan, 2013; Einarsdottir et al., 2009).

There are many difficulties and problems related with using children's drawings as a methodological tool in studies of environmental design for and with children. It is still not considered as a main research method, although drawings of children as research methods have been used and decided for more than hundred years (Golomb, 1992). This method is still in social science studies not clearly identified as a method on its own but perhaps within the category visual document (Bakar, 2002). Recently,

continuing childhoods' social and cultural perceptions developments and opinions make children participate in the center of the research process and studies (A. Clark, 2011).

Shared information; facilitating the development and expression of opinions and evolving concepts; as aesthetic objects; translating emotions and feelings; or sheer pleasure are reasons of creating drawing by children and that should not be overlooked by those who want to create children's viewpoints from the drawings they make (Matthews, 2003).

2.6 Neighborhood effects on children

Neighborhoods for children are those environments that define their social and physical worlds. As it has been stated in Oulmane-Bendani (2013), the space and environment in which a child lives is directly related to their personal development, and it becomes a basis and a condition of their development. So children's imagination, their desires and curiosity to explore their neighborhood and surroundings have to be maintained and supported by interesting, welcoming, and safe physical environments (Palone, 2014).

In the 1990s a series of experimental papers have been seen about the rise of representing the neighborhoods in which children go to school, play, and live particularly those peoples with poverty, affect their wellbeing and health. But after that there is strong proof to propose that the cultural, social, built characteristics, and economics of neighborhoods of children lay down significant, often life-long bases for their development (Minh et al., 2017).

Play spaces in neighborhoods need great preparation, planning and design in order to support the wellbeing and health of children and youth by improving socialization and physical activity in the area. In addition, there is a process called biological embedding, through this process environmental and social experiences in the children's beginning ages are theorized to form physiological changes which have permanent protective or harmful effects on health, learning, wellbeing, and behavior of children (C. Mitchell et al., 2014). Moreover, in neighborhoods where residents share comparable attitudinal and behavioral norms, or in areas that inhabitants work in for common goals, residents might be more probable to monitor and support children in their area, and to share resources (Froiland et al., 2014; Minh et al., 2017).

Certainly studies show that young people and children are spending fewer time outside and have limited independent mobility in their neighborhood (Pooley et al., 2005), and sitting and using screens more than earlier generations (Martin & Wood, 2014). So, it means children in the previous generation were more active than today's children. In addition, children's physical inactivity causes several non-transmissible diseases such as some cancers, heart disease, diabetes, and stroke; and affect the rising global phenomenon of children overweight and obesity (World-Health-Organization, 2018). On the basis of Ikeda et al. (2020), the average percentage of young people and children that met approvals on physical activity for health is in the range between 27 to 33%.

Vinson and Homel (1976), measured the quality of neighborhood by the street-type as commercial/retail or residential, social problems index, floor occupied, occupancy type housing quality in terms of maintenance, availability of space for play. The

hypothesis of the research was that after letting for the process of community selection, young people which live in environments with lower quality would have more negative feelings, would be less satisfied with many areas of their lives, and would experience more limited and fewer positive friendship patterns (Homel & Burns, 1989). Moreover, sometimes depending on the neighborhoods if they are impoverished, many or wealthy few, they can be optimistic and undesirable places for children. So, cities, towns, and neighborhoods have to be somewhere that children can learn, socialize and observe about the way that society functions and participate in their community's cultural fabric (Gleeson & Sipe, 2006).

Children benefit from more walkable neighborhoods as adults in most of the similar ways, and also in other ways concerning their developmental trajectory. Also important developmental skills are able to be gained when children and youth can move independently around their neighborhood for example, by walking or cycling (Kelty et al., 2008). The neighborhood walkability influences on activity of children, with denser residents being a main factor. Plantinga and Bernell (2007), in their study about urban sprawl and obesity and it focused on adults but it can be the same thing for children also, which they found that people who move to denser areas lose weight. Experience with traffic for parents is a well-known safety concern, children do not like to cross busy roads or streets with high traffic volume which these have influence on their ability to walk between their home and school (Trapp et al., 2012). Moreover, emotional development and social skills of children may be improved by having to deal with the world situation in the way of their independent movement in their neighborhoods (Gleeson & Sipe, 2006). In addition, distance is not the greatest barrier to movement but a lack of spatial knowledge, parental controls, personal fear, the cost of public transport, and dangerous traffic (Lynch, 1977).

The neighborhood aesthetics is a significant concept. It has been researched from an adult perspective most of the time, however, with several studies connecting physical activity with neighborhood aesthetics. In contrast, negative aesthetics in neighborhoods by abandoned buildings, litter, visible graffiti, and neglected gardens can increase fear of crime and prevent individuals from walking inside their neighborhood. For instance, a research with participation of more than four hundred children in primary school discovered that physical activity with higher levels were related with the aesthetic features, specifically: less visible litter, more green space like gardens and parks, less concrete-covered playgrounds, greater ratings of total local neighborhood attractiveness, less urban decay (Martin & Wood, 2014).

Young people need more natural features in their neighborhood. Lynch (1977), mentioned in his study that children regardless of their countries and locations have the same requirements and connected on their desire for more green areas and trees in the city. Francis (1988), in his study about adults' and children's playground preferences, identified that children desired movable features that change over time and water, and children in their play area require more imaginary and challenging elements, but for their parents traditional play environment were more requested because they were fixed, arranged, and safe. If neighborhoods do not give children opportunities for exploring their environment freely, then they will not have the chances for unstructured and natural play.

In addition, it is a responsibility for all cities, communities, neighborhoods to think through the needs and perspectives of young people and children by the way in which environments are used, designed, planned, and activated; and by providing a school, a park, and a playground. In general, in urban settings the vulnerabilities of

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children are divided into four groups: Limitations on protection systems for young people, to be safe; general restrictions on accessibility of children to urban services; Restrictions on participation of children, to be heard and be recognized; Environmental health limitations (UNICEF, 2019).

2.7 The importance of children's outdoor play

The idea of the 'outdoors' consists of private and public outside spaces, mostly including some natural areas in which individuals can spend times in nature in those urban green spaces which are man-made such as urban parks, and public and domestic gardens; or those natural spaces for example mountain areas, open countryside, coastal areas, forest. In addition, children like all the other citizens must have freedom to meet with others, explore, and play in all areas of their city.

Studies indicate that using the outdoors by children has two main benefits, first for increasing their physical activity and also for their health by contacting nature (Muñoz, 2009). Moreover, children have to spend more time outdoors which is better for their own health and our planet's health. When moving and activities of children are decreased, their bodies will develop in an unhealthy manner, and also children will not ever understand the dependency of humans on the natural world, if they do not grow up connected with nature (Moore, 2014; Palone, 2014).

Unfortunately, many areas that are exactly created for children and young people like playgrounds, do not fulfill the needs and desires of them, or their requirements are in struggle with adults (Kong, 2000), or their needs are not taken into consideration. Also Research has indicated that designing outdoor spaces for children is not only creating and designing formal playgrounds, like the classic playground with old-

designed equipment as slides and swings, designing of those spaces have to be consider children's desires for example instead of those classic equipment, they want to do more adventure and challenging playgrounds. While a great connection between access to formal recreational spaces and green areas with level of physical activity of children have been shown in many studies, designing for outside spaces of children also relates to the actual design of their neighborhoods, towns, and even streets (Handy et al., 2008).

In addition, walking is not just important for physical activity, but is significant to social development of children. It provides chances to meet friends, and to have unplanned meetings in the community with others (Quigg & Freeman, 2008). Children have to walk in their neighborhood freely and without adult supervision because this is the basic right of every child to get around their neighborhood independently. This is very important for children's welfare, development, and wellbeing as it leads to greater levels of sociability, physical activity, mental wellbeing, and connection with their communities (Brown et al., 2019; Stanley et al., 2015).

Moreover, Awareness of neighborhood safety and the social environment can also influence people's activity in their community and neighborhood, and these issues are mainly significant as factors of children's free and independent mobility.

2.7.1 Reduction of children's outdoor activity

A "New type of childhood" has been started to discuss in recent Studies have started to discuss (Karsten, 2005), in which young people or children spend fewer time outdoors than ever before. Kahn Jr and Kellert (2002), for instance, state that children's next generations have increasingly lower opportunities of the amount of

connection with nature that they will have during their lives. In addition, there is discussion in studies relating to kids and their usage of outdoor spaces of a growing reduction in time spent outdoors by children, especially time spent in play independently.

Lester and Russell (2010), in their report has focused on how children in cities face multiple pressures that make play difficult for them. But many of these pressures are not limited to cities; most of them are increased in urban environments. In addition, the experience of children of urban living is far from homogeneous meaning their chances for play or lack chances, sometimes differ across other variables like their disability, gender, socioeconomic class, ethnicity, among others (Kim, 2018).

2.7.1.1 Environmental factors that discouraging play in cities

1. Traffic\ The culture of car supremacy has headed the more traffic on streets and related safety concerns and injury, "driving to destinations" a norm, and decreased active transport (Martin & Wood, 2014). The truth is that the main reason for accidents of children currently are related to traffic, and in the rapidly developing cities, traffic has increased also on those badly maintained roads and streets where children play. While traffic accidents happen more in the poorer areas and with poorer children, it is certain that in cities children are also negatively affected by increasing traffic and it has also influenced their play areas in general (Kim, 2018). In conclusion, this factor also affects parents to be afraid of allowing their children to go outdoors and play or meet friends especially on the street (Grayling, 2002).

2. Loss of Natural and Green Spaces\ Because of designing and increasing residential areas, there is not enough space for children to freely play and meet each other and it reduces the number of children in those areas. Such as streets, green and natural

spaces are other places in which children desire to play. So the cities surrounding areas provide more opportunities for children to play than in inner cities, because they have more green and natural spaces (Whitebread et al., 2012). Sometimes that is because the design of playgrounds in cities that have been carefully designed to guarantee the safety of children, and with using classic equipment that children do not really want, instead of that they want to experience new things and do challenging things. Finally, this factor combined with lack of willingness to allow children go outside to play

3. Environmental Dangers\ another factor that prevent children to play outside is environmental dangers that include perceived dangers and actual dangers. Lester and Russell (2010), in their study mentioned that in many poorer neighborhoods, waste disposal and insufficient sanitation are the main factors to a biological pathogen's high level in water where children play that can lead to fatal illnesses. They also discussed about toxic emissions from the industry, agriculture, and traffic; all are main reasons for parents to not let children play outside in order to protect them from those environmental hazards.

2.7.1.2 Social factors that discouraging play in cities

1. Risk Aversion and Overprotection\ this is one of the main sociocultural factors that influence opportunities of children to play. Parental fear is a main obstacle to independent movement of children in their neighborhoods. Studies have also indicated that parental concern about protection and safety in neighborhoods is considerably related with children being less physically active outside of home and school (Martin & Wood, 2014). In addition, as parents see the outside environment as risky or harmful for several reasons, then they keep their children indoors or they only let them play in pre-designated spaces or places that are identified to be safe like

certain playgrounds and school yards (Veitch et al., 2006). So the reasons for this overprotectiveness can differ from parent to parent or from place to place. But Singer et al. (2009) did a survey in sixteen countries in North America, Europe, South America, Asia, and Africa with mothers; so they found there are some reasons that are common and global, such as fear of violence, traffic accidents, gangs, germs and possible abduction. That they stated as a possible reason for the decline in young people's spontaneous play for the last two decades in those countries (Kim, 2018).

2. Institutionalization and Over-scheduling\ the increasing busyness of parents and families in general; recently children are timetabled into structured activities, homework, and sports which is decreasing their free play time and activities. Risk-averse parenting and overprotection are complemented by growing institutionalization of daily lives of children and intensive arrangement and scheduling. Rasmussen (2004) in his research about daily lives of Danish children indicates that they spend their entire day in three institutionalized locations which are their recreational institutions, schools, and their homes. As he states, these institutions that are designed for children by adults are primarily places for children. But he discusses that 'children's places' have to be made and designed by children themselves because they know what are their needs better than adults and it will have special meaning for them without any supervision by adults. In addition, Institutionalized places for children made have their own organized rules and behaviors that might restrict children's free activity and play (Rasmussen, 2004)

3. Rise of Virtual Media\ Another social factor that has limited the range of children's free activity and play and socializing is the increasing usage of virtual media such as computer games, televisions, phones, and other screens. Fjørtoft

(2001), defined in his research on the influences of outside play of children in pre-primary school, that in the last twenty years, children and young people have become more sedentary than previous children's generation who did traditional games that need lots of movement, but all of this have changed to sitting in front of screens like computers and phones.

2.7.2 Opportunities for children to engage in outdoor activity

Children should be able to have the opportunity to play wherever and whenever they want, and they shouldn't be restricted to play only in parks and playgrounds. Children should also be able to access the public domain (Ward, 1978). Children need to have the chance to develop their ability to exercise control, demonstration of confidence and efficacy, and to improve their self-esteem. However, some different studies argue that the ability and opportunity for children to participate in active free play is restricted or limited (Veitch et al., 2006). It is the responsibility of local planners to insure that children have the chance to be active physically and explore varied, but safe, environments (Thompson et al., 2005).

Having respect for children's play right means that we shouldn't deny or restrict access to play that is understandable in environmental and socio-cultural as well as in physical terms. There are also researches that have reported the potential fears that some parents have regarding the sorts of activities that they undertake in outsides spaces. Sometimes, outside play is associated with interaction with materials such as mud, grass and other flora and fauna. It is shown by Groves and McNish (2008) that this fear of interaction with these materials and danger of outside play becomes an anxiety for some parents. Furthermore, this is shown in the concern some parents have over potential child injury. Fears of parents have been reported to vary

depending on their location. For example, parents in suburban areas have smaller fear than those living in urban areas (Muñoz, 2009).

Differences between genders have been noted regarding parental restriction of children's outdoor use. McMillan et al. (2006), for instance, shows gender differences which children experience when walking to school. It is suggested by Valentine (1997), that male children have less restrictions regarding outside play from their parents. It is also highlighted by research the division of certain gender relating to the methods of using outdoor and public spaces between boys and girls. Differences can be seen in regards to the types of spaces each gender likes and will use as well as the types of facilities they want to see improved.

One of the "real" and safe phenomena is Neighborhood safety. In order to assess how safe people believe they are, or indeed actually are when they are active in their neighborhood, it requires both subjective and objectively measured variables (Kelty et al., 2008). However, research has indicated in addition to parental fear, children also have fear regarding their use of outdoors. Children have reported fears of natural spaces and public spaces and have been shown to relate the word 'safety' with home. Tandy (1999), study on Australian children showed that they preferred to have their play session inside of their homes. O'Brien (2005), research on how woodlands are perceived by children of ages 8-10 years old showed that they are afraid of such spaces. The association of serious criminals such as rapists, pedophiles and murders as well as deviant behavior of teenagers might play a factor in this regard.

Traditional playgrounds faced criticism and scrutiny when new studies and theories turned up showcasing the benefits of play for children's development. The

equipment installed leading to one-dimensional play was one of the strongest criticisms these traditional playgrounds faced. Due to this, they were deemed insufficient for the holistic developmental needs of children. In addition, omnipresent equipment in playgrounds and schools such as swings, seesaws, and slides offer only one form of activity, mainly physical, like sliding, seesawing, and swinging. They are commonly used in ways that don't require the mental challenge, creativity, and flexibility of children (Kim, 2018). Additionally, these playgrounds with traditional equipment do not commonly become places where children participate in symbolic play or pretend play which is considered to be crucial in later psychological theories for the child's emotional, social, and cognitive development. For example, it has been discovered in research that children in creative playgrounds (playgrounds that are designed in a way that aimed to encourage children's creativity) took on actual roles in dramatic play while children in traditional playgrounds only talked about it. It has been found that creative playgrounds showcased significantly higher occurrences of construction and symbolic play while traditional ones primarily hosted organized and physical play (Kim, 2018).

Finally, "we should know that children are not fragile as we think of. They are born with abilities and strengths to deal with difficulty, learn from their mistakes, and develop into skilled and responsible adults. They cannot develop their inner resources unless we give them the opportunities to do so" (Palone, 2014).

2.7.3 The link between outdoor use and health

Children's mental, social, and physical health can be affected by the strong connection between children, the community and the natural environment. Research and studies have proved that green space accessibility for people has a positive effect

on health (R. Mitchell & Popham, 2007). In addition, medical and biological researchers have stated the outdoor activity's health benefits.

According to Muñoz (2009), being outdoors has linked with greater total levels of well-being resulting from conducting the exercise in spaces that enable contact with nature, as well as with positive health benefits from the physical activity. In addition, it has been suggested by Lagerberg (2005), that in children increasing physical activity has to be in the shape of enjoyment, not of forced games, children's need and desire must be focused on in order to ensure well-being of children. There has been notice in a conceptualization of health that connects with not only physical abilities but with mental health and extensive notions of welfare and well-being including social and behavioral health issues and problems (Maller et al., 2005).

Moreover, when children do not have encouragement that comes from a contact physically with their surroundings, then it increases a risk of suffering their emotional, social, and cognitive development. In addition, numerous research have stated that playing outside in nature has positive effects on 'kids' motor ability, concentration, social, and play (Gleeson & Sipe, 2006). Cohen et al. (2008), in their study, for instance, mention a connection between residential closeness to public spaces and parks; and neighborhood social capital that in turn, they propose, is a basis for essential well-being and health.

Obesity and overweighting in children and young people is understood to be related with issues such as a changing diet, on the other hand a lack of movement and physical activity is another issue or factor (Muñoz, 2009). Communities should give children opportunities to fight such negative health problems by spending more time

outside and in nature to increase their physical activity's level, because as it is clear physical activity is linked with the time spent outdoors. Also there is a relation between negative health outcomes and lack of using outdoors.

2.8 Summary

From the literature review, we see how to create cities and communities better places by design and urban planning for young people and children globally. According to UNICEF, Child Friendly City initiative, and Convention on the Rights of the Child, several principles for creating child friendly cities and communities have been defined, which in general are all related to children's health, safety, participation, access to green spaces and basic services, equality, and security. So these are determined as key factors to build a child friendly community or to have a place that is good for children. These principles have to work together successfully because they are all closely linked with each other, so it needs creativity for doing that. Moreover, this review determines the relations between the children's rights which are stated in CRC, and the principles, and also shows the connection between them. In addition, these principles not only make a city friendly for children, but for all citizens and age groups.

This review recognizes the methods that can be used for analyzing and evaluating a community or neighborhood to determine a child-friendliness of that place. It has been mentioned that participation of children in these types of research is the most required to get more effective finding and results. Planning and design for children are not enough to create a child friendly community, however planning and design with children is also needed. The review emphasized the view and opinions of children as participants, and suggested that children must be central in the process of

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research. In addition, drawing can be the most powerful method to know about children's opinions and requirements, because drawing is easier for children to express whatever in their mind than expressing them by words.

This literature review also explains how neighborhood can affect children physically, socially and mentally. Also the importance of children's outdoor activity is explained as well, which directly affects their health and well-being. In addition, accessibility of parks or green areas and playgrounds encourages them to be more active and healthy.

Chapter 3

METHODOLOGY AND IMPLEMENTATION

3.1 Introduction to the chapter

This chapter is giving an explanation about the case study which is a neighborhood in Sulaymaniyah City in northern Iraq. The applied methodology for this study has been written in this chapter consists of both qualitative and quantitative methods to analyze and evaluate the case study. Data collection tools have been determined and explained, which are measurements with observation, documentation, interview, and cognitive map. Then, evaluation of the case study with the twelve principles of Child Friendly City has been written in the fourth part, on the bases of collected data. The results and findings are also defined in the last part.

3.2 Information about research location

Northern-Iraq is a semi-autonomous region in the Republic of Iraq, which is defined as a source of development and peace in the Middle East. It is surrounded by four neighboring countries Iran in the North-West, Syria in the North-East, and Turkey in the South-East. Northern-Iraq consists of three governorates Sulaymaniyah, Erbil, and Duhok (Figure 3.1). The case study of this thesis is in Sulaymaniyah governorate, which consists of numbers of districts and its capital and largest city is Sulaymaniyah.

Figure 3.1: Map of Iraq (Global Security Organization, n.d.)

Sulaymaniyah is a city in Northern Iraq; it is located in the South part of Northern Iraq, from West it is bordered by Iran (Figure 3.2). In 1784, Ibrahim Pasha who was Babanese prince built the city, which is described as a cultural capital of Northern Iraq. It is 830 m above sea level with the 13368 km^2 area.

Figure 3.2: Map of Northern-Iraq (International Organization for Migration, 2018)

Figure 3.3: Sulaymaniyah in 1924 (Altaee & Al-Ani, 2020).

The major ethnic group in the Northern-Iraq and Sulaymaniyah is Kurds which are the world's largest one without having a state of their own. Kurdish is their first language and their main religion is Islam. Christians and Jews are the other various ethnicities in the city.

According to the last census of population in 1987 of Iraq, the number of population of Iraq was 16,335,000 that 2,015,466 0f them were in Northern-Iraq. After that in 2014 the population of Iraq has been estimated to 36,004,552 of which 5,122,747 in Northern-Iraq.

The population of Sulaymaniyah governorate is slightly more than two million in 2014 (International Organization for Migration, 2018) (Figure 3-4). Annual growth population rate by governorate, according to the figures released by Kurdistan

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Region Statistics Office (KRSO), was 3.1% in Sulaymaniyah, and with an overall annual growth rate of 3% of Northern-Iraq.

According to the Sulaymaniyah Official Statistics office, the population of Sulaymaniyah city is 745, 687 in 2018.
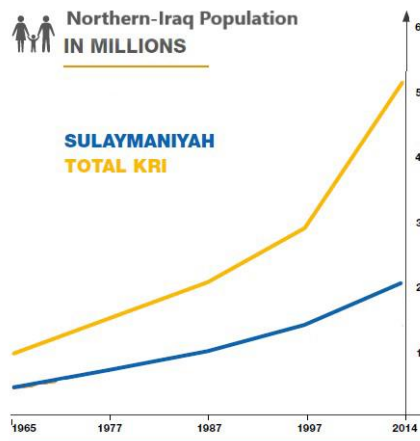
Figure 3.4: 1965-2014 CENSUS AND ESTIMATES (International Organization for Migration, 2018)

The Northern region's population in 2017 pyramid is of the expansive type, with a triangular shape and a wide base, typical of a developing nation with a huge share of young population (Figure 3-4). Pyramid of Sulaymaniyah governorate showing a somewhat larger and stable base and hollows in correspondence of the 55–59 group (Figure 3-5). According to the graph, in Sulaymaniyah there is a high number of children and young people aged between 0 to 20 years.
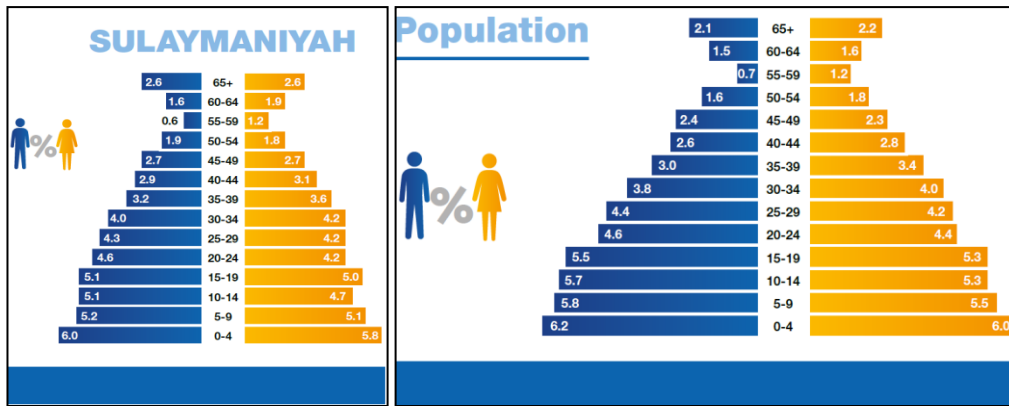
Figure 3.5: Population pyramid of Northern-Iraq and Sulaymaniyah governorate (International Organization for Migration, 2018)

The average household size is 5.1 persons per household in the region of Northern-Iraq, and the average household size in Sulaymaniyah governorate is 4.6. Also in Sulaymaniyah city it is between 4.25 - 4.46. The size of households tends to increase with income and decrease with the HoH's level of education (Figure 3-6).
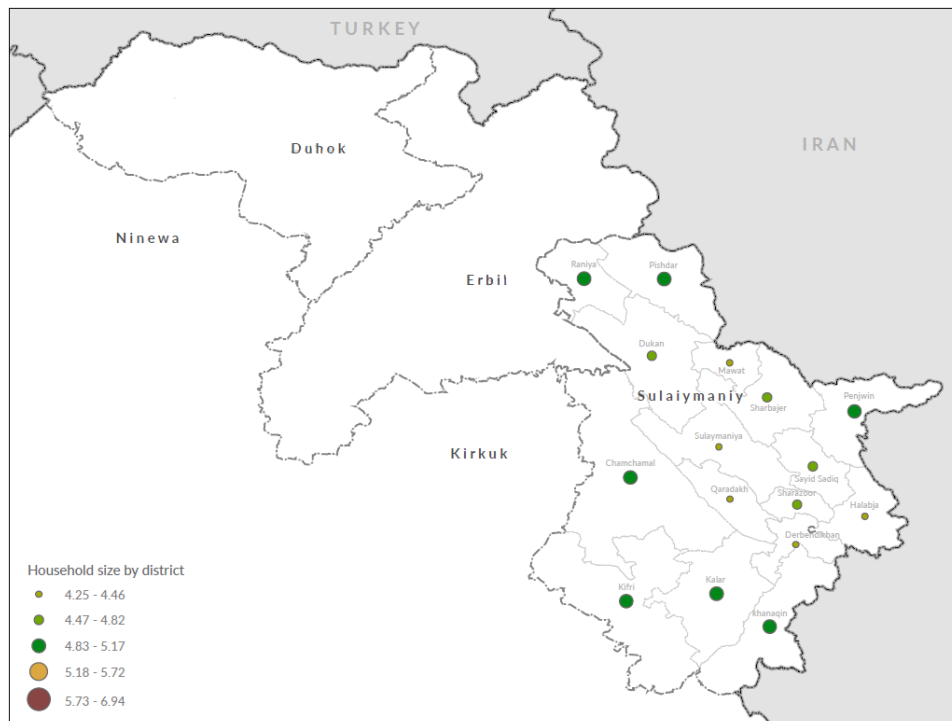
Figure 3.6: Average household size in Sulaymaniyah governorate 2017 (International Organization for Migration, 2018)

About the climate of Sulaymaniyah city it has a typical climate with dry and hot summers and cold winters. In comparison with surrounding cities and areas, Sulaymaniyah is wetter in winter and cooler in summer, and about rainfall it is limited to the winter and autumn months.

Figure 3.7: Sulaymaniyah city in summer and winter days (Naqishbandy, 2016b), (Naqishbandy, 2016a)

3.2.1 Neighborhoods in Sulaymaniyah city

We can define a neighborhood as a city's geographically localized community. Neighborhoods are sometimes social community and areas with great face to face contact between members. Neighborhoods for children are those environments that define their social and physical worlds. As it has been stated in (Oulmane-Bendani, 2013), the space and environment in which a child lives is directly related to their personal development, and it becomes a basis and a condition of their development.

The advantage of defining a neighborhood is when it lets the people apply for support from the city's government for several projects to locally develop the urban environment. So In Sulaymaniyah city there are more than 70 neighborhoods inside the city.
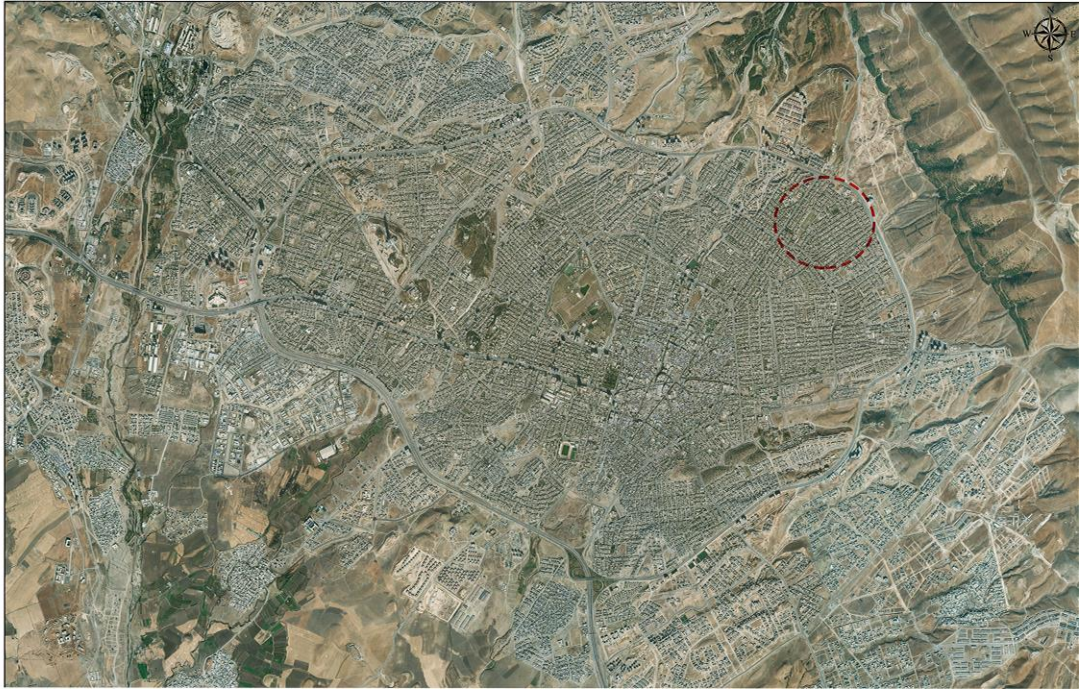
Figure 3.8: Satellite image of Sulaymaniyah city and the case study neighborhood in the circle (Municipality of Sulaymaniyah)

In order to define how to evaluate child friendliness in a community at local level, a neighborhood in Sulaymaniyah city was selected as a case study, which is the Hewareberize neighborhood, located in the North-East of the city. This selection is according to several reasons:

- Lack of recreational areas or places in the neighborhood.

- Limited opportunity for children to meet their friends and play together.

- A great number of children that play on the unsafe and risky streets for children.

- It is a middle or upper-middle income neighborhood. So the high income neighborhoods are not selected for this study because of their possibility to have all facilities and characteristics for children's welfare, as well as low income neighborhoods which are not adequate for children at all, in the city.

Figure 3.9: Hewareberize neighborhood that is selected as case study

3.2.2 Hewareberize neighborhood

As it has been discussed above, Hewareberize Neighborhood has been selected in this thesis as a case study because of some factors that affected the lives of children in the neighborhoods, they do not have enough place to meet and play with their friends, and they play on the unsafe streets. The absence of recreational areas and income level of the neighborhood have also affected the selection.

The Hewareberize Neighborhood was built in the 1970s, and located in the north-east of the city; its area is 0.68 km^2 or 0.26 square mile, which is an acceptable area for this study. It is surrounded by four main roads. According to the neighborhood's mayor or (mukhtar) during a personal communication, the population of the

neighborhood is 18209, and it includes 6424 households with a high number of children.

Figure 3.10: Hewareberize neighborhood map

In general, the entire city has low crime rates compared to the other cities and countries. The neighborhood also has very low crime rates, and it is safe in that way. Mainly in the city there are no block watch programs in the neighborhoods, but some households use virtual block watches like security cameras for their own safety. So it is the same in the Hewareberize neighborhood.

The neighborhood does not have enough green area. In the neighborhood, there are four public parks, which are: The Middle Park, Hewareberize Park, Tuwîmelîk Park,

and Fereydûn Park. The last two include playgrounds for children. So an opportunity for children to play is very limited. Three schools are also in the neighborhood: Pêşkewtin and Hewareberize primary school, and Dlldar high school.

3.3 Method of analysis

As it has been discussed before, the aim of this study is to analyze and evaluate Hewareberize neighborhood in Northern-Iraq and the methods and tools that have been used in this study can be applied to analyze and evaluate most of the neighborhoods in the world. Also planners and designers can use these methods and tools to discover the needs and requirements of children in a neighborhood, and to know the weak points of a neighborhood or community and change them to make a better environment for children and all.

According to UNICEF children are those who are under 18 years old, but in this study children between 6 to 12 years old have been focused on. The reason behind deciding this age range is that children in this age group start to be active in outdoor spaces and play there and it is a beginning of their activities and curiosities to explore new things and their surroundings (Chawla, 1992). In addition, the theory of Piaget defined this age group as 'Concrete Operational Stage' (Pulaski, 1971), which is the time of middle childhood and in this stage of development children become more sophisticated and logical in the way they think. This study is also limited to a neighborhood in Sulaymaniyah city in Northern-Iraq, which is Hewareberize.

In this research the method of triangulation is used in which multiple methods or data sources are used in a qualitative and mixed research to develop a comprehensive

understanding of the case study and whether it fulfills the requirement of child friendly city (Patton, 1999).

The methods of analysis in this study are both qualitative and quantitative and it is divided into four different methods and tools, which their results are used to evaluate each principle of Child Friendly Cities in the Hewareberize neighborhood. As it has been mentioned, Child Friendly Cities have twelve principles, for evaluating each of these principles two or more different methods have been used, in order to obtain assure and certain results, and also to evaluate the principles in many different perspectives. Those methods are: Cognitive map, observation, physical analysis and documentation which consist of five dimensions (Table 3-1): "Health and social services; Educational resources; Safety, protection and mobility; Access to play and recreation; Community life"(Rakhimova, 2011, p. 5). Also Interview that consists of nine questions (see table 3-1):

1. Have you lived in Hewareberize neighborhood your whole life?

2. Are you allowed to go to your favorite places alone or with your friends?

3. Where do you usually meet your friends and play with them in your neighborhood?

4. Are you scared of walking outside alone in your neighborhood?

5. Are there any difficulties in your neighborhood regarding your safety?

6. Do you participate in any decision processes when a park/playground construct in your neighborhood or before changing something in your school?

7. Are there developed play areas and parks for you in your neighborhood?

8. Do you usually celebrate national and religional events with your neighbors?

9. Does your family usually ask your opinion about decisions that directly affect you or related to you?

Table 3.1: Table of methodology

Child Friendly Cities principles (Key words)	Methodology			
	Physical analysis and documentation	Interview	Cognitive map	Observation
1. Participation of children in decision making about their city. (Decision making)		✓ **Question 6:** Do you participate in any decision processes when a park/playground construct in your neighborhood or before changing something in your school?		✔
2. Children should be free to indicate their opinion about their city. (Expression of opinion)		✓ **Question 9:** Do your family usually ask your opinion about a decision that directly affect you or related to you?		✔
3. Participation in community, social life and family. (Participation in community)		✓ **Question 2:** Are you allowed to go to your favorite places alone or with your friends? ✓ **Question 8:** Do you usually celebrate national and religional events with your neighbors?	✔	
4. Children should be given essential services as education, shelter, and health care. (Getting essential services)	✓ **1. Health and social services:** • Distance to urgent care. **2. Educational resources:** • Distance to additional educational services. • Distance to middle school. • Distance to child day care services. • Distance to primary school.		✔	
5. Having safe water for drinking. (Getting safe water)				✔
6. Being secured from violence, abuse, and exploitation. (Security)	✓ **3. Safety, protection and mobility:** • Overall crime rate. • Block watch program. • Child related crime rate. • Distance to bus stop.	✓ **Question 2:** Are you allowed to go to your favorite places alone or with your friends? ✓ **Question 4:** Are you scared of walking outside alone in your neighborhood? ✓ **Question 5:** Are there any difficulties in your neighborhood regarding your safety?		✔
7. Walking in the streets on their own safely. (Safety)	✓ **3. Safety, protection and mobility:** • Incidence of traffic accidents. • Street speed limit. • Presence of bicycle lanes. • Distance to bus stop.	✓ **Question 2:** Are you allowed to go to your favorite places alone or with your friends? ✓ **Question 4:** Are you scared of walking outside alone in your neighborhood? ✓ **Question 5:** Are there any difficulties in your neighborhood regarding your safety?	✔	✔
8. Having a meeting with friends and play together. (Meeting with friends)	✓ **4. Access to play and recreation:** • Distance to big parks with recreational trails, rivers and lakes • Distance to playgrounds. • Distance to sport facilities. • Distance to parks. • Distance to public swimming pools. • Distance to community/recreation centers.	✓ **Question 2:** Are you allowed to go to your favorite places alone or with your friends? ✓ **Question 3:** Where do you usually meet your friends and play with them in your neighborhood?	✔	✔
9. Having green spaces for animals and plants. (Having green spaces)	✓ **4. Access to play and recreation:** • Distance to playgrounds. • Distance to parks. • Distance to big parks with recreational trails, rivers and lakes.	✓ **Question 7:** Are there developed play areas and parks for you in your neighborhood?	✔	
10. Living in a clean environment.				✔
11. Joining social and cultural events		✓ **Question 8:** Do you usually celebrate national and religional events with your neighbors?		
12. Accessing to all services and be equal, regardless of their religion, gender, income, ethnic origin and disability. (Equality)	✓ **5. Community life:** • Race diversity. • Presence of educated people. • Age diversity.			✔

3.3.1 Physical analysis and documentation

This is the first method that has been used in this study. it is depended on the assessment that submitted by CERG, UNICEF, and Bernard van Leer Foundation (Giusti et al., 2010), and it has been made compatible with the International Convention of the rights of the child. It has been used in another study (Rakhimova, 2011) to evaluate three different neighborhoods.

This tool consists of six essential "dimensions: home environment, health and social services, educational resources, safety, protection and mobility, play and recreation, and community life"(Rakhimova, 2011, p. 5). In order to achieve the aims of this study, these dimensions have been used except the first one "Home environment", because this study has focused more on the outdoor environments of children.

These five dimensions have their own value individually and have an equal weight that is 4 points for each; so in this study each of the dimensions has been used for analyzing and evaluating only one or two are related principles individually.

Additionally, all of the dimensions can work together and they can be summed and give a final score to measure and characterize the child friendliness of the neighborhood with a maximum 20 points. For example:

- (15 – 20) The neighborhood is child-friendly
- (9 – 14) The neighborhood is somewhat child-friendly
- (3 – 8) The neighborhood is not child-friendly
- (≤ 3) The neighborhood is not suitable for children

Also, as it has been shown in (Table 3-1), in this study each of these dimensions has been used to evaluate one or two principles of Child Friendly Cities that are related to it.

Moreover, each dimension consists of numbers of indicators that are significant for tracking and benchmarking processes in urban planning. All indicators are divided into several groups on the base of the scoring method, which are: diversity, distance, presence, percentage, and ratio indicators (Table 3-2). Although the number of indicators in the dimensions is not equal, the final score of each dimension is equal.

Indicators group

1. Distance indicators:

This group is about measuring the distance from households to important features in the neighborhood. It is based on accessibility to those places/spaces that have influence on child-friendliness of the neighborhood. These distances should be measured from each household to those areas, but because of the large area of the neighborhood in this study, it was difficult to do the measurement in that way. So the houses are grouped into 22 groups of houses. Each group is surrounded by circles and the distance was measured from the centroid of each circle to the designated locations, and then average distance value was calculated. Also, a circle with a radius of 0.8 km (0.5 mile) was established surrounding the neighborhood to select close points of interest. Finally, if there were more than one points of interest for the same indicator, the average distance was calculated.

Scoring method for the distance indicators is based on the walkability of distances for children; it means more walkable distance has got more points. According to Walker (2012), Yang and Diez-Roux (2012), and Rakhimova (2011), a walkable

distance for adults is 400 meters (0.25 mile). On the other hand according to Fasli et al. (2016), walkable distance for adults is 800 meters. So in this study, distances more than 800 meters are defined as unacceptable walking distances for children (Figure 3-11). So accordingly, different scores have been determined:
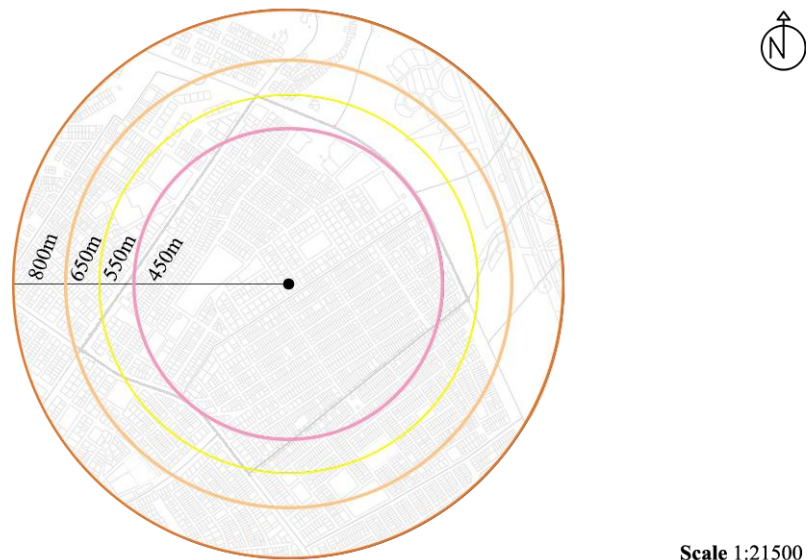
Figure 3.11: The method of determining scores for distances

- o 0 – 450 m: 4 points

- o 451 – 550 m: 3 points

- o 551 – 650 m: 2 points

- o 650 – 800 m: 1 points

- o No objects within a distance of 800 m: 0 points

For doing these measurements the map of Sulaymaniyah city which is provided by the municipality of Sulaymaniyah has been used by using AutoCAD software.

2. Diversity indicators:

For this group the Simpson diversity index has been used on the bases of the study by Rakhimova (2011), which is a mathematical measure of species diversity in a community. In this study, it has been used for measuring race and age diversity in the neighborhood. It has been done by the following formula: $D = 1 - \left(\frac{\sum n(n-1)}{N(N-1)} \right)$

The value of (n) which is the number of individuals in a specific group, and the value of (N) which is the number of individuals in all groups, are based on the data by the neighborhood's mayor or (mukhtar) during a personal communication in 2020. The (D) value is ranges from 0 to 1, so getting higher results means having a more diverse neighborhood. On the basis on Rakhimova (2011), the scores have been defined as:

- o   1 – 0.8: 4 points
- o   0.8 – 0.6: 3 points
- o   0.6 –0.4: 2 points
- o   0.4 – 0.2: 1 points
- o   Less than 0.2: 0 points

3. Presence indicator:

In this study, this scoring method has been only used for block watch programs in the neighborhood. So by the presence of the activity in the neighborhood, it gets 4 points. But by absence of the activity it gets 0 points. So these are the only possible scores.

4. Percentage indicators:

In this study, the percentage scoring method is used for two indicators, first for street speed limits, which is about finding the percentage of those roads that have less than 25 mph speed limits by measuring the length of them; second, for the presence of bike lanes, which is based on measuring the length of bike lanes and finding its percentage in the neighborhood. Bases on Rakhimova (2011), the scoring for this group is as follows:

- o 100 – 90% : 4 points
- o 89 – 70% : 3 points
- o 69 – 50% : 2 points
- o 59 – 20% : 1 points
- o Less than 20% : 0 points

5. Ratio indicators:

This ratio method has been used through the calculating of location quotients, which is an analytical statistic that is frequently used in demography, economics and any type of location analysis. It measures an activity in a specific community or neighborhood relative to a larger geographic unit.

The formula of location quotient is: $LQCi = \dfrac{E_{ij}/E_i}{\sum E_{ij}/\sum E_i}$

In this study Ei j is the number of the activity in the neighborhood, and Ei is the number of population in the neighborhood. ∑Ei j is number of the activity in the whole city, and ∑Ei is number of population in the whole city.

The ratios of four indicators have been found by this equation: presence of educated people, overall crime rate, incidence of traffic accidents, and child-related crime rate.

For finding the ratio of educated people in the neighborhood, it was needed to know the numbers of educated people in the neighborhood and compare it with the number of educated people in the overall city. So these data have been provided from the Sulaymaniyah region statistics office and the mayor of the neighborhood by personal interview which are about the information of educated people in 2020. Bases on Rakhimova (2011), for this indicator the points has been selected in the following way, higher location quotient value has got more points:

- o LQ more than 1: 4 points

- o LQ 0.75 – 1: 3 points

- o LQ 0.5 – 0.75: 2 points

- o LQ 0.25 – 0.5: 1 points

- o LQ less than 0.25: 0 points

For incidence of traffic accidents, the data have been provided from the annual reports of traffic accidents of Sulaymaniyah city in the first six months of 2020 from January to June (Kurdistan region statistics office, 2020). In addition, the data about the neighborhood's number of traffic accidents in 2020 for these six months have been provided from Sulaymaniyah Traffic office.

For child related crime rate and overall crime rate, they have been calculated in the same way that it is mentioned above, the data of overall and child related crime rate of first six months of 2020 in Sulaymaniyah city have been provided by Sulaymaniyah police station, and the data about the neighborhood have been provided from Hewareberize neighborhood's police station. The scoring for these three indicators is like that:

o   LQ 0 – 0.5: 4 points

o   LQ 0.5 – 1: 3 points

o   LQ 1: 2 points

o   LQ 1 – 1.5: 1 points

o   LQ more than 1.5: 0 points

Table 3.2: Dimensions of the method and their indicators

Dimensions	Indicators	Indicators group
Health and social services	Distance to urgent care	Distance indicators
Educational resources	Distance to primary school.	
	Distance to middle school.	
	Distance to child day care services.	
	Distance to additional educational services.	
Safety, protection and mobility	Overall crime rate.	Ratio indicators
	Child related crime rate.	
	Incidence of traffic accidents.	
	Street speed limit.	Percentage indicators
	Block watch program.	Presence indicator
	Distance to bus stop.	Distance indicators
	Presence of bicycle lanes.	Percentage indicators
Access to play and recreation	Distance to parks.	Distance indicators
	Distance to playgrounds.	
	Distance to sport facilities.	
	Distance to public swimming pools.	
	Distance to community/recreation centers.	
	Distance to big parks with recreational trails, rivers and lakes.	
Community life	Race diversity.	Diversity indicators
	Age diversity.	
	Presence of educated people.	Ratio indicators

As it has been mentioned before, this method is depended on the assessment that submitted by CERG, UNICEF, and Bernard van Leer Foundation. On the bases of the assessment only five dimensions and their indicators which are related to this study have been chosen: Health and social services, educational resources, safety, protection and mobility, access to play and recreation, access to play and recreation, and community life.

3.3.1.1 Health and social services

In general this dimension includes mental and physical health of children, but this study is only focused on physical health. This dimension is also concentrated on the urban environment's factors that have affected the development of children. The right of humans to health care means that clinics, doctor's services, hospitals, and medication have to be available, accessible, on equitable basis, and acceptable and of good quality for everyone (UNICEF, 2019). One of the main keys of a child friendly community is having health and urgent care centers in a walkable and close distance for children in every neighborhood.

3.3.1.2 Educational resources

Educational resource is one of the dimensions of child-friendliness of a community. It is an essential right of children to have a place to learn in a formal setting in an accessible place. These resources can be divided into child day care services, primary school, secondary school, and additional educational resources like a library. It is important to have a specific place for children to learn in a close distance to every family with children. In this dimension the distance between households and all of these educational resources in the neighborhood and surrounding have been measured to find out the adequacy of educational setting for their children in the area.

3.3.1.3 Safety, protection and mobility

This is another significant dimension that can affect a community to be more or less child friendly. In communities children's safety and protection are one of the main concerns, and children's movements and mobility are directly linked to them; because lack of safety and protection in any neighborhood or community restrict children to stay at home most of the time. For instance, the risk of violence from other children or adults and exposure to other criminal acts may put children at danger when going out of their home or moving around their neighborhood. Also streets and roads should be safe for children to walk on without any risk, and public transports have to be accessible for children and their parents in child friendly neighborhoods. So the indicators of this dimension are calculating the rate of overall crime, the rate of child related crime, traffic accidents rates, street speed limit; also measuring the distance to bus stops; and the presence of block watch program and bicycle lanes in the neighborhood.

3.3.1.4 Access to play and recreation

It is important for children to have an opportunity to play and do activities, and in the neighborhoods this right be provided for every child to play in an accessible and adequate place; because children improve their mental, social, and physical skills through their playful contact with their world and play is usually considered as being supremely significant for children. This dimension has numbers of indicators as distances to parks and other recreational areas (see table 3-2).

3.3.1.5 Community life

Children have a right to participate in community and social life. So a social environment can directly affect the lives of children and it can define the behavior of every child. It is important for children to socialize; learn from adults about how they

behave and also from other children; and contact with people from different ages, nationalities, gender, and ethnic background to learn new things from them. So diversity and equality can make neighborhoods and communities to be more children friendly. Also having more educated people in the community has its own importance to teach and educate children in a better way. Age diversity, race diversity, and presence of educated people are the three indicators of this dimension.

3.3.2 Interview

As it has been mentioned in the literature review, participation of children is very important in these types of study, and also the main keys of child friendly cities are allowing children to participate in projects about their city and also giving them opportunities to express their opinion freely. Children can have valuable and creative ideas and thoughts about their neighborhoods. They are the ones who know about their needs and requirements the best. It is also important to improve the sense of community in children by letting them feel as a member of the community.

In this study the main attention is on the participation of children by asking them about their opinions and experiences about their neighborhood, also asking them some simple questions to know and understand their living condition.

According to the literature review qualitative research's sample should be small to maintain the depth of case oriented analysis. Also the sample size will be adequate in a range between 20 to 30 interviews depending on the sample size guidelines. Moreover, the participants that are involved in this study are 20 children from a range of ages between 6–12 years.

It is clear that choosing an appropriate way to listen to children is so important, also the way we use to ask them our questions is important too. In this study the questions have been written in a simple and understandable way for children. Especially for that range of age 6-12 years, some of them cannot read well, that is why images to represent the questions have been used for each of them. Also it has been tried to use colorful paper to attract the children and motivate them to answer the questions.

forty six households have been chosen randomly in the neighborhood to ask them to participate in the study, some of them did not have any children in that age range, twenty four parents agreed about their children's participation but children of four of these households refused and did not want to involve in the study, and the other households did not agree at all. Then only twenty children have participated in the study. Finally they have been divided into several groups, and a public park has been selected to meet the group there and do the interview.

Before the interview, a consent form has been obtained for their parents, they have been asked to sign the form before participation of their children. Also children have been given a consent form with colorful images to ask for their agreements to participate in the study and to inform them that they can refuse it and\or withdraw from the study any time.

First of all, the children have been informed that there are no right or wrong answers, feel free to say whatever you want because no one gets to know about them. This is beneficial to see the problems and needs of the neighborhood from the eyes of the children and to realize what they really want and those they do not want.

3.3.3 Cognitive map

Cognitive map can be defined as a mental representation of one's physical environment. It is a tool for collecting data about children by asking them to draw their neighborhood and improve it in the way they want. According to the literature drawings of children provide a 'window' into their views and feelings, mostly because they reflect a copy of their own minds. By children's drawings, we can understand their relationship with their environment and others. That is why it has been used in this study to find out the view of the children about their neighborhood, and their desires and requirements.

According to the literature review, one of the main techniques to collect social information about and from children is drawing. Drawings can be used as a powerful tool for the evaluation purposes, because most of the children are able to draw without being stressful, and also many children do not like to answer questions, so using drawing tests will be easy, completed, enjoyable and quick. Also by children's drawings, you can understand their relationship with their environment and others, and drawings certainly tell of the inner self, existence, and thoughts of the drawer.

In the method of cognitive map, participants have been asked to draw a map of their neighborhood in two papers with two different versions. First paper was used for drawing the existing version of their neighborhood; second paper was used for drawing an improved version of their neighborhood by adding, removing, and changing whatever they want. In their first drawing we can understand their view and feelings about their own neighborhood. By the second drawing we can find out their requirements and desires. By comparing both of them together we can realize many

other important points. Also they have been asked to draw a red circle around their favorite place/space.

The drawings have been done on the same day as the interview and by the same participants. Also the consent forms that have been mentioned above were prepared for both the interview and cognitive map. Papers, pencil, and color pencils have been given to all the participants to use them for the drawings.

The drawings have been analyzed through a framework by comparing the two versions (existed and improved) of their drawings. The framework consists of the groups of objects that include in their drawings, they are: (Vegetation, water body and topography, climate, buildings, recreational areas, and others). Each of these object groups are divided into several parts.

3.3.4 Observation

In this study the observation is divided into two parts: one of them is the observation that based on something that has been heard, or noticed. It has been used for four of the principles (Principle 1: participation of children in decision making about their city, Principle 2: Children should be free to indicate their opinion about their city, Principle 5: having safe water for drinking, and Principle 10: living in a clean environment), it is observed by the Researcher.

The other part is direct observation, by observing children in the public and open spaces in the neighborhood in order to get information about children's activities and their requirements outdoors. To get more accurate results, it is required to directly observe the activities and behaviors of children. In this study the observation has been done to analyze and evaluate three other principles (Principle 6: Being secured

from violence, abuse, and exploitation; Principle 7: walking in the streets on their own safely; Principle 8: having a meeting with friends and play together; and Principle 12: accessing to all services and be equal, regardless of their religion, gender, income, ethnic origin and disability).

In this study, for the observation all of the public and open spaces in the neighborhood have been selected, because they are the most usable areas for children to play, meet their friends, and do activities. The local streets of the neighborhood as spaces for play and leisure have been also selected.

In the Hewareberize Neighborhood, there are four public parks; two of them include playgrounds for children. For doing the observation in the streets, they have been divided into two parts in order to do it in a more accurate way, because the neighborhood has a large area with many local streets (Figure 3-12).

The observation has been done for one month from 22 August until 17 September, every day in two different times with duration of two hours. The times were (9-11 am) and (4-6 pm) because these are the only times in the day that most of the children go out and play. So for each of the locations, observation has been done four times a week, two times a day (Table 3-3).

Table 3.3 Observation timeline (For a month)

Location	Days of the week	Time	
Hewareberize Park	Sunday	9-11 am	4-6 pm
Tuwîmelîk Park and Playground	Monday	9-11 am	4-6 pm
Fereydûn Park and Playground	Thursday	9-11 am	4-6 pm
The middle Park	Saturday	9-11 am	4-6 pm
Local street-Part A	Wednesday	9-11 am	4-6 pm
Local street-Part B	Tuesday	9-11 am	4-6 pm

Figure 3.12: Chosen settings for the observation

3.4 Implementation of the methodology

As it has been mentioned before, a child friendliness of Hewareberize neighborhood has been measured through its fulfillment of the principles of Child Friendly Cities. For analyzing each of these principles in the neighborhood, four different methods have been used. This section describes the findings for each of the methods.

3.4.1 Physical analysis and documentation

This is about calculating and measuring the whole 21 indicators for the case study neighborhood, which are grouped into five dimensions (see table 3-2). In this study each of these dimensions has been used for evaluating one or two principles of Child Friendly Cities (see table 3-1).

Most of the indicators in these dimensions require distance measurement and they are in the group of distance indicators which it has been explained above.

In (Figure 3-13) it has been shown an example of the distance measurements in the neighborhood from the centroid of each group of households to the points of interest.
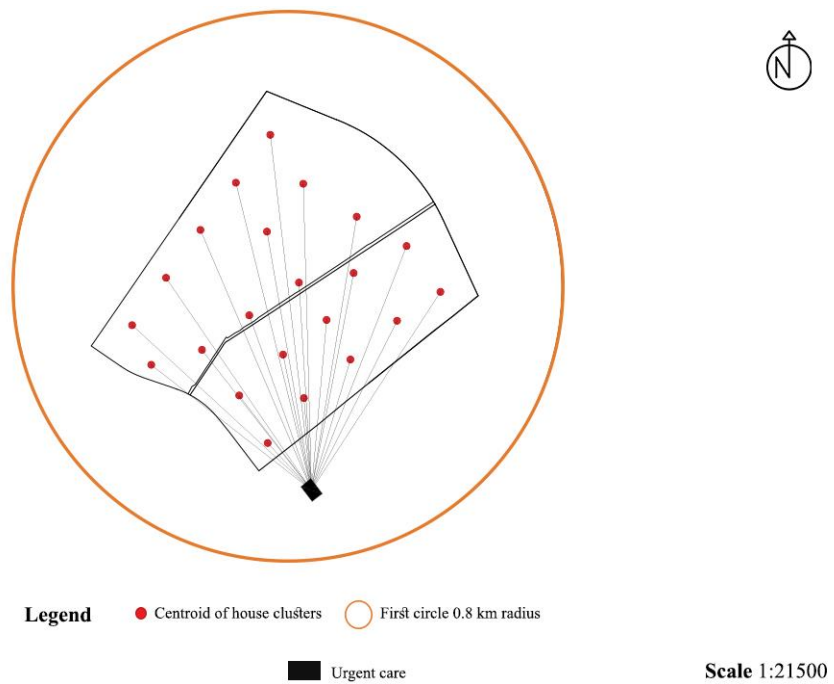
Figure 3.13: Distance measurement example

(Figure 3-14) shows all of the points of interests or the location of the indicators which have been measured in this study.
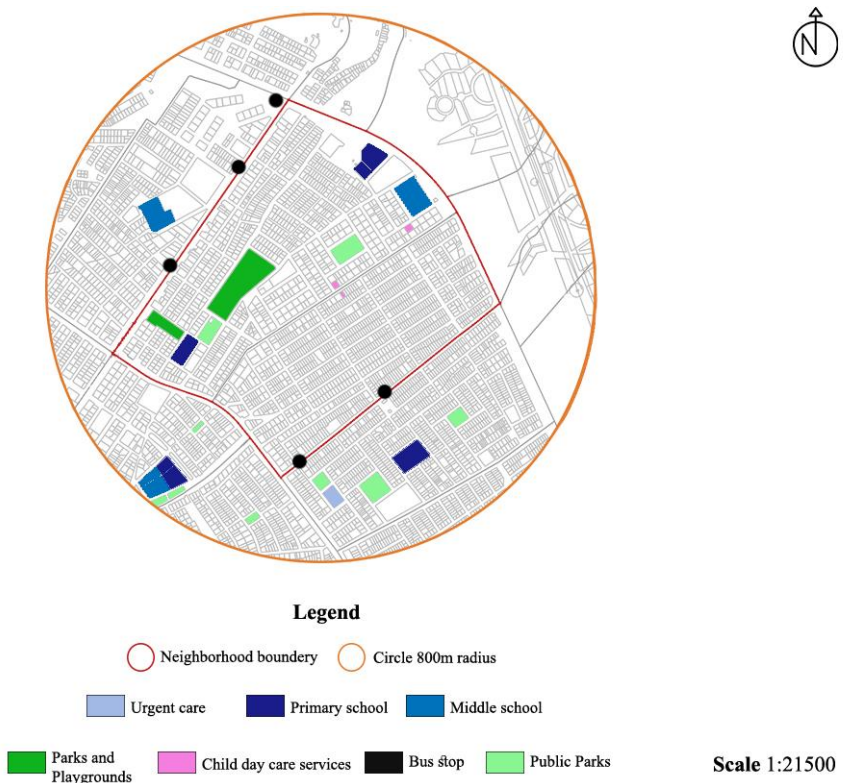
Figure 3.14: Distance of neighborhood areas that have been measured in each dimension

3.4.1.1 Health and social services

This dimension indicates that health centers and social services should be accessible for children. It has only one indicator, which is measuring distance to urgent care. For households living in the Hewareberize neighborhood there is only one urgent care outside the neighborhood boundary (see figure 3-14) with an average distance 632.5 meter from the centroid of the clusters of houses.

Table 3.4: Health and social services

(Indicators) Designated location	Distances to households (Neighborhood boundary)	Distances to households (Circle radius: 800m)	Average distance in meter	Points
Urgent care	-	632.5	632.5	2

3.4.1.2 Educational resources

This dimension has four indicators (see table 3-5). Inside the neighborhood boundary there are two primary schools and one middle school, outside the neighborhood boundary and within 800 meters distance there are two primary and two middle schools. Also about the child day care centers and additional educational services as libraries, there are three child day care centers inside the neighborhood and without any libraries as additional educational service within 800 meters distance (see figure 3-14).

Table 3.5: Educational resources

(Indicators) Designated locations	Distances to Households (Neighborhood boundary)		Distances to households (Circle radius: 800m)		Average distance (m)	Points
Primary school	448.77	534.06	616.23	679.5	569.64	2
Middle school	515.99		562.79	730.40	603.06	2
Child day care services	326.7	329.4	459.5	-		371.86	4
Additio-nal educati-onal services	-		-		-	0

3.4.1.3 Safety, protection and mobility

This dimension has seven indicators, as it has been mentioned before safety and mobility are the main principles of the child friendly cities. Children should be safe and protective in their community. They should walk through their neighborhood

safely and meet their friends without any risk. Also in child friendly cities children streets and roads should be safe for children.

Overall crime rate and child related crime rate, which the data have been provided from Sulaymaniyah police station, and the data about the neighborhood have been provided from Hewareberize neighborhood's police station of the first six months of 2020 in Sulaymaniyah city. Incidence of traffic accidents the data have been provided from the annual reports of traffic accidents of Sulaymaniyah city in the first six months of 2020 from January to June (Kurdistan region statistics office, 2020). In addition, the data about the neighborhood's number of traffic accidents in 2020 for these six months have been provided from Sulaymaniyah Traffic office.

Table 3.6: Overall and child related crime rate, and Incidence of traffic accidents

(Indicators)	Total numbers in the neighborhood (six months)	Total numbers in the city (six months)	LQ	Points
Overall crime rate	3	4,323	0.0287	4
Child related crime rate	0	24	0	4
Incidence of traffic accidents	14	803	0.714	3

For street speed limits, the percentage of the roads in the neighborhood has been calculated with less than 40 km/hour which is suitable and safe for children. The calculation of the road lengths is based on Sulaymaniyah map by AutoCAD files.

Table 3.7: Street speed limit

(Indicators)	Total length of the streets, km	Length of the street with speed limit 40 km/h or less	Percentage	Points
Street speed limit	18,241	13,507	74	3

About the presence of the bike lanes, in the neighborhood and the city in general there are no particular lanes for bikes and they are not segregated from other lanes. So this indicator has got zero points because of the absence of bike lanes in the neighborhood.

Also the block watch program indicator, is about if the neighborhood has block watch programs or not, which make the community to be more child friendly. The neighborhood has no block watch program in general, so have got zero points for this indicator.

Another indicator is measuring the distances from the households to the bus stops in the neighborhood and then the average of them has been taken. For the households in the neighborhood there are 5 bus stops (see figure 3-14), which their average distance is 527 meters.

Table 3.8: Distance to bus stop

(Indicators) Designated location	Distances to households (Neighborhood boundary)		Distances to households (Circle radius: 800m)	Average distance in meter	Points
Bus stops	530.2	481	638.4	527	3
	478.7	506			

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3.4.1.4 Access to play and recreation

This dimension consists of 6 indicators; all of them are about the measurement of distances between the households in the neighborhood and the recreational locations as parks, playgrounds, sport facilities, public swimming pools, community recreation centers, and big parks with recreational trails, rivers and lakes. All of the measurements are based on the AutoCAD files provided by Sulaymaniyah municipality.

Table 3.9: Play and recreational locations

(Indicators) Designated location	Distances to households (Neighborhood boundary)		Distances to households (Circle radius: 800m)			Average distance in meter	Points
Parks	475.4	395.2	626.7	587.6	534.9	537.17	3
	330.1	358	642.2	695.4	729.4		
Playgrounds	475.4	330.1	-			402.73	4
Sport facilities	-		-			-	0
Public swimming pools	-		-			-	0
Community/recreation centers	-		-			-	0
Big parks with lakes and recreational trails,	-		-			-	0

Inside the neighborhood boundary there are 4 parks and only 2 playgrounds, but inside the circle with 800m radius, there are 6 parks without any playgrounds. So the

other indicator locations like sport facilities, swimming pools, and the big parks have got zero points because there are no specific or particular locations or places for swimming and sport for children within 800m from the center of the neighborhood. Also there are no community recreation centers within the distance (see figure 3-14).

3.4.1.5 Community life

This dimension consists of 3 indicators, race and age diversity, and the third one is presence of educated residents. Calculations of Simpson's race and age diversity index were based on the data by the neighborhood's mayor or (mukhtar) during a personal communication in 2020. These two indicators are important points in child friendly cities and diversity in every community is positive. For the age diversity, the ages of residents have been divided into 18 groups of ages such as (0-4, 5-9, 10-14, 15-19, 20-24, 25-29, and so on until the last group is 60-above).

Table 3.10: Age diversity

(Indicator)	Simpson's Age Diversity Index	Points
Age diversity	0.917	4

For the race diversity the total number of residents in the neighborhood is 18412 and there are three races live in the neighborhood, the main one is Kurds, and minorities as Iraqi-Arabs and Syrian-Arabs.

Table 3.11: Race diversity

(Indicator)	Numbers of races in the neighborhood	Simpson's race Diversity Index	Points
Race diversity	Kurds 18225	0.020	0
	Iraqi-Arabs 138		
	Syrian-Arabs 49		

The other indicator is presence of educated people which is about numbers of residents with associate and bachelor degrees, and higher. The calculation of the location quotient coefficient was based on personal communication in Sulaymaniyah region statistics office and with the mayor of the neighborhood in 2020.

Table 3.12: Presence of educated people

(Indicators)	Total numbers in the neighborhood	Total numbers in the city	LQ	Points
Presence of educated people	7,740	256,292	1.23	4

3.4.1.6 Findings

As it has been mentioned in 3.3, according to Rakhimova (2011), these five dimensions can work together and they can be summed and give a final score with a maximum 20 points, to measure and characterize the level of children friendliness of the neighborhood. For example:

- (15 – 20) The neighborhood is Child-friendly

- (9 – 14) The neighborhood is somewhat child-friendly

- (3 – 8) The neighborhood is not child-friendly

• (≤ 3) The neighborhood is not suitable for children

So by using this methodology and finding the values and points of each dimension and then summing them, the final score of the neighborhood has been found that is equal to 10.3 and it is between (9 – 14) which shows that the neighborhood is somewhat child-friendly (see table 3-13).

Table 3.13: Final scores

Dimensions of the Evaluation framework	Indicators	Results	Points	Final scores (average)
Health and social services	Distance to urgent care.	632.46	2	2
Educational resources	Distance to primary school.	569.64	2	2
	Distance to middle school.	603.06	2	
	Distance to child day care services.	371.857	4	
	Distance to additional educational services.	-	0	
Access to play and recreation	Distance to parks.	537.167	3	1.2
	Distance to playgrounds.	402.73	4	
	Distance to sport facilities.	-	0	
	Distance to public swimming pools.	-	0	
	Distance to community/recreation centers.	-	0	
	Distance to big parks with recreational trails, rivers and lakes.	-	0	
Safety, protection and mobility	Overall crime rate.	0.0287	4	2.43
	Child related crime rate.	0	4	
	Incidence of traffic accidents.	0.714	3	
	Street speed limit.	74.04	3	
	Block watch program.	-	0	
	Distance to bus stop.	526.952	3	
	Presence of bicycle lanes.	-	0	
Community life	Race diversity.	0.020	0	2.67
	Age diversity.	0.917	4	
	Presence of educated people.	1.234	4	
Total				10.3

3.4.2 Interview

The interview has been done during 15 September 2020 to 15 November 2020, with 20 children participants who live in Hewareberize neighborhood, aged between 6 to 12 years. The participants consist of girls and boys who have accepted to participate in this study.

As it has been mentioned above, in this study for the interview, 9 questions have been asked. The response of each of these questions is used for evaluating one or two principles of Child Friendly Cities (see table 3-1), except the first question which is just a warm-up question.

The questions have been asked in a simple way to make it easy for children participants, which are:

1. Have you lived in Hewareberize neighborhood your whole life?

2. Are you allowed to go to your favorite places alone or with your friends?

3. Where do you usually meet your friends and play with them in your neighborhood?

4. Are you scared of walking outside alone in your neighborhood?

5. Are there any difficulties in your neighborhood regarding your safety?

6. Do you participate in any decision processes when a park/playground construct in your neighborhood or before changing something in your school?

7. Are there developed play areas and parks for you in your neighborhood?

8. Do you usually celebrate national and religional events with your neighbors?

9. Does your family usually ask your opinion about decisions that directly affect you or related to you?

In question 2, children have been asked in order to know whether they are allowed to go out alone without any supervision of an adult or not, also to have information about their allowance to walk alone in their neighborhood, experience new things, and meet their friends (Figure 3-15).
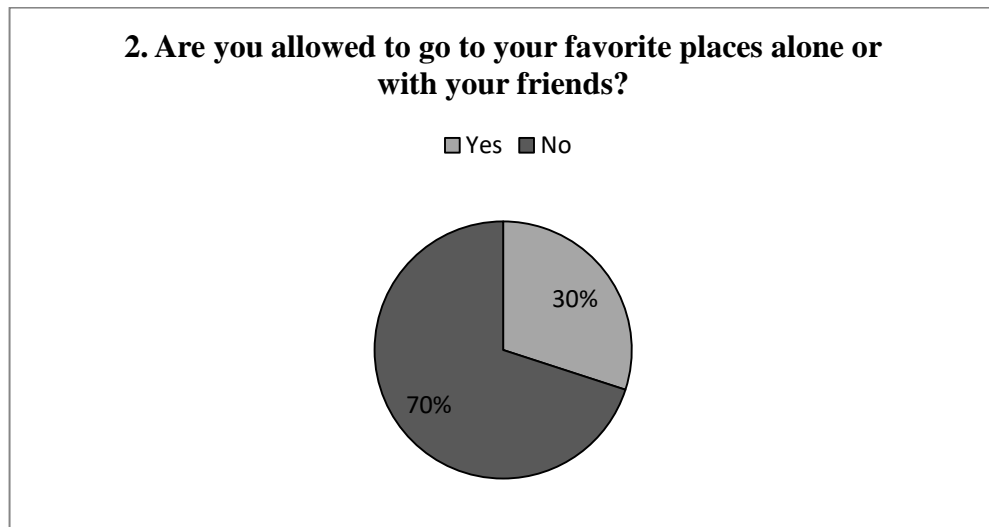

Figure 3.15: Average of the response for question two

The answers of question 3 were beneficial to tell where children usually meet their friends and where are those places that they use them to play in. They were also helpful to know if they are allowed to go out and play or not, and to know whether there is a proper place for children in their neighborhood, or not. This question also told about children's favorite place to play and meet their friends (Figure 3-16).

3. Where do you usually meet your friends and play with them in your neighborhood?

☐ Street ■ Park and playground ☐ Nowhere
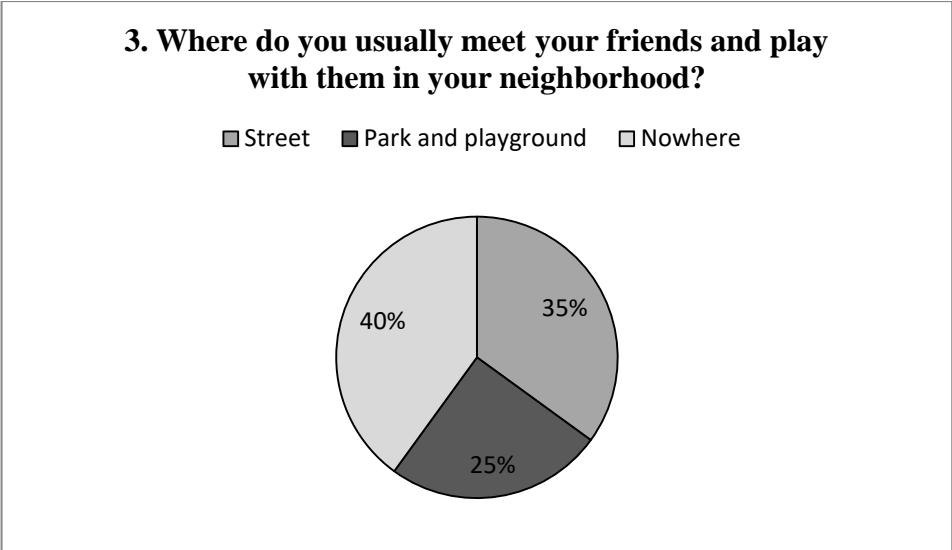
40%

35%

25%

Figure 3.16: Average of the response for question three

Question 4 was helpful to know whether children are afraid to go outside alone or not. It helped to understand if the neighborhood is safe and protective for them from their points of view or not (Figure 3-17).

4. Are you scared of walking outside alone in your neighborhood?
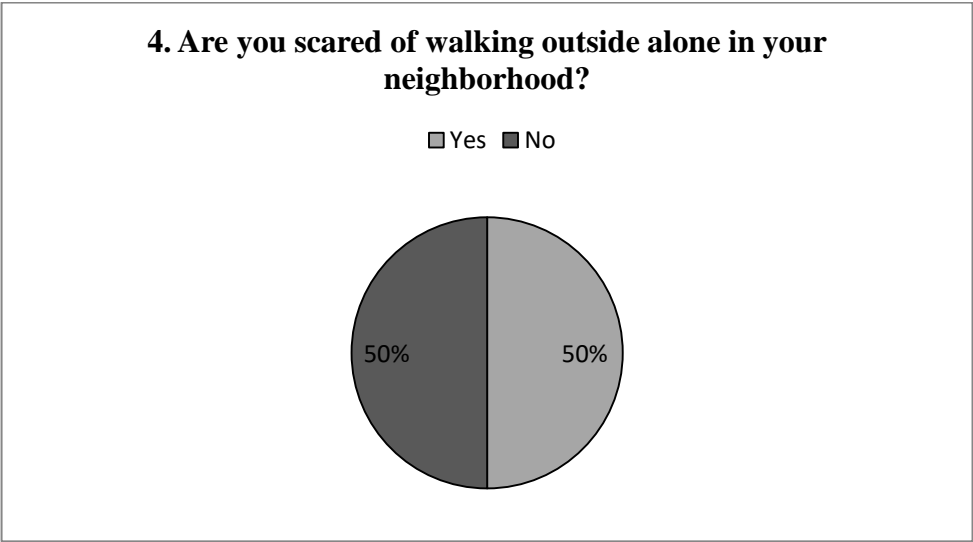
☐ Yes ■ No

50%

50%

Figure 3.17: Average of the response for question four

Question 5 helped to understand if their neighborhood is not safe for them so what are the difficulties and problems they think about (Figure 3-18).

5. Are there any difficulties in your neighborhood regarding your safety?

☐ Risk of traffic ☐ Fight ☐ Threat of street dogs ☐ Nothing

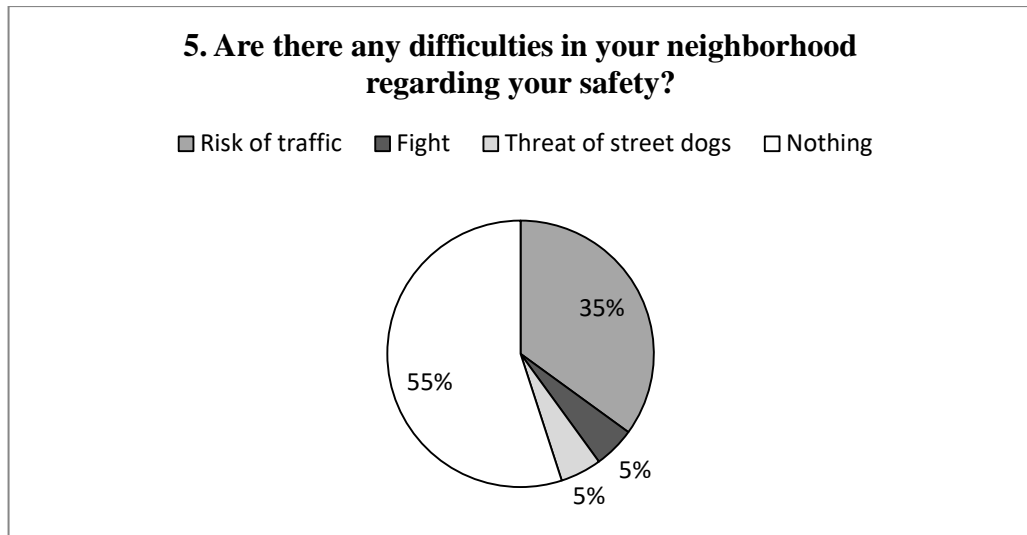*(Pie chart: 35%, 5%, 5%, 55%)*

Figure 3.18: Average of the response for question five

In question 6, is used to tell us about their allowance to participate in those decisions that affect them in their neighborhood or community (Figure 3-19).

6. Do you participate in any decision processes when a park/playground construct in your neighborhood or before changing something in your school?
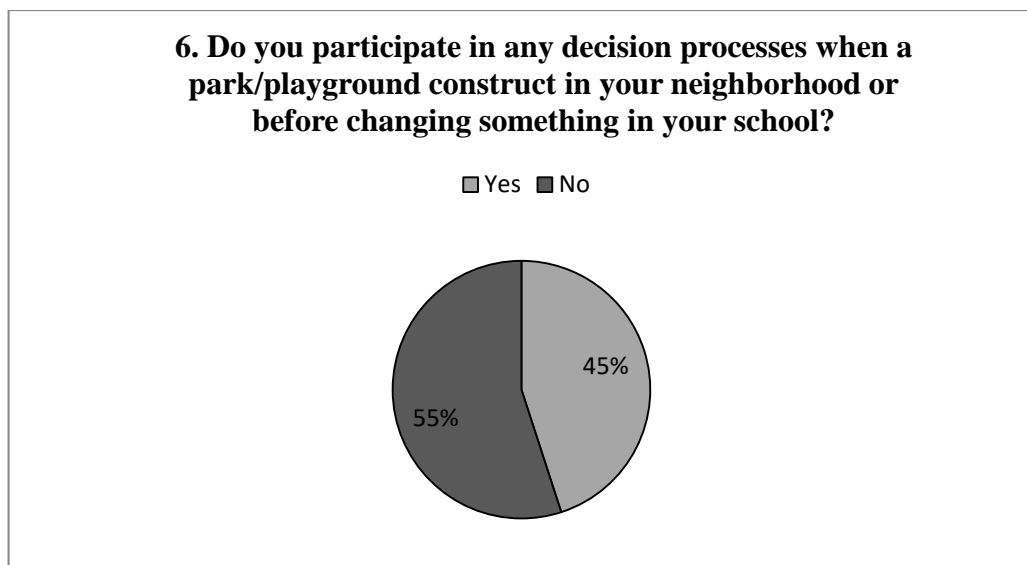
☐ Yes ☐ No

(Pie chart: 45%, 55%)

Figure 3.19: Average of the response for question six

Question 7, is used to know if the children are satisfied with those public spaces/places or parks and playgrounds they have or not. It helped to understand the quality and properness of those areas in children's point of view (Figure 3-20).
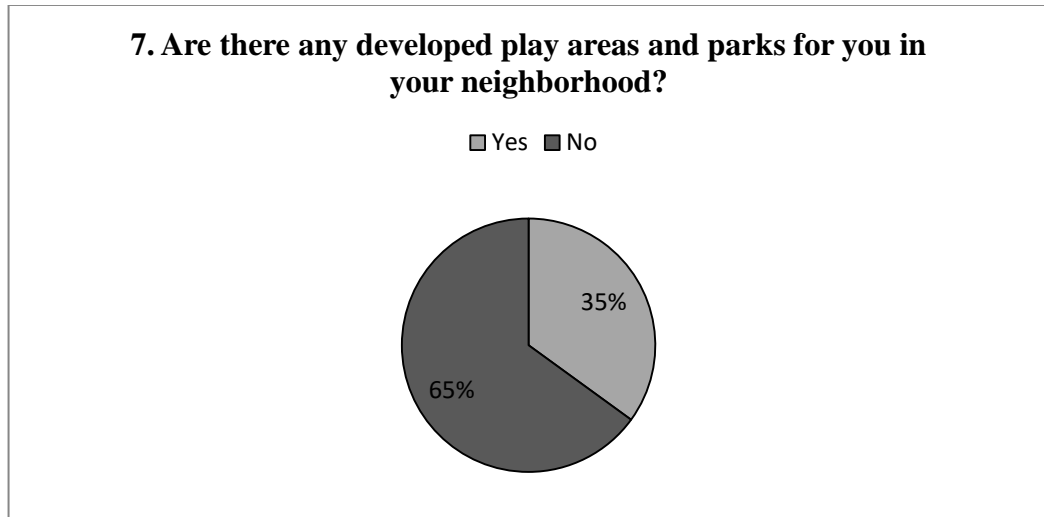

Figure 3.20: Average of the response for question seven

Question 8, is used to understand children's socialization with others and their allowance and ability to join in celebrations, or cultural events (Figure 3-21).
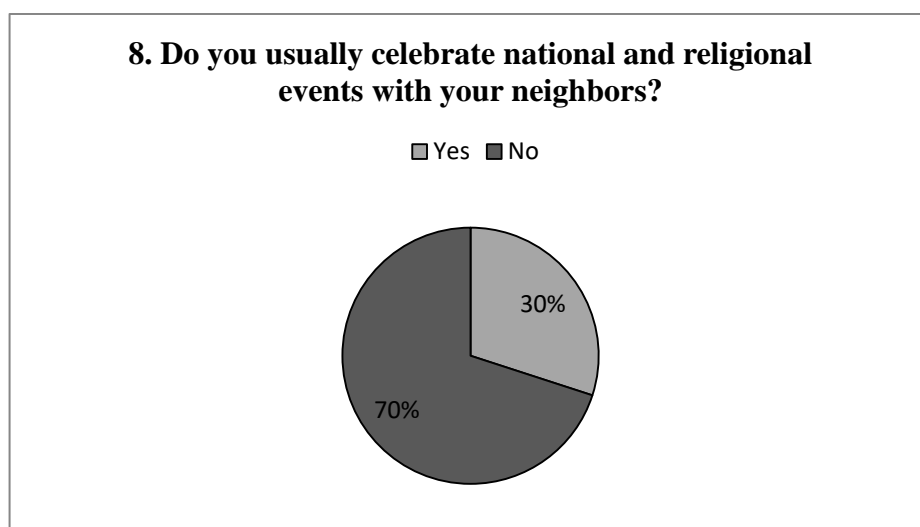

Figure 3.21: Average of the response for question eight

Question 9, is helpful for realizing children's ability to participate in their family and community and act as a member in their family which have their own thoughts, ideas, desires, and feelings like other members; and they can choose what they want and what they like (Figure 3-22).
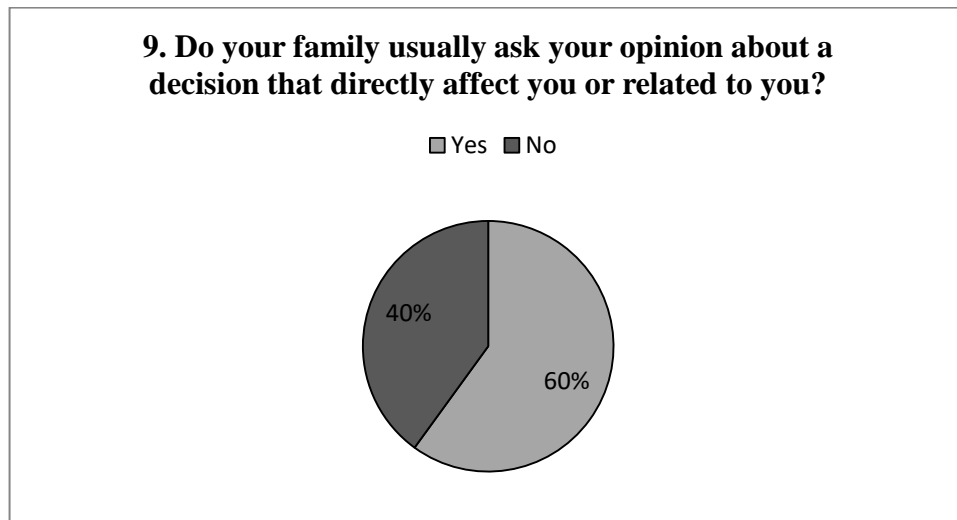

Figure 3.22: Average of the response for question nine

The children's answers of the interview have been shown in table (3-14) and (3-15), also the codes as P1, P2, and so on which it means first participant, second participant, and so on. They have been used instead of the name of the participants.

Table 3.14: Interview answers by participants

Codes of Participants	Gender	Age	Questions and Answers									
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
P1	Girl	6	No	No	Nowhere	No	No	Yes	No	No	Yes
P2	Boy	6	Yes	No	Street	Yes	No	Yes	No	No	Yes
P3	Girl	7	Yes	No	Street	Yes	Yes, Car	No	No	No	No
P4	Girl	7	Yes	Yes	Park and playground	No	No	Yes	Yes	Yes	No
P5	Boy	8	Yes	No	Nowhere	Yes	No	No	Yes	No	Yes
P6	Boy	8	Yes	Yes	Nowhere	No	Yes, Car	No	No	No	No
P7	Girl	8	Yes	No	Street	No	No	Yes	No	No	Yes
P8	Girl	9	Yes	No	Park and playground	Yes	Yes, Car	No	Yes	No	Yes
P9	Girl	9	Yes	No	Street	Yes	Yes, Car	No	No	No	No
P10	Girl	9	No	No	Park and playground	Yes	Yes, Car	No	Yes	No	Yes
P11	Girl	10	Yes	No	Nowhere	Yes	Yes, Car	No	No	No	No
P12	Boy	10	Yes	No	Nowhere	No	Yes, Fight	No	No	No	No
P13	Girl	10	Yes	No	Nowhere	Yes	Yes, Car	No	Yes	Yes	No
P14	Boy	11	Yes	Yes	Street	No	No	Yes	No	Yes	Yes
P15	Boy	11	Yes	No	Nowhere	Yes	No	No	Yes	No	No
P16	Boy	11	Yes	No	Street	No	No	Yes	No	Yes	Yes
P17	Boy	11	No	Yes	Park and playground	No	No	Yes	Yes	Yes	Yes
P18	Boy	12	No	Yes	Park and playground	No	No	No	No	No	Yes
P19	Girl	12	Yes	No	Nowhere	Yes	Yes, Dog	Yes	No	No	Yes
P20	Girl	12	No	Yes	Street	No	No	Yes	No	Yes	Yes

Table 3.15: the accumulation of the participant's answers

Questions	Answers	
	Yes	No
Q1	15	5
Q2	6	14
Q3	7 (Street) 5 (park and playground)	8 Nowhere
Q4	10	10
Q5	7 (Risk of traffic) 1 (fight) 1 (Threat of street dogs)	11
Q6	9	11
Q7	7	13
Q8	6	14
Q9	12	8

3.4.3 Cognitive map

As it has been mentioned above, in this study cognitive map has been used to understand children and their requirements, feelings, and thoughts. In the same day as the interview, children have been asked to draw their neighborhood in two ways, first the existing version of their neighborhood, and then the improved one; they are expecting to see. Also they have been asked to draw a red circle around their favorite place/space.

The participants were given two papers to do their drawings. They have been asked to draw as a top view. But, most of the younger children did not do it in the top view because it was difficult for them to imagine their neighborhood as a top view.

In order to understand children's drawing it needs the process of translating and interpreting them to words to make a sense. But the interpretation is the work of psychologists and psychoanalysts and the right of doing this interpretation in this study is not allowed. So only the drawings have been checked to find out what are those elements or themes that children draw in the map of their neighborhood or what are those elements or themes that they directly think about when they draw their neighborhood. After that the drawings of the improved version of their neighborhood have been checked to find out what they really want to remain and or/and to eliminate in their neighborhood, and also in which way they want to improve their neighborhood. So, that is the way to understand their feelings, requirements, and the needs that they wish to see.

In this study, in the same way as A. Machón (2013) and Deguara (2015) studies, the themes in the drawings have been subdivided into 6 main categories depending on

the most popular themes in their drawings (Vegetation and water body, climate, buildings, recreational areas, and transportation). Each of these main categories has been divided into subcategories. These categories and sub-categories are those which are drawn by most of the participants.

Vegetation, Green areas, and water body

This category consists of five sub-categories:

- Tree: trees can be one of the main themes that were used by children in their drawings. For example, trees and grass were highly emphasized and ranked in children's drawing on the map of their neighborhood as similar by Maurer and Baxter (1972) study. In this study, only 8 of the participants have drawn trees in the existed version of their neighborhood, but 13 of the children have drawn them in the improved version. So it shows that children want to see more trees in their neighborhood (see figure 3-23).

- Flower: As well as trees, flowers are the main themes in children's drawings. According to Bakar (2002), in children's drawings flowers can be interpreted as happiness, beauty, and fun among other vegetation. In this study none of the children have drawn flowers in the existed version of their neighborhood, but 7 of them have drawn it in the improved version; (see figure 3-24).
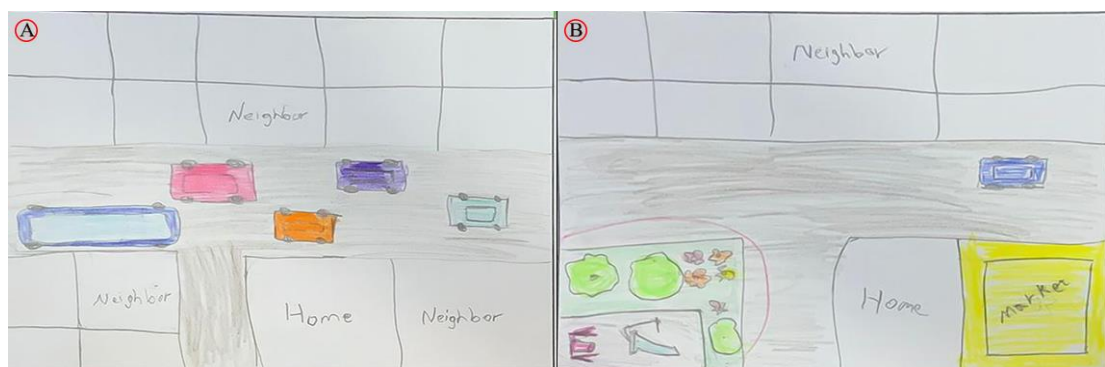

Figure 3.23: Drawings by P6; A: Existed version; B: Improved version

Figure 3.24: Drawings by P4; A: Existed version; B: Improved version

- Park: One of the main important points in neighborhoods is having public parks for residents, especially for children. In this study only 4 of the children drew parks in the existed version of the neighborhood and 10 of them drew it in the improved version; for example (see figure 3-25).

Figure 3.25: Drawings by P14; A: Existed version; B: Improved version

- Greenery: it means the green area in the neighborhood which gives the residents a beautiful view and clean environment. In this study 6 children drew green areas in their neighborhood in the improved version paper, but only 3 drew greeneries in the existed version.

- Water body: About water bodies in the neighborhood for children it is something not very common, only 3 of them mentioned water bodies to improve their neighborhood; for example (see figure 3-26).
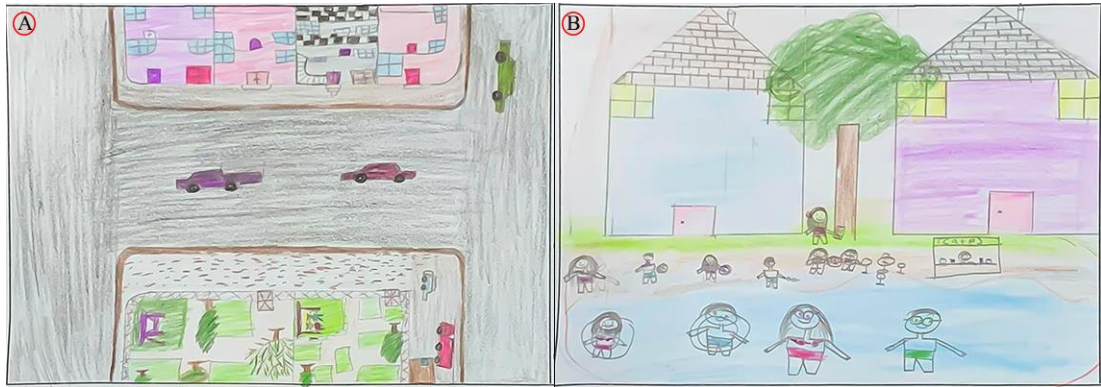

Figure 3.26: Drawings by P13; A: Existed version; B: Improved version

Climates

According to Bakar (2002), Children in general may be sensitive and aware of climatic changes, But In their drawings they just mention two climatic elements most of the time, as the sun and clouds.

- Sun: According to Deguara (2015), sun in children's drawings represents a sense of well-being, fun, and happiness. In this study 5 participants drew sun, 2 of them in the existed version and the others in the improved one; for example (see figure 3-27).
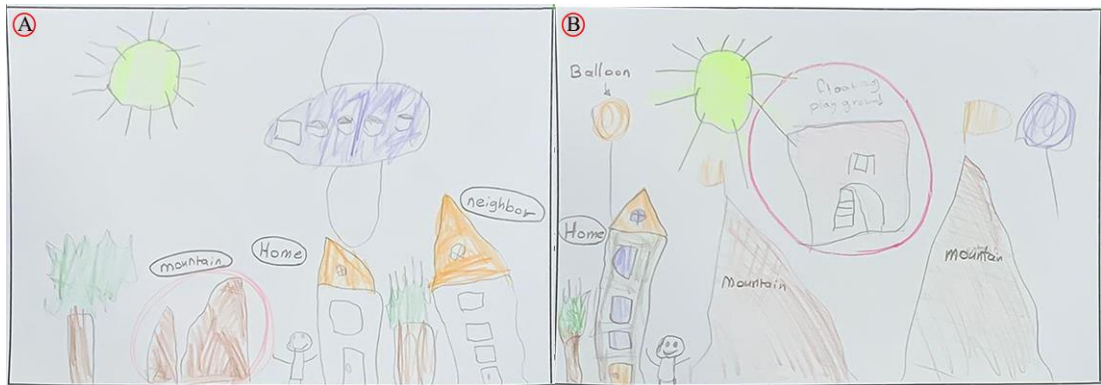
Figure 3.27: Drawings by P1; A: Existed version; B: Improved version

- Cloud: By comparing it with the sun, a few numbers of children drew clouds in their drawings, which are only 2 participants, (see figure 3-28).
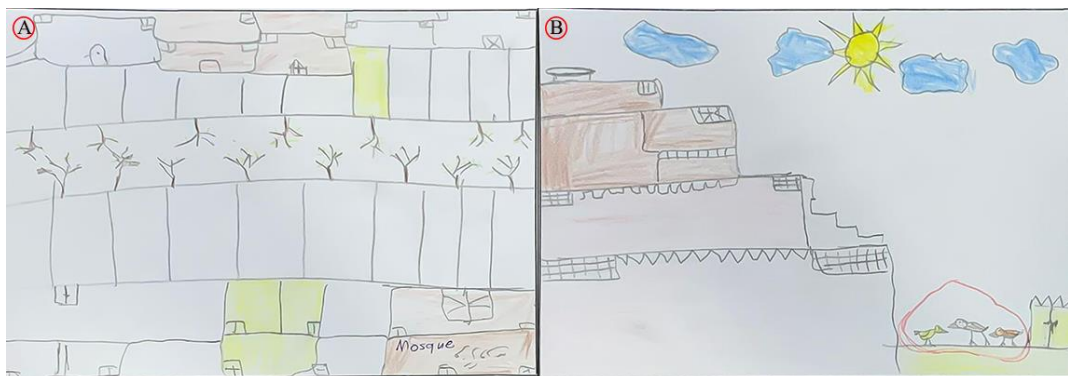

Figure 3.28: Drawings by P7; A: Existed version; B: Improved version

Buildings

- Home: Children draw the houses in the very early ages and it can be determined as one of the first drawings that children make. Homes in children's drawings represent stability and structure (Fogarty, 2018). In this study nearly all of the children drew their own home; for example (see figure 3-29).

Figure 3.29: Drawings by P8; A: Existed version; B: Improved version

- Neighbors: In this study when children were asked to draw their neighborhood, most of them drew their own homes and with their neighbors. But some of them removed all or some of their neighbors around them; for example (see figure 3-30).

Figure 3.30: Drawings by P10; A: Existed version; B: Improved version

- Market and shop: Shops and markets are defined as an important facility in each neighborhood. In the drawings of the children in this study, markets and shops have concentrated on and 6 of them have used them to improve their neighborhood; for example (see figure 3-31).
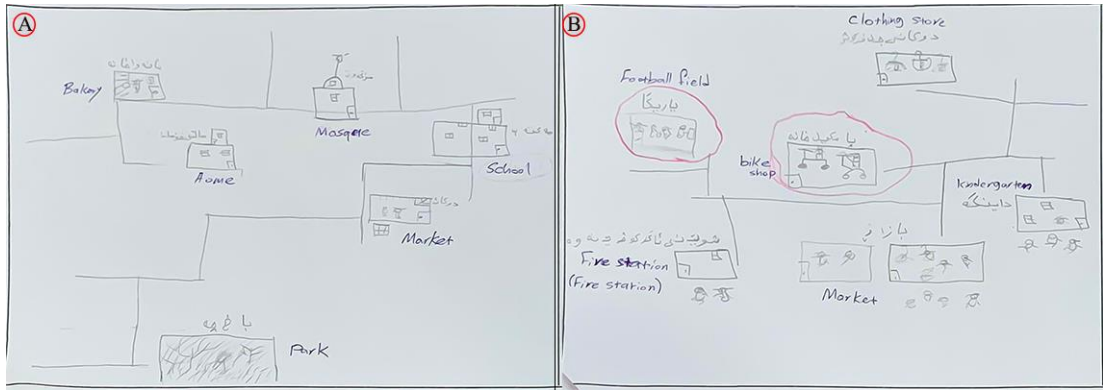
Figure 3.31: Drawings by P15; A: Existed version; B: Improved version

Recreational areas

- Playgrounds: As it has been mentioned in the literature review, playgrounds have its own importance in making a community more child-friendly. But in this study only 7 children used playgrounds in their improved version of their neighborhood drawings and only one child drew it in the existed version; for example (see figure 3-32).

Figure 3.32: Drawings by P19; A: Existed version; B: Improved version

- Cinema: it is one of the facilities that have been mentioned by two children in their improvement for their neighborhood; for example (see figure 3-33).

Figure 3.33: Drawings by P18; A: Existed version; B: Improved version

- Football field: Two of the children have used the football fields as a way to improve their neighborhood, instead of playgrounds; for example (see figure 3-34).
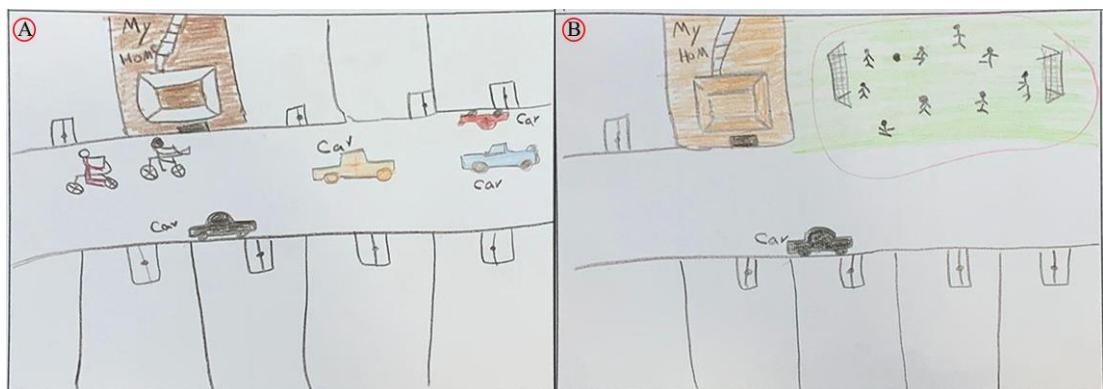

Figure 3.34: Drawings by P5; A: Existed version; B: Improved version

Transportation

In this study for transportation children have mentioned streets with cars and without cars, 2 of them have drawn bike lanes and bicycles.

- Streets with cars: Numbers of the drawings with streets with cars are 9 in the existed version and 2 in the improved one; for example (see figure 29).

- Streets with no or less car: About this one, 3 of the children have drawn it in the existed version and 10 children have used it as a way to improve their neighborhood; for example (see figure 24, 34, and 35).

Others

- Activities and play: Most of the children drew numbers of kids who play and do activities on the streets and parks next to their homes. Only 3 of the participants represented play and activities in the existed version, but 15 of them imagined to have a neighborhood that would give them more opportunities to play and do activities; for example (see figure 3-35).

Figure 3.35: Drawings by P11; A: Existed version; B: Improved version

- Human: In this study most of the children drew human figures, some of them are their own selves or/and their families, or some of them are their friends. Sometimes they have just drawn random and unknown people. So 9 of the children have mentioned more people in their improved neighborhood; for example (see figure 3-36).

Figure 3.36: Drawings by P3; A: Existed version; B: Improved version
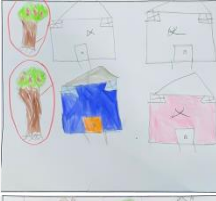
Findings
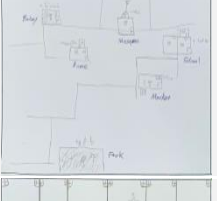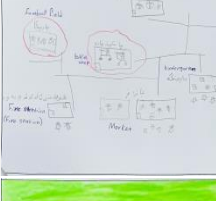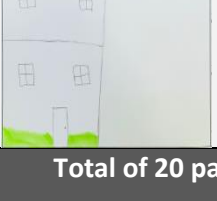
During the analysis of the children's drawings or comparison of the two different versions of their drawings (see tables 3-16 and 3-17), it has been found out:

- Children want to have more green areas and parks according to their drawings in the drawings of the neighborhood's improvement. They drew more green areas, colorful flowers, trees, and parks.

- According to their figures about climate in their drawings a few of them have drawn suns and clouds which according to Bakar (2002) and Deguara (2015), suns and clouds represent happiness and well-being.

- Children drew buildings with three several functions more than others, which are home, neighbors, shops and markets; in general nearly all of the children drew their homes as the most important place in everyone's life. Also neighbors are one of the buildings that children were emphasized on in their drawings, some of the children do not want to have neighbors around them. They removed them in their drawings, and replaced them with another place or a park and green areas. Market and shops have their own importance in children's point of view to improve their neighborhood, because it is mostly used by them more than other buildings except for their homes and neighbors.

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- Having proper recreational areas is one of the main principles of child friendly city and community. In this study, 7 of the children have drawn playgrounds with playing equipment in the improved version of their neighborhood, which is not too much among 20 participants. So according to LAY (2001), children spend a limited time playing in playgrounds and especially with those old equipment, and playing in those designated areas does not give them their real needs, they want to play freely, anytime and everywhere. So it can be a reason why children did not draw playgrounds in their improved neighborhood drawings in this study. For the recreational areas children also drew cinema and football fields as their desired places to add to their neighborhood.

- About transportation and traffic, according to the improved version of children's drawing, a half of the participants want to have less or no cars in their neighborhood, and some of them drew kids who play with each other on the streets instead of cars. While in the existed version of their neighborhood they have drawn too many cars. So it shows that children are annoyed by those numbers of cars in their street, and they want to remove them and play on the streets.

- In the participants' drawings, the most popular figures are children and kids that are doing play and activities all together. In the drawings of the improved version of the neighborhood, 15 of the children, which are more than half, drew some kids that are playing together. So these can show that children want to have more opportunity to play together in everywhere they want as streets, parks, and so on. In addition, human figures can also be seen in their

improved neighborhood drawings, which can be their family, friends, or any other people, which shows that those children want to socialize more and meet people or play with them. In the existed version of their drawings, some children have drawn peoples that are locked inside their houses or there are no people in their drawings, but in the improved one, they have drawn them or peoples outside their houses and play (see figure 3-26, 3-29, and 3-35).

Table 3.16: Results of the drawings of the first group of participants (from P1 to P10)

Children's Drawings P1-P10	Existed version (A)	Improved version (B)		Tree	Flower	Park	Greenery	Waterbody	Sun	cloud	Home	Neighbors	Market and shop	Playground	Cinema	Football field	Streets with car	Streets with no or less car	Activities and play	Human
P1			A	■					■	■	■	■								■
			B	■					■		■			■					■	■
P2			A														■			
			B	■	■			■			■	■	■					■		■
P3			A								■	■					■			■
			B	■	■	■					■	■	■		■		■	■	■	■
P4			A								■	■					■			
			B		■		■				■	■		■				■	■	
P5			A								■	■					■			
			B								■	■				■		■	■	■
P6			A								■	■					■			
			B	■	■	■					■	■	■	■				■	■	■
P7			A								■	■								
			B				■		■	■	■									
P8			A	■		■					■	■					■			
			B	■		■					■	■					■		■	■
P9			A						■		■	■								
			B	■		■			■		■	■				■			■	
P10			A								■	■					■			
			B						■				■	■			■		■	

Table 3.17: Results of the drawings of the second group of participants (from P11 to P20)

Children's Drawings P11-P20				Vegetation, Green areas & Waterbody					Climate		Buildings			Recreational areas			Transportation		Others	
Participant	Existed version (A)	Improved version (B)		Tree	Flower	Park	Greenery	Waterbody	Sun	cloud	Home	Neighbors	Market and shop	Playground	Cinema	Football field	Streets with car	Streets with no or less car	Activities and play	Human
P11			A	■		■					■	■					■			
			B	■							■	■	■	■				■	■	■
P12			A	■							■								■	
			B								■								■	
P13			A	■		■					■	■			■		■		■	
			B	■		■		■			■	■						■	■	■
P14			A								■	■								
			B		■	■					■	■		■					■	■
P15			A			■					■		■							
			B										■						■	■
P16			A								■	■						■		
			B	■		■						■						■	■	■
P17			A	■			■				■									
			B	■			■													
P18			A								■	■						■	■	■
			B	■			■	■			■				■			■	■	■
P19			A	■			■				■	■						■	■	■
			B	■	■	■	■				■	■		■				■	■	■
P20			A				■				■									
			B		■	■	■				■									
Total of 20 participants (A)				8	0	4	3	0	2	1	20	16	1	1	0	0	9	3	3	4
Total of 20 participants (B)				13	7	10	6	3	3	1	17	12	6	7	2	2	2	10	15	9

3.4.4 Observation

There are two types of observation in this study: First one is based on something that has been heard, or noticed. It has been used for four principles of Child Friendly City (Principle 1: participation of children in decision making about their city, Principle 2: Children should be free to indicate their opinion about their city, Principle 5: having safe water for drinking, and Principle 10: living in a clean environment).

For the participation of children in decision making and expressing their opinions about their city, the living experiences in the city have ensured that children are not allowed in the city and the whole country to participate in decision making and express their opinions about their city in general. Children here cannot be a part to express their ideas and opinions about their city and the government's works. For those issues children are just ignored and they have no allowance to be involved. But by going into details, it has been found in some private sectors in the city such as non-governmental schools; sometimes children can participate and express their opinion about any changes inside the school.

About having safe water for drinking, according to observation and to the Kurdistan Region Statistics Office (2019), and International Organization for Migration (2018), water quality in Sulaymaniyah city is very safe for drinking (see figure 3-37).
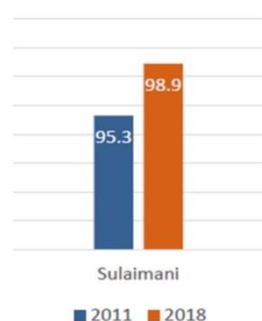

Figure 3.37: Percentage rate of household in Sulaymaniyah using safe drinking water source (Kurdistan Region Statistics Office, 2019)

One of the principles of Child Friendly City is living in a clean environment. In Sulaymaniyah city or in the whole country Iraq, there is lack of essential regulations, policies, and guidelines at all levels that are related to environmental-friendly and safe operation in all sectors, in industry, public services, agriculture, and energy (Othman et al., 2017). During observation it has been found that Sulaymaniyah has better air quality and cleaner environment than other cities in the south of Iraq. According to Plume labs (2020) which uses World Health Organization (WHO) guidelines as well as international standards developed by the United States Environmental Protection Agency (EPA); Sulaymaniyah city's annual average of Air Quality Index (AQI) is 63, it is moderately polluted because according to WHO standards, those AQIs between (51 to 100) is acceptable, but it still have a risk for those who are unusually sensitive to air pollution. Children face some serious risks from air pollution because their lungs are growing and they are active. According to the (Environmental Protection Agency (2011)), children should not be out when AQI is more than 150 or more. So because Sulaymaniyah city's annual average AQI is 63, it ensures that children in the city in general, and the Hewareberize neighborhood has somehow a clear and safe environment to go out, do activities, and play outside.

Children were observed in the public and open spaces in the neighborhood in order to get information about children's activities and their requirements in the outdoors.

The duration of the observation is from 22 August to 17 September, each public and open area has been observed one day a week, two different times a day, for four weeks. In the observation, it has been mentioned if the children independently move around their neighborhood or they are with others, and also their gender has been mentioned.

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The Middle Park

Figure 3.38: The Middle park

The park is located in the South-West of the neighborhood (see figure 3-39), the park has been observed on Saturdays for four weeks, two times a day (9-11 am) and (4-6 pm).

Legend

The middle park

Scale 1:10 000

Figure 3.39: The Middle park

In the morning of the first Saturday 22-8-2020, during two hours of observation no children were seen, and in the afternoon from 4-6 pm only 2 girls with their guardian came to the park. For the second Saturday there were no children alone in the park, in the morning 4 children were in the park with their guardians, 2 boys and two girls, and in the afternoon 3 boys with their carer were in there. In the mornings of the two next Saturdays, generally no children came to the park, but in the afternoon of the third Saturday there were five children with their parents, 3 boys and two girls, and in the fourth Saturday there were only 5 boys in the park unsupervised by their parents (see figure 3-40 and 3-41).

Figure 3.40: Numbers of children in the Middle park each saturday for one month, in the morning

The Middle Park (4-6 PM)

Figure 3.41: Numbers of children in the Middle park each saturday for one month, in the afternoon

Hewareberize Park

Figure 3.42: Hewareberize park in the mornings
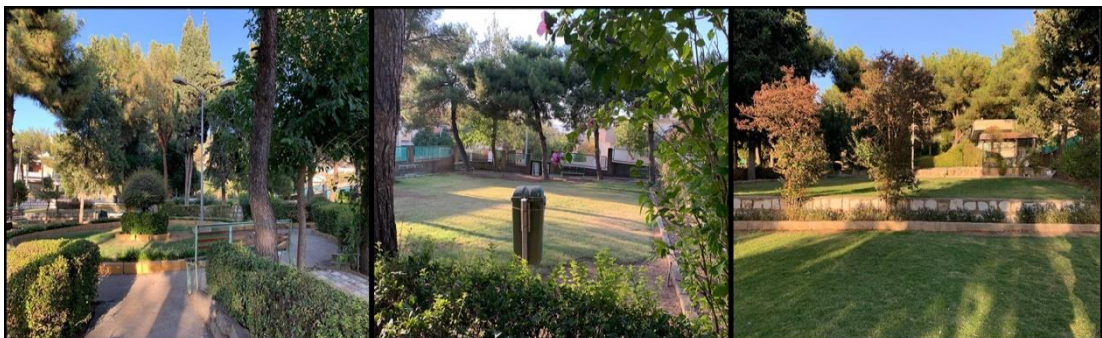
Figure 3.43: Hewareberize park in the afternoons

This park is located in the center of the neighborhood (see figure 3-44), the observation of this park has been done on sundays, for four weeks, and 2 times a day.

Figure 3.44: Hewareberize park

In the morning of the first sunday, no children were in the park but in the afternoon there were five children in the park. In the second morning there were 3 alone children in the park, but for the afternoon this number was increased to 6 children, which one of them was with his guardians. In the third and fourth day of the observation more children have came to the park in the afternoons than the mornings (see figure 3-45 and 3-46)
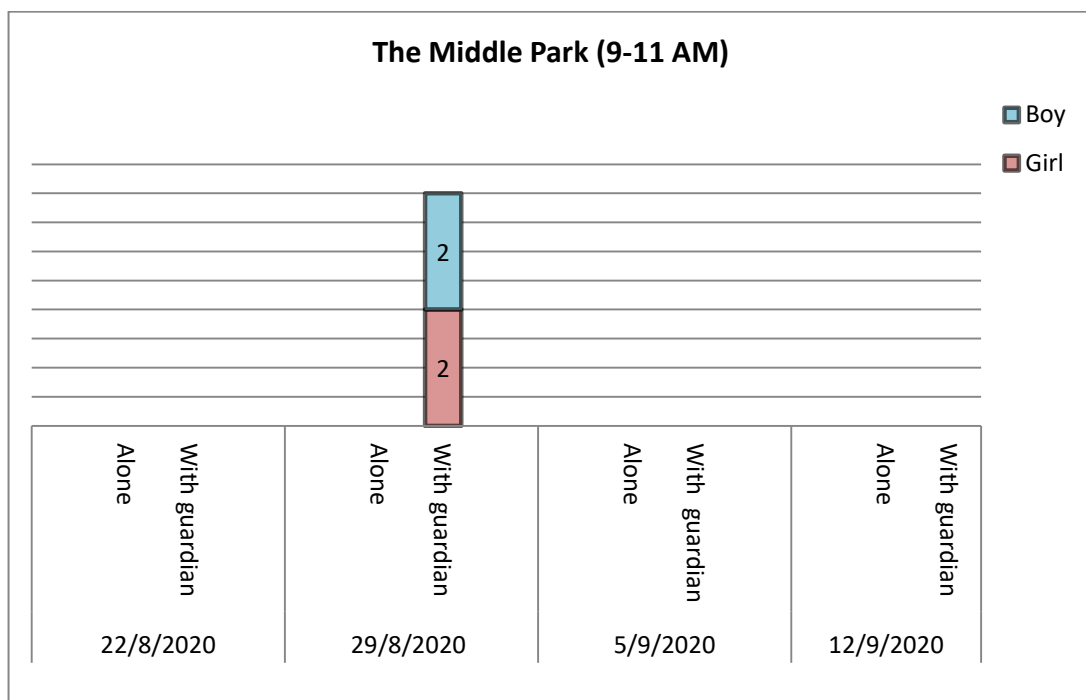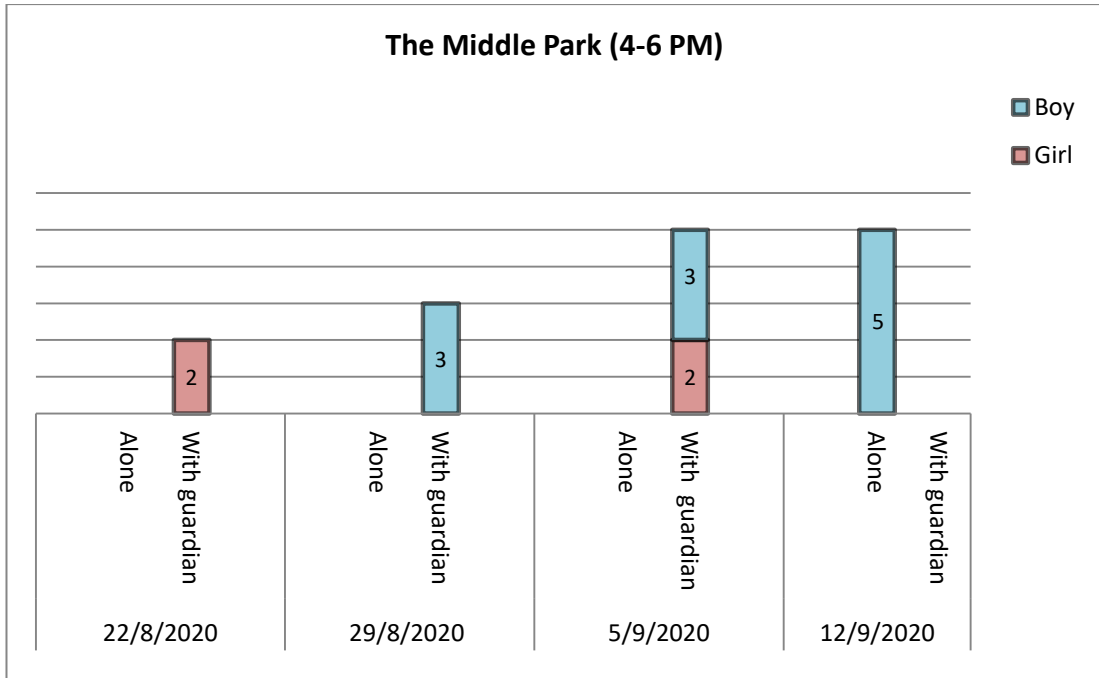
Figure 3.45: Numbers of children in Hewareberize park each sunday for one month, in the morning
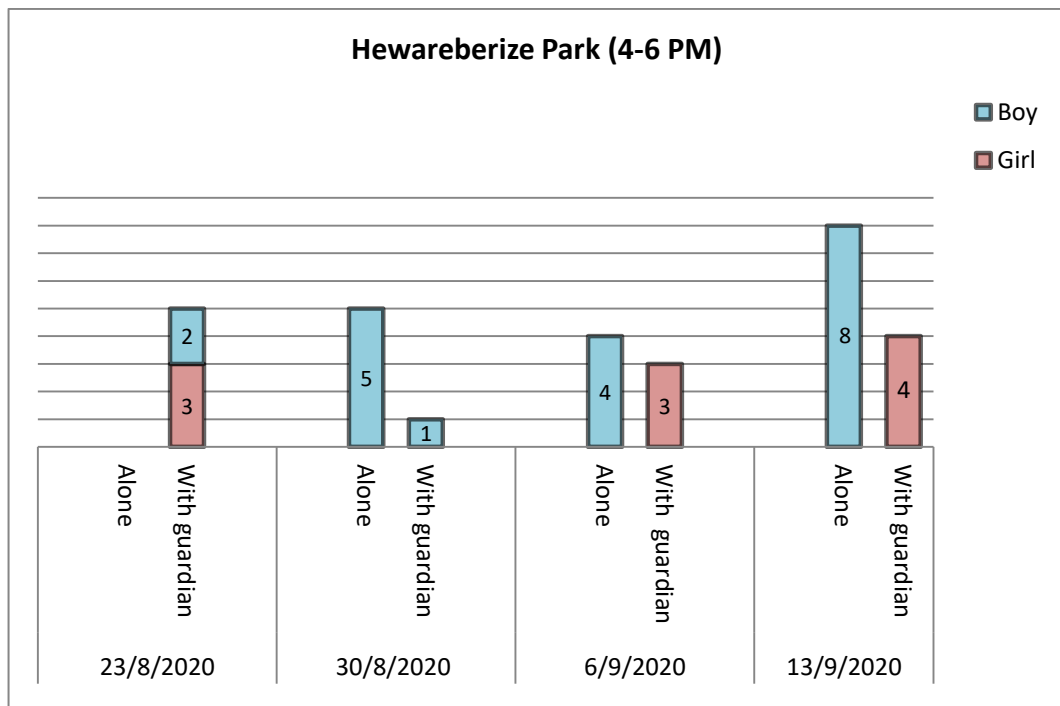
Figure 3.46: Numbers of children in Hewareberize park each sunday for one month, in the afternoon

Tuwîmelîk park and playground
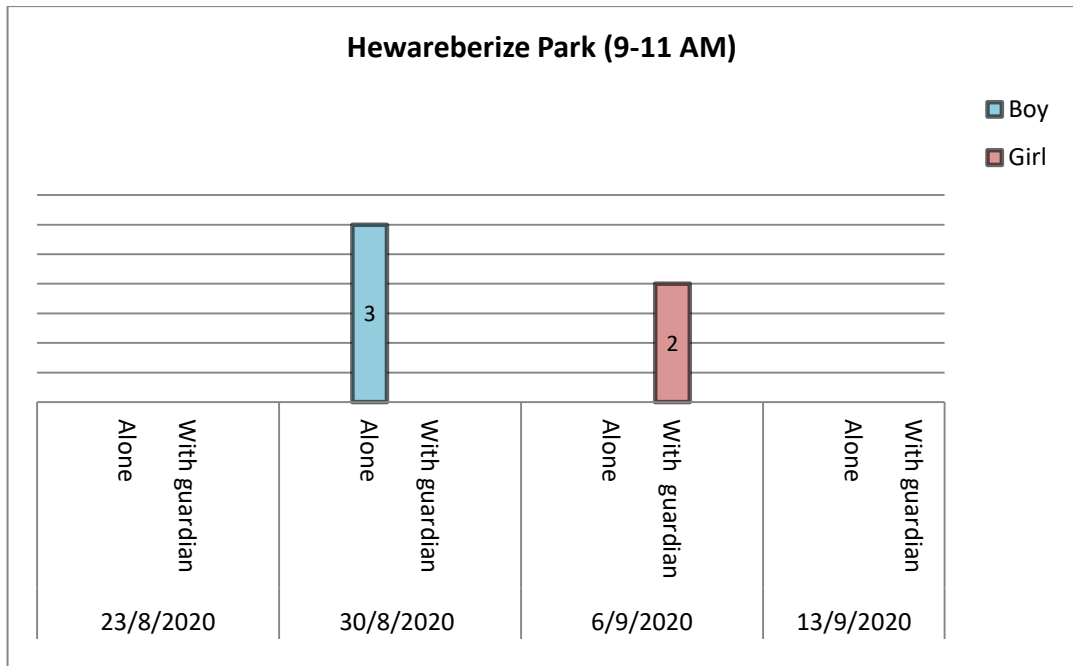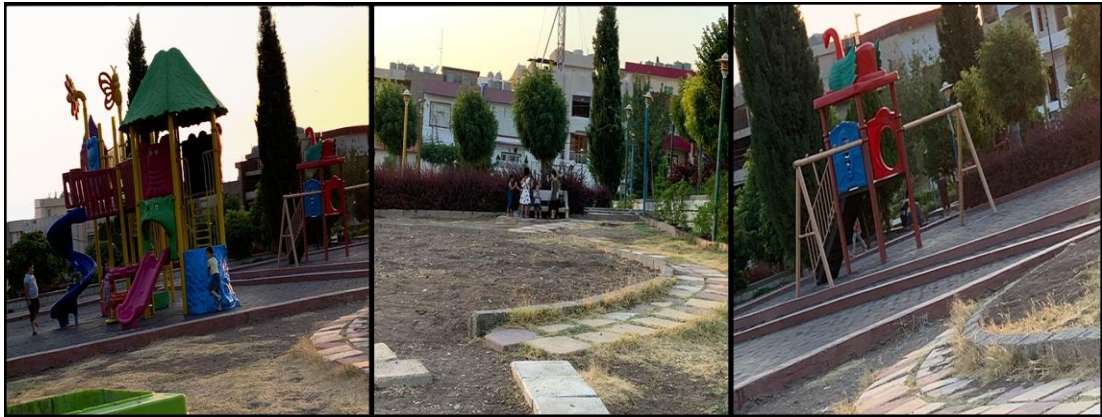

Figure 3.47: Tuwîmelîk park and playground in the morning

Figure 3.48: Tuwîmelîk park and playground in the afternoon

This park is the largest park in the neighborhood, a playground exists inside the park, it has more visitors than the other parks. The observation has been done here each Monday for a month. In the morning and afternoon for two hours. It has been located in the west part of the neighborhood (see figure 3-49).

In the first day of the observation, in the morning there were 12 boys and 3 girls alone in the park also 6 boys and 12 girls with their guardians, during two hours from 9 to 11 am, in the afternoon of the same day there were 72 children in the park from both genders, 35 of them were alone and 37 of them were supervised by adults.

Figure 3.49: Tuwîmelîk park and playground

On the second day the number of children alone was more than the number of them with guardians in both morning and afternoon. In the afternoon as it has been shown in the graphs (figure 3-50 and 3-51), the number of boys that were alone reached 28 children, which is the highest number in both different times and in both genders, alone and with guardians. Also the lowest number in the graph for the same day is boys which were alone in the morning. The third day of the observation has been done in 7-9-2020, on this date the highest number of children in the park was the girls who were with guardians in the afternoon, and the lowest number was the boys with guardians in the morning which is 2. On the fourth Monday, 32 boys came to the parks in the afternoon for two hours, which is the highest number of children on

this day. The lowest number of children were 2 boys with their parents in the morning.

Figure 3.50: Numbers of children in Tuwîmelîk park and playground each monday for one month, in the morning
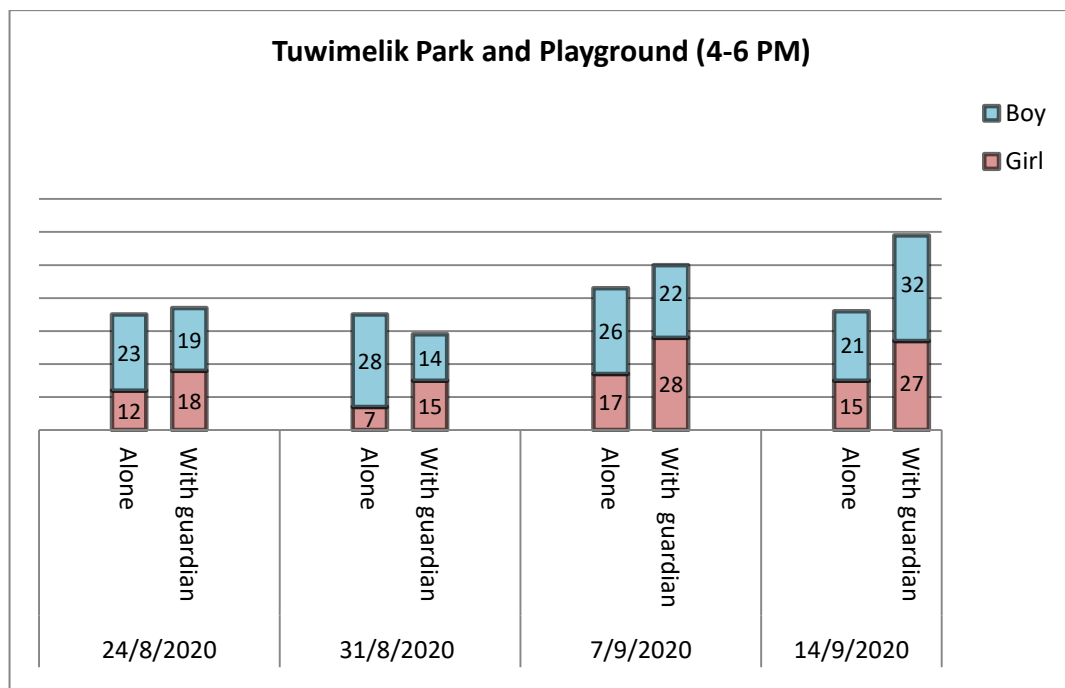
Figure 3.51: Numbers of children in Tuwîmelîk park and playground each monday for one month, in the afternoon

Fereydûn park and playground
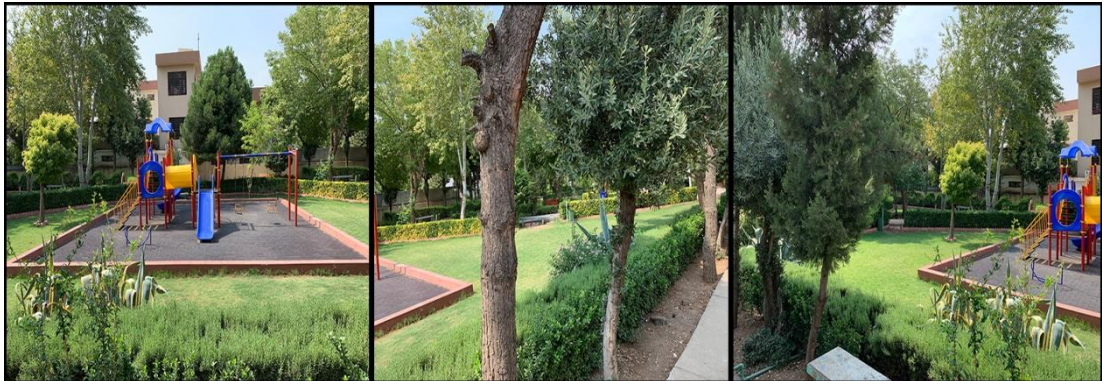
Figure 3.52: Fereydûn park and playground in the mornings

Figure 3.53: Fereydûn park and playground in the afternoon

The gate of this park is on one of the main streets in the neighborhood (see figure 3-54), the area of the park is not large enough but it has a lot of visitors because of two reasons, first, its location and then that playground which is located in the middle of the park. The observation has been done in this park on all Tuesdays in the month, for two times.

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Figure 3.54: Fereydûn park and playground

On the first day of the observation between 9-11 am, 16 children were seen in the park, 8 of them were girls and the others were boys, 10 of these children were supervised by adults. In the three other days of the observation, the highest number of children that has been observed in the morning was the number of boys on the third Tuesday, which are 7 alone children. About the highest number of children in the afternoons of these three days, it was also on the third Tuesday with 14 girls with their guardians, and lowest was 2 boys with their parents on the last day (see figure 3-55 and 3-56).
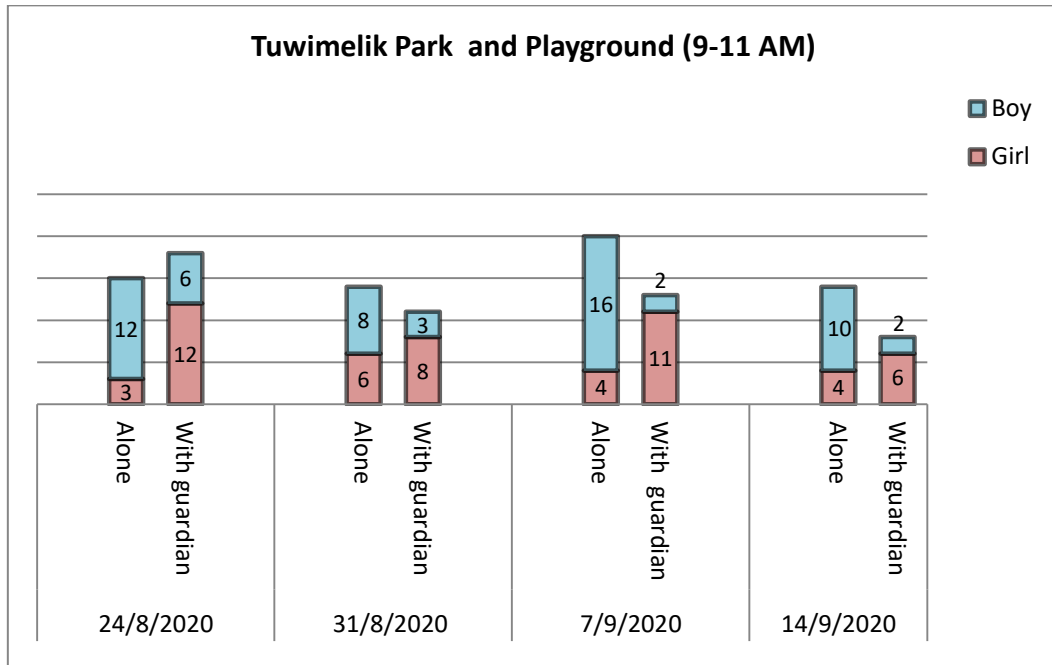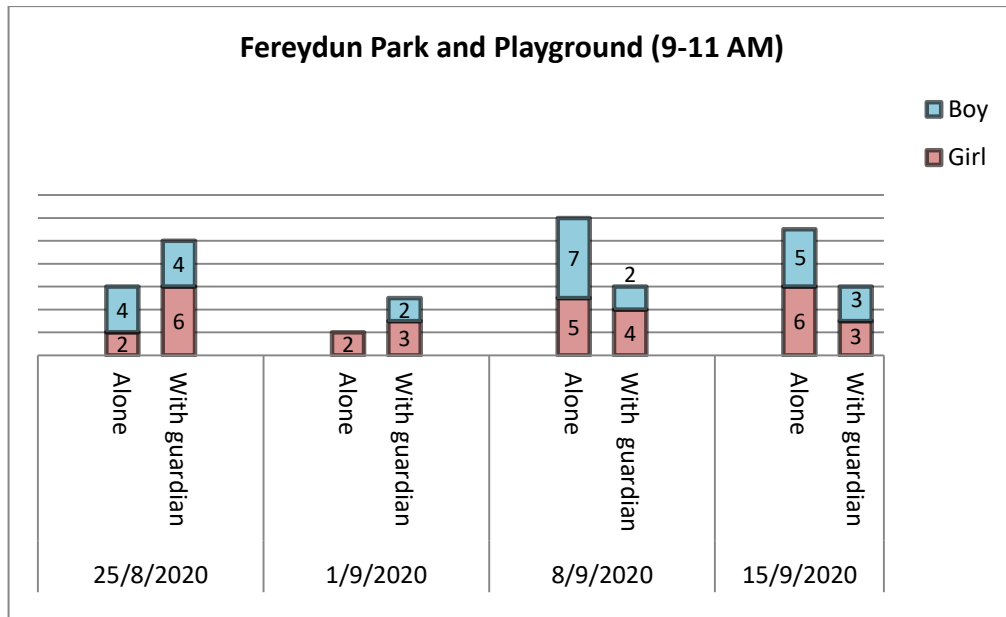
Figure 3.55: Numbers of children in Fereydûn park and playground each tuesday for one month, in the morning
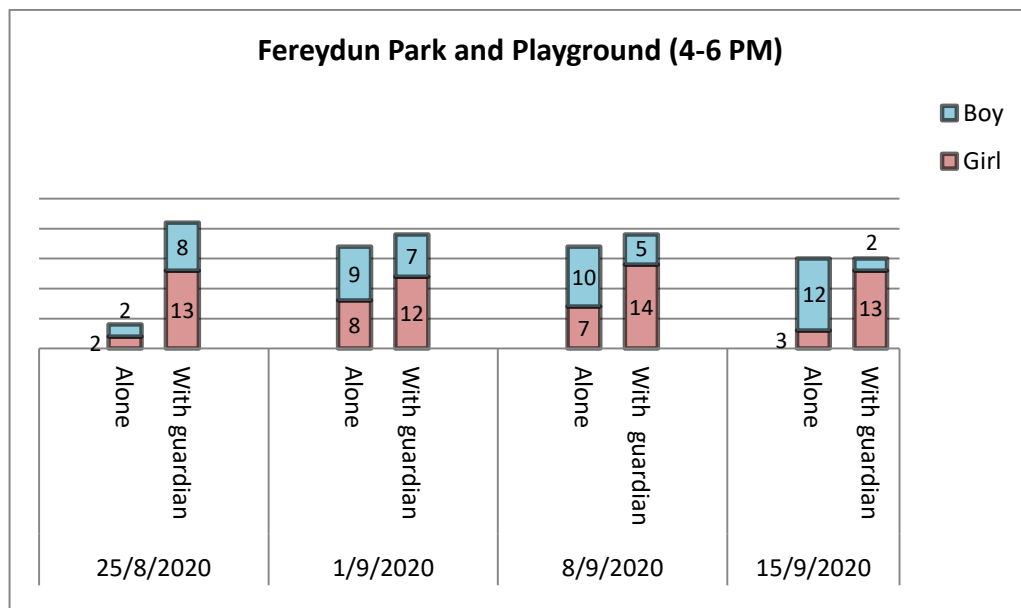
Figure 3.56: Numbers of children in Fereydûn park and playground each tuesday for one month, in the afternoon

Local street-Part A

For observing children in the local streets accurately, the neighborhood has been divided into two parts, Part-A and Part-B. In the first part the observation has been

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done on Wednesdays during a month, two different times a day. Part-A includs the local streets in the west side of the neighborhood (see figure 3-57).

Figure 3.57: Part-A of the neighborhood

There are a large number of children who are playing on the street in Hewareberize neighborhood. On the first day the largest number of children in both different times was 16 that were boys who were outside alone in the afternoon, but the lowest number was 2 and they were two girls alone on the streets in the morning time. For the second Wednesday, in the morning there was only one girl in the morning with her guardian, and 5 other children alone on the streets, 2 girls and 3 boys (see figure 3-60). Also in the afternoon of the same day the number of girls were not increased too much, but the number of boys who were alone reached 18. On the third day of

the observation, there were no girls alone in the morning and no boys with guardians in the afternoon; the number of girls and boys who were alone were equal in the afternoon, which is 15.

Figure 3.58: Street Part-A in the mornings

There were not too many differences between the morning of the third Wednesday and the forth one, as well as between the afternoons. The noticeable fluctuations can be seen between the children who were alone and those who were supervised by adults, in the afternoon of the two last days of the observation (see figure 3-61).

Figure 3.59: Street Part-A in the afternoon
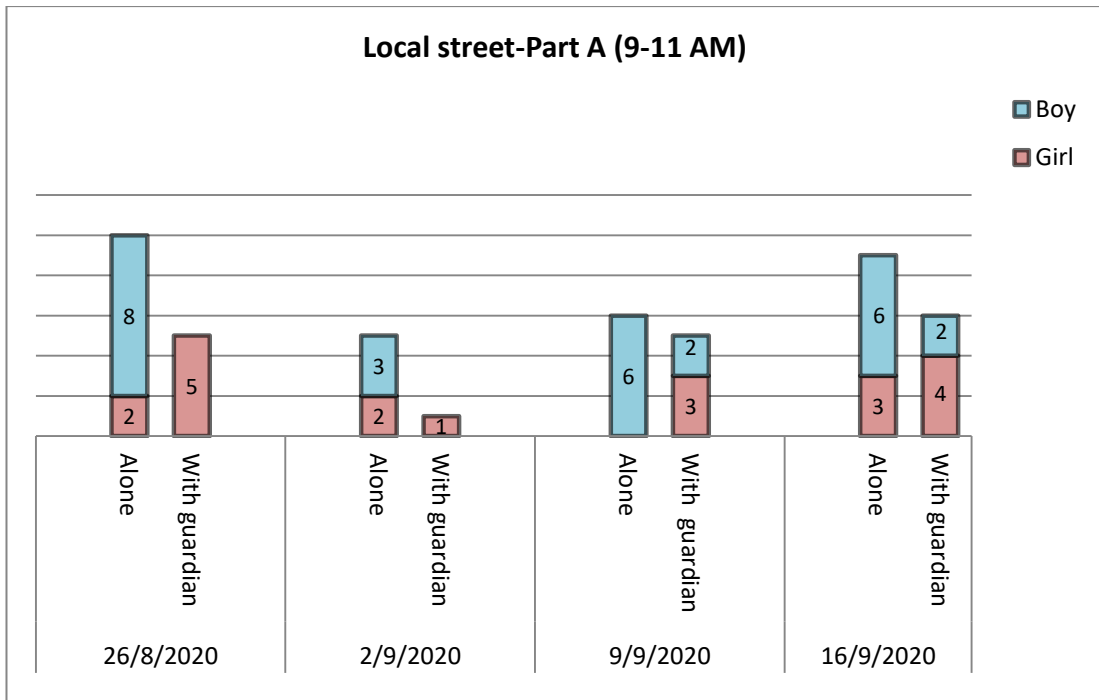
Figure 3.60: Numbers of children in local street-Part A, each wednesday for one month, in the morning
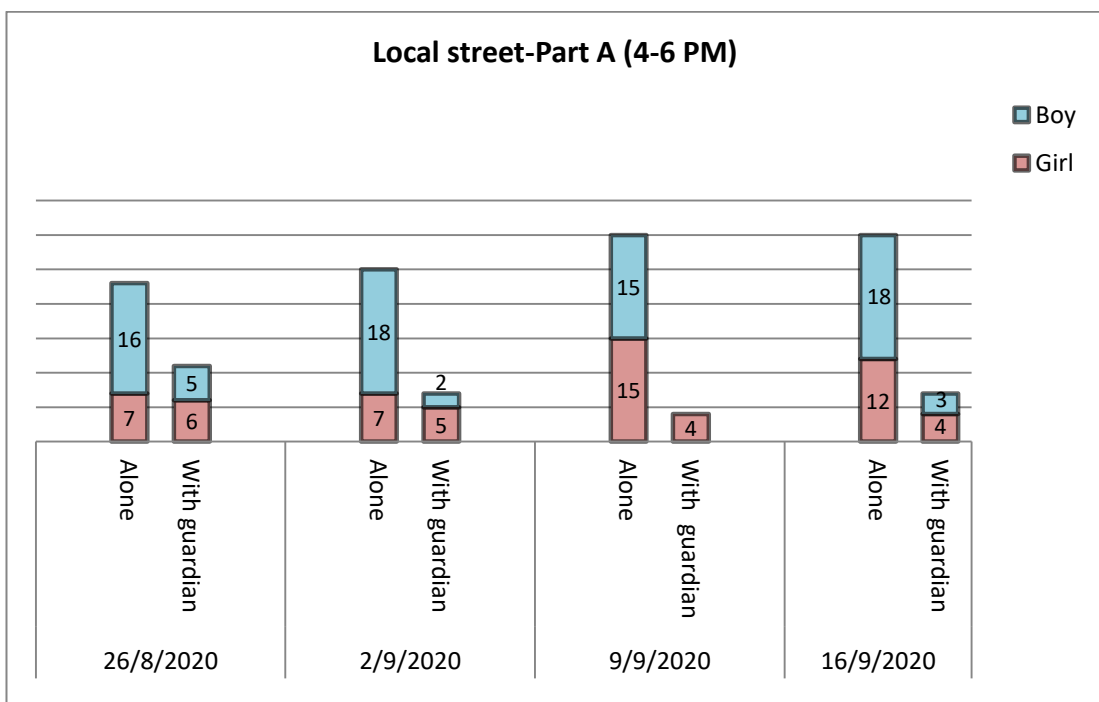
Figure 3.61: Numbers of children in local street-Part A, each wednesday for one month, in the morning

Local streets-Part B

The second part of the neighborhood is Part-B, which includes those local streets in the east of the neighborhood (see figure 3-63). This part has been observed on Thursdays, for four weeks, and two times a day. During the observation, a clear difference can be seen between the number of children in the mornings and afternoons. For this month the highest number of children in the mornings was 15, which were those boys who were alone outside on the first day of the observation, and also those girls who were alone on the second day of the observation (see figure 3-64).

Figure 3.62: Street Part-B in the morning

While the highest number of children in the afternoons was 83 children on the second day of the observation who were boys and they are alone without any guardian. In the graph (figure 3-65) a great fluctuation can be noticed between those who were alone outside and those with guardians.
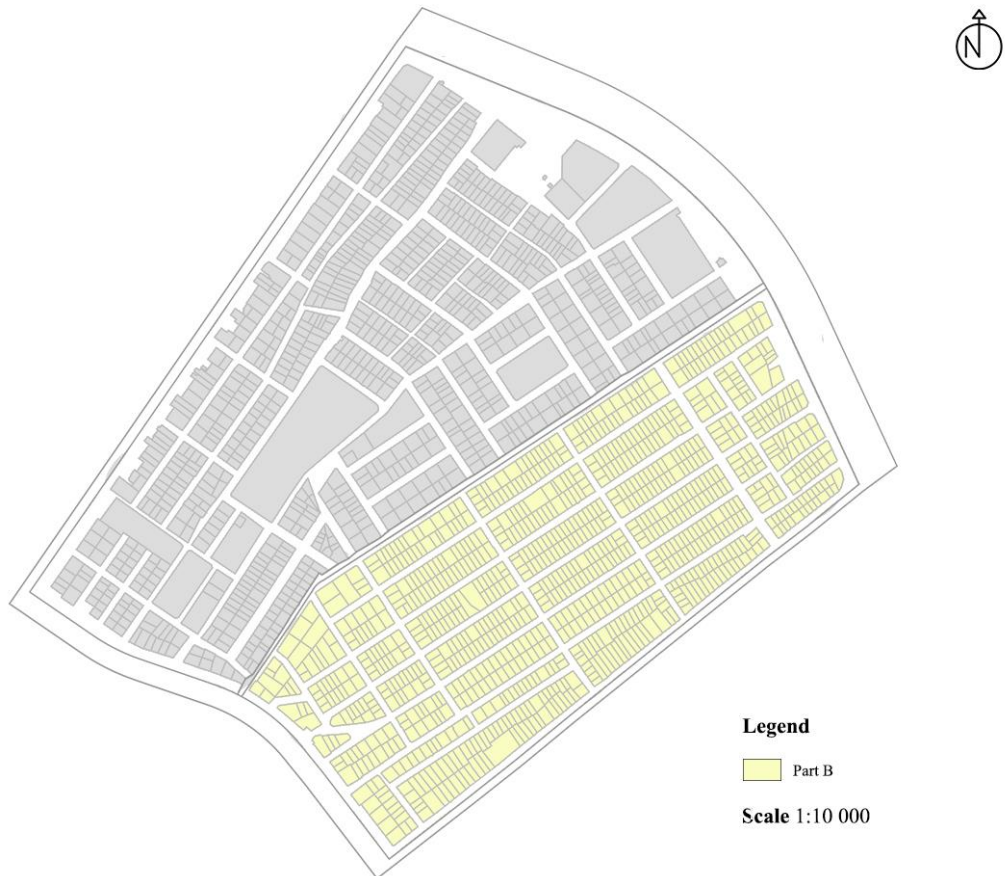
Figure 3.63: Part-B of the neighborhood
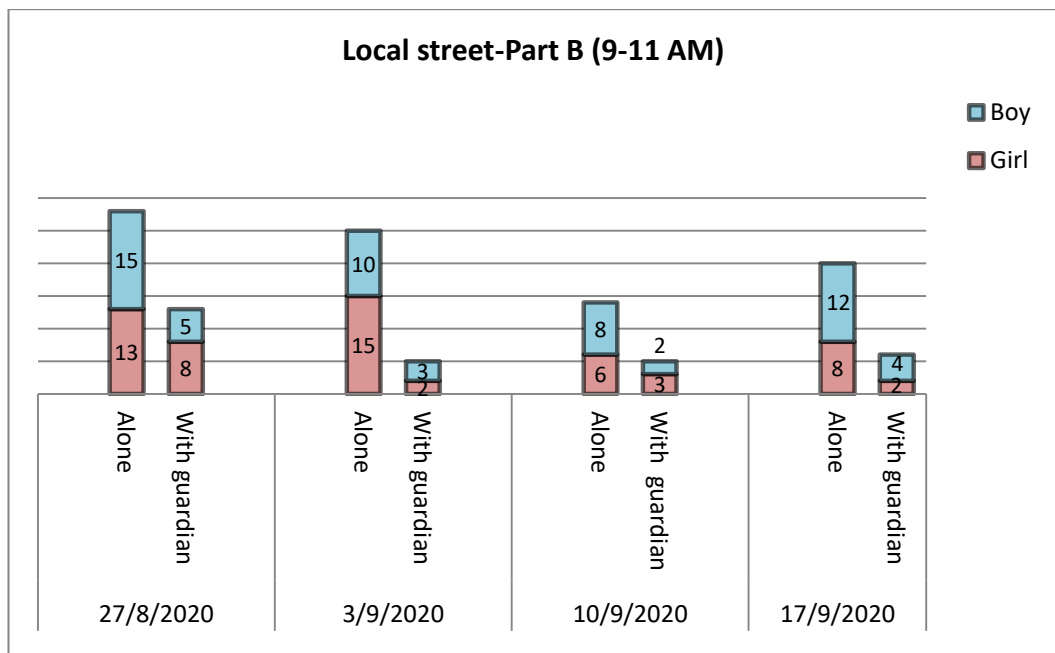
Figure 3.64: Numbers of children in local street-Part B, each thursday for one month, in the morning

Local street-Part B (4-6 PM)

Boy
Girl

	27/8/2020		3/9/2020		10/9/2020		17/9/2020	
	Alone	With guardian	Alone	With guardian	Alone	With guardian	Alone	With guardian
Boy	74	11	83	4	42	6	53	9
Girl	33	14	59	6	25	2	37	6
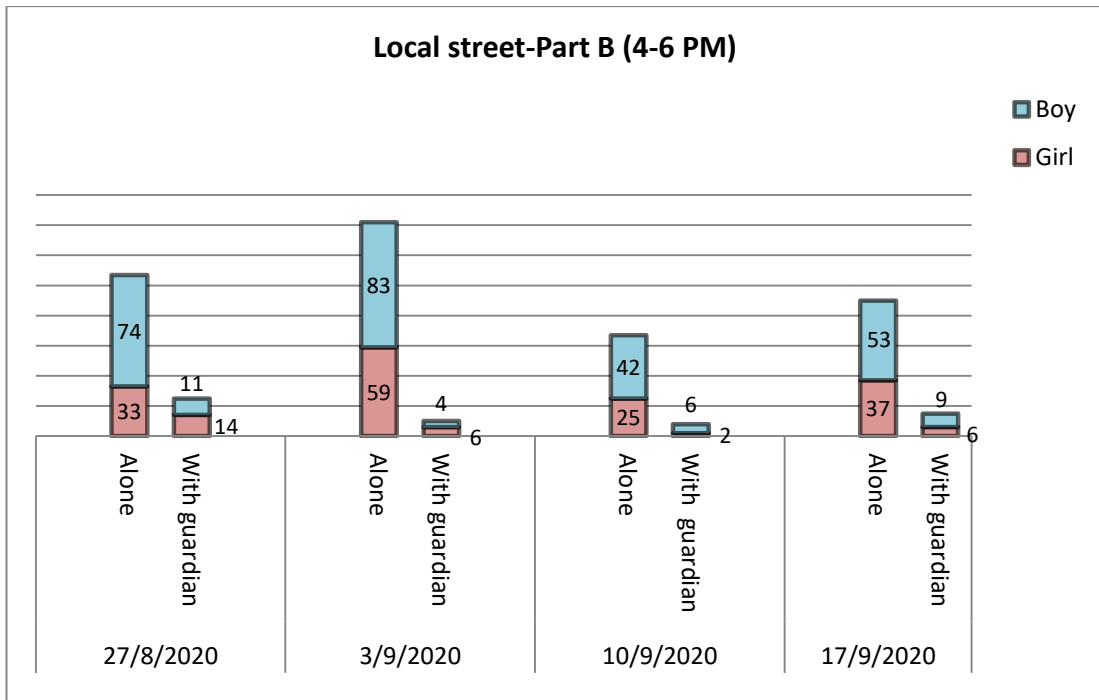
Figure 3.65: Numbers of children in local street-Part B, each thursday for one month, in the afternoon

Figure 3.66: Streets Part-B in the afternoon

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Findings

At the end of the observation, those data that have been collected in several days for each specific place have been summed in the two different times of the days, one of them is numbers of children in the morning times from 9 to 11 Am (see figure 3-67) and the other is in the afternoon from 4 to 6 Pm (see figure 3-68). According to this observation, some important points have been found:

- Total number of children in the morning (9-11 Am) versus number of children in the afternoon (4-6 Pm):

During the observation, a big difference between the number of children in the mornings and in the afternoon has been found. In this neighborhood afternoon is the best time that most of the children go outside, play together and meet their friends. There are also a few children that go out in the mornings. So 76% of children during this month were outside between (4-6 Pm) and 24% of them were outside between (9-11 Am).
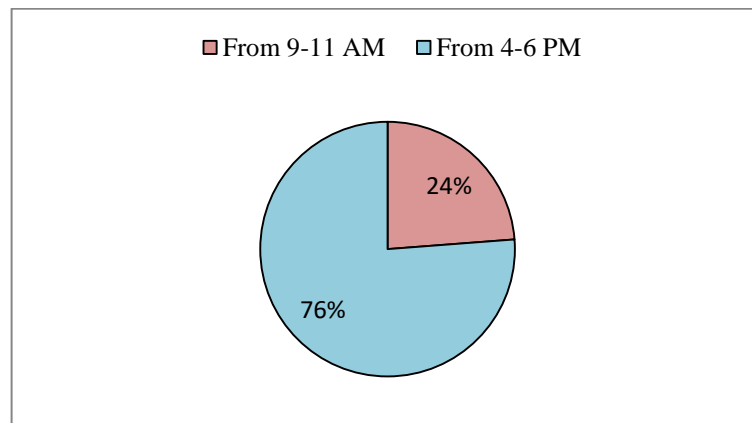
Figure 3.67: Percentage of children in (9-11 Am) vs. children in (4-6 Pm)
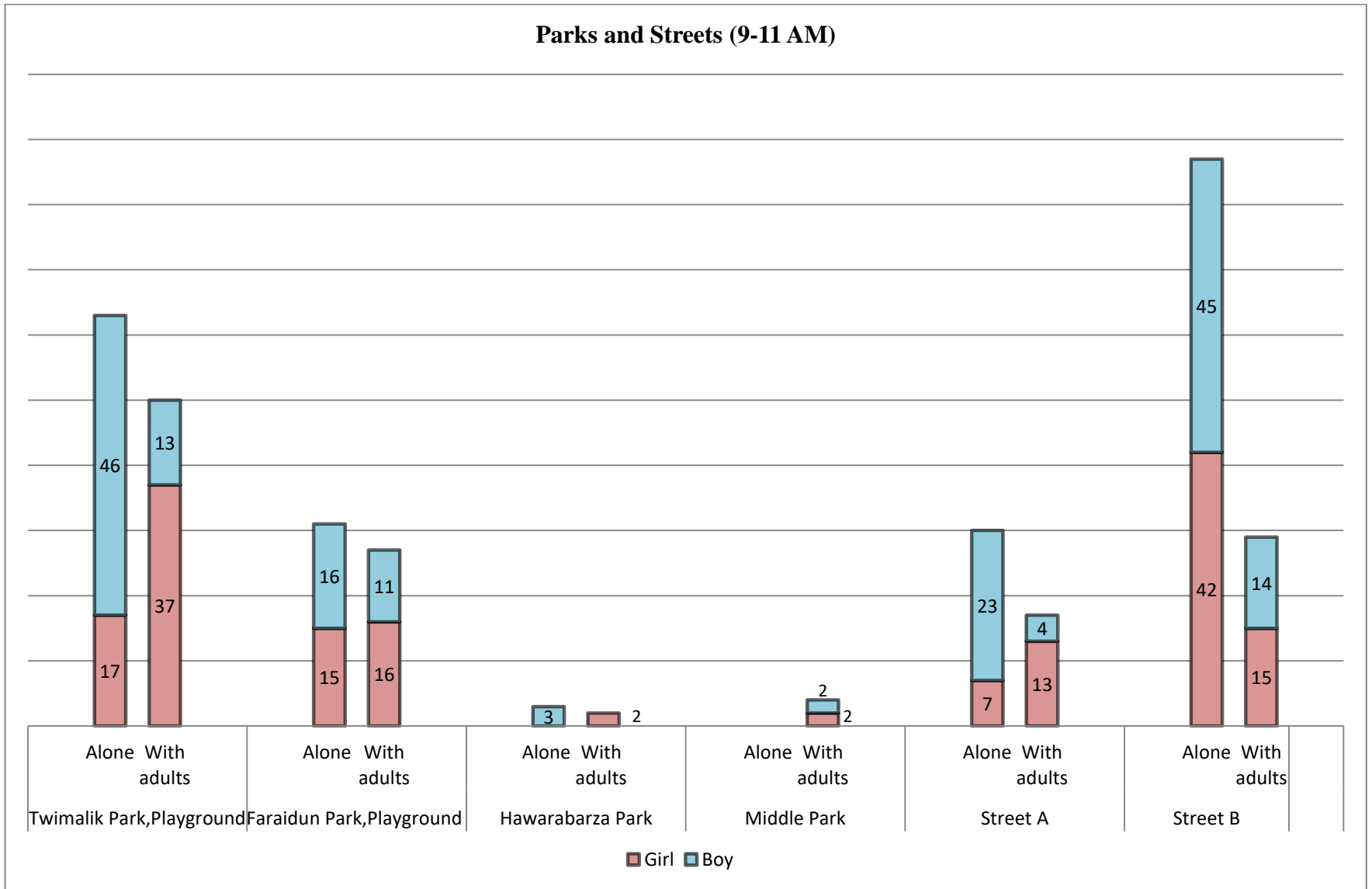
Figure 3.68: Total number of children in parks and streets in the mornings
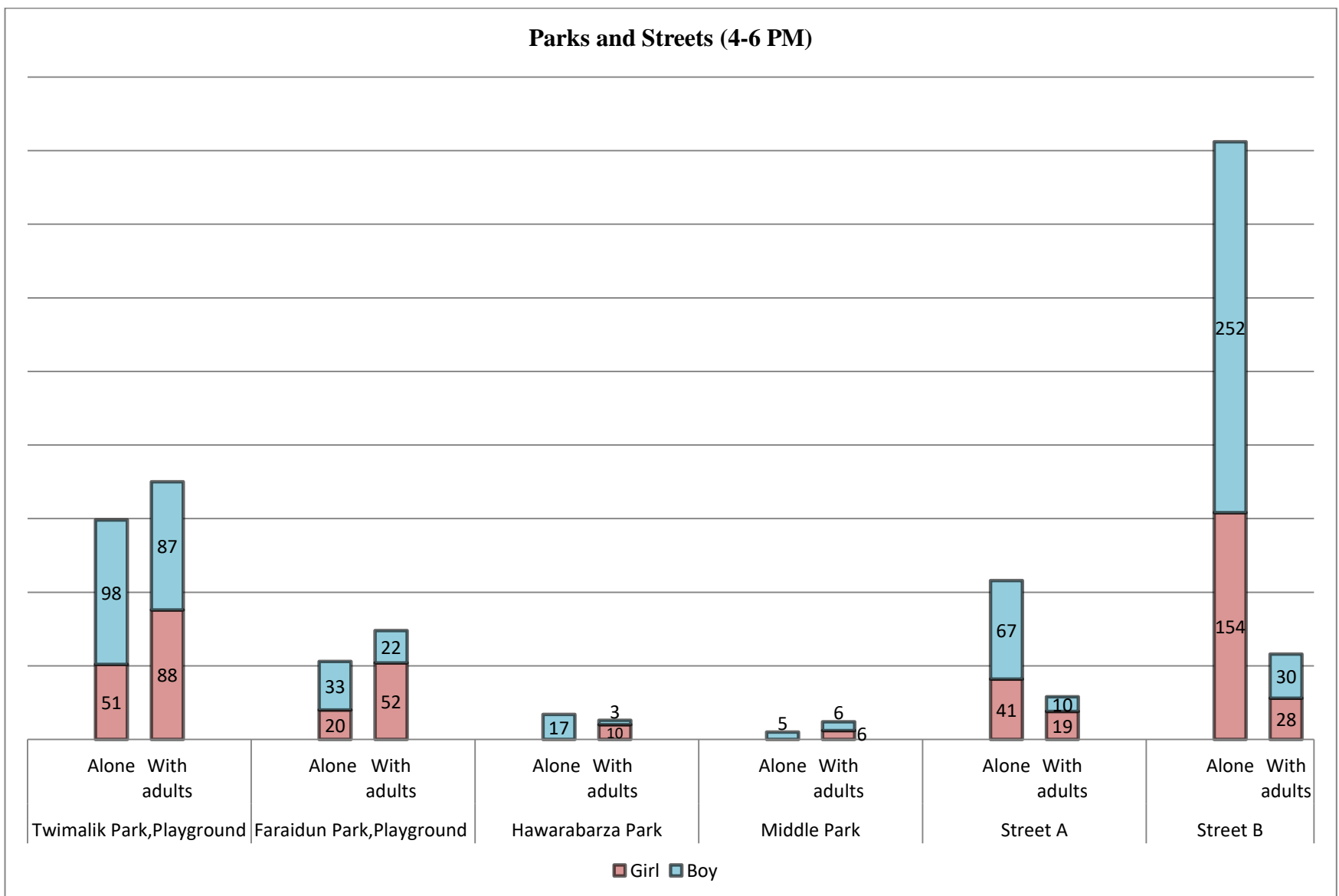
Figure 3.69: Total number of children in parks and streets in the afternoon

- Total number of girls versus boys in the six designated locations:

It has been found that numbers of boys outside are more than girls but the difference is not too much and the percentage of boys outside is close to the percentage of girls outside in both morning and afternoon times.
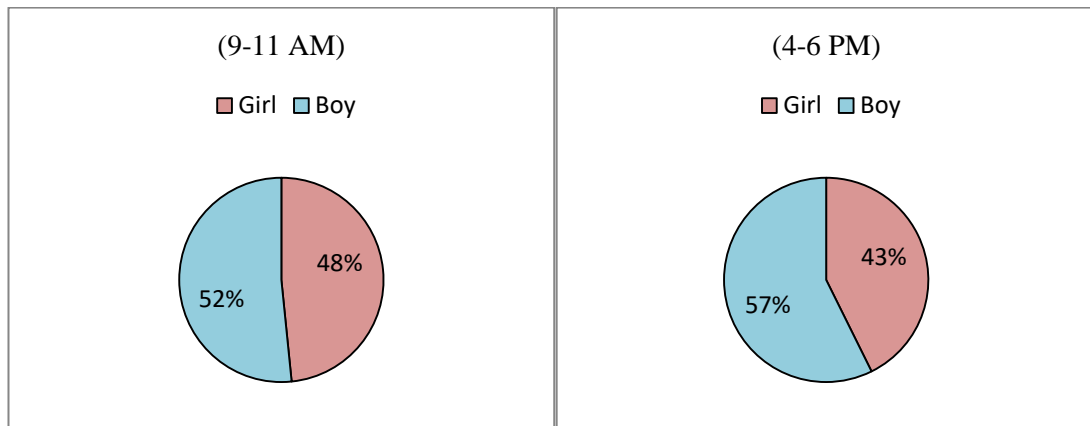
Figure 3.70: Total number of girls vs. boys in the six designated locations

- Total number of children who were alone versus those who were with guardians:

As it has been observed, children who were alone outside are more than children who were supervised by adults in both morning and afternoon times. The percentage of children with carers in the morning is 62%, while those children who were alone outside and move independently in their neighborhood are occupied 38% of the total children. In the afternoon these numbers are nearly the same, 33% of children were out with their parents or adults, and 67% of them were alone outside.

(9-11 AM)	(4-6 PM)
■ Alone ■ With adults	■ Alone ■ With adults

(9-11 AM)	(4-6 PM)
38% 62%	33% 67%
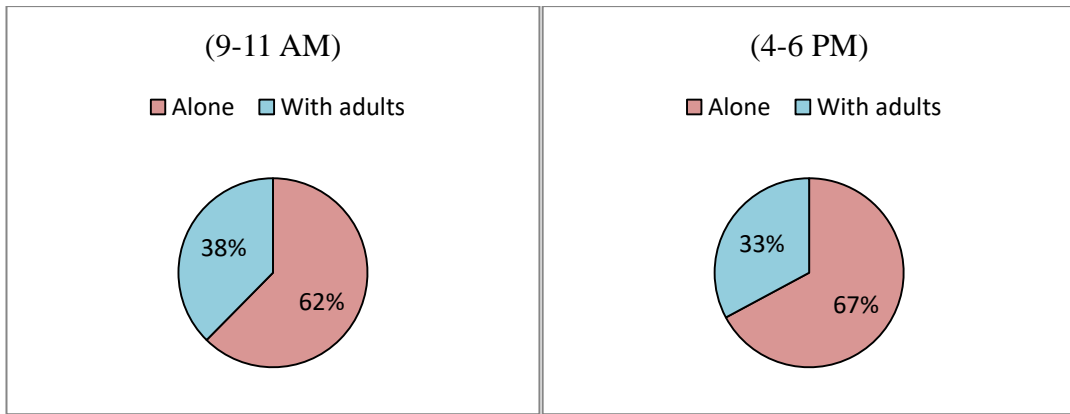
Figure 3.71: Total number of children who were alone vs. with guardians

- Total number of girls who were alone outside versus boys who were alone outside:

There is also a difference between children who are alone outside according to their gender, and the number of boys outside alone were more than girls in both morning and afternoon times. Percentage of boys outside alone in the morning is 62% but the girls outside is 38%. For the afternoon these numbers are nearly the same.

(9-11 AM)	(4-6 PM)
■ Girl ■ Boy	■ Girl ■ Boy

(9-11 AM)	(4-6 PM)
38% 62%	36% 64%
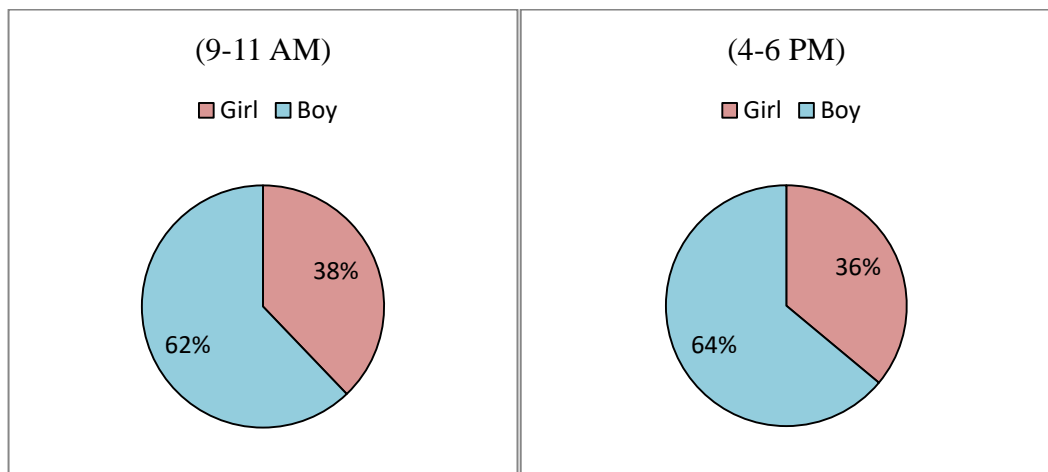
Figure 3.72: Total number of girls who were alone outside vs. boys who were alone outside

- Total number of girls who were with guardians outside versus boys who were with guardians outside:

Number of boys who were supervised by adults are less than girls with their guardians in the mornings and afternoons.
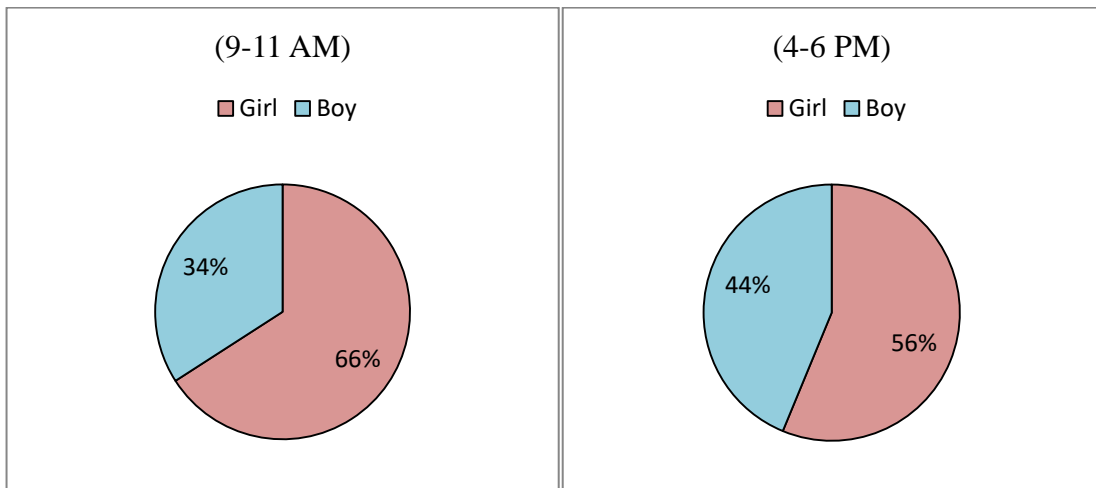
Figure 3.73: Total number of girls who were with guardians outside vs. boys who were with guardians outside

- Total number of children who were alone in parks versus those who were alone on the local streets:

Also there is a difference between the number of children in parks and those in the local streets according to the ones with adults. Children who were alone on the local streets near to their home were more than those children in the parks and playgrounds, and this difference is increased in the afternoons.
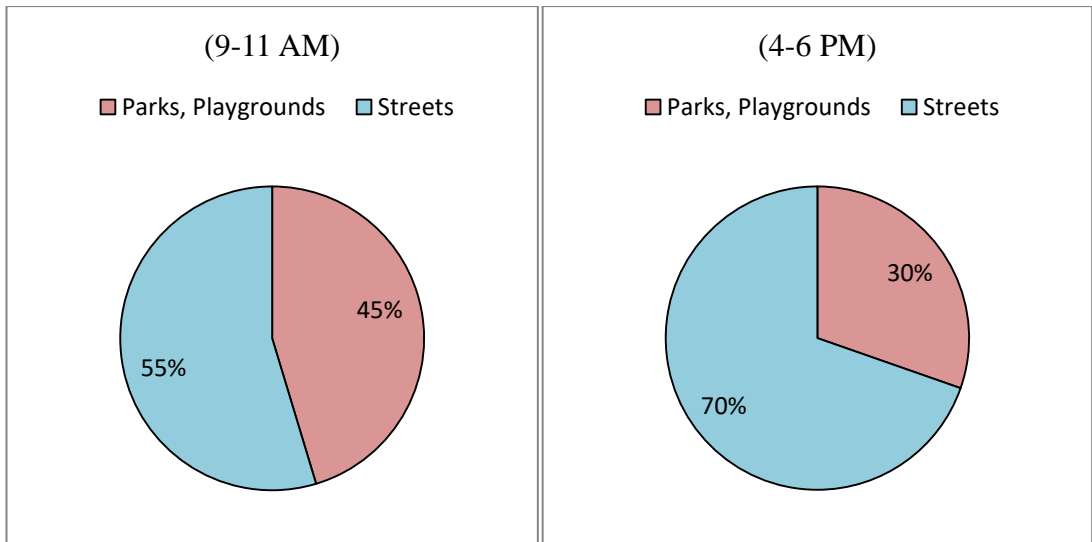
Figure 3.74: Total number of children who were alone in parks vs. those who were alone on the local streets

- Total number of children who were with guardians in the parks versus those who were with guardians on the local streets:

In contrast, the number of children in the parks with their guardians is considerably more than the number of children in the streets with adults, especially in the afternoons.
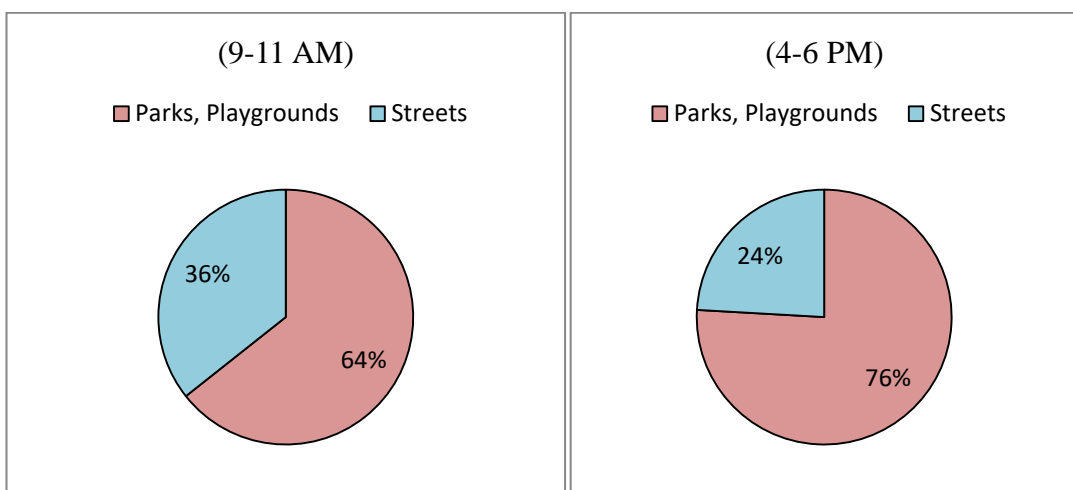
Figure 3.75: Total number of children who were with guardians in the parks vs. those who were with guardians on the local streets

-   Total number of children who were in the parks which have a playground versus children who were in those parks that do not have a playground:

As it has been observed, the number of children in the parks that have playgrounds, are obviously more than in those parks without playgrounds.
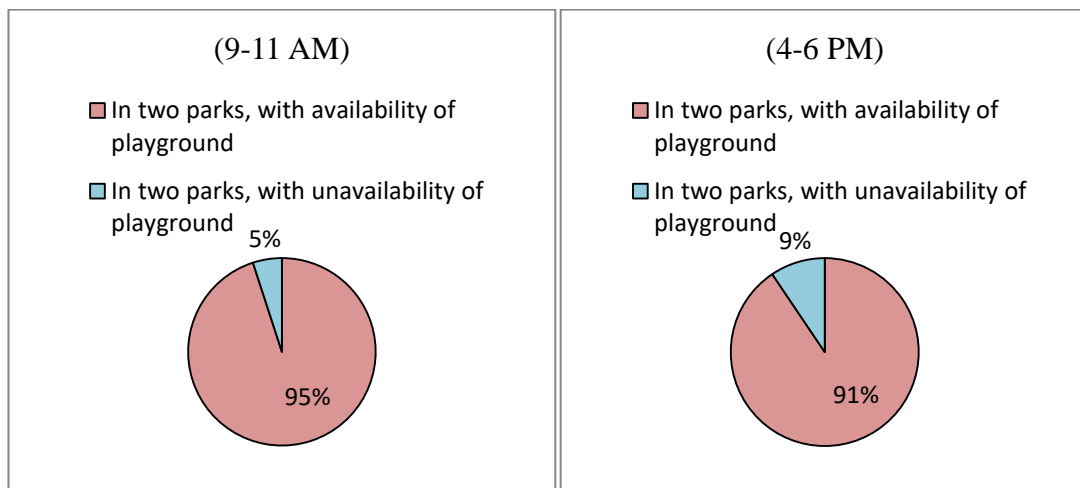
Figure 3.76: Total number of children who were in the parks which have a playground vs. children who were in those parks that do not have a playground

3.5 Evaluation of the case study

In this section, all the information about the case study that have been obtained by the previous analysis will be evaluated on each principle of child friendliness of a community that are defined by Child Friendly City initiative of UNICEF. There are 12 principles about having an adequate and appropriate life for children. Each principle will be evaluated according to the findings that have been obtained at Hewareberize neighborhood.

3.5.1 Decision making

This is one of the principles of Child Friendly Cities, as it has been explained in previous chapters, this principle defines that children should have a right to participate in decision making about their cities. In this study, for evaluating this

principle in the Hewareberize neighborhood two methods have been used (see table 3-1), which are interview and observation.

The sixth question in the interview has been used to evaluate this principle in the neighborhood (see figure 3-77). In this question children have been asked about their allowance to participate in decision making about their community or neighborhood. 55% of the participants have determined that they have never participated in any decision process that directly affects them. While 45% of them have responded that they participated in those issues.

Principle 1: Participation of children in decision making about their city.

Interview: Question 6\ Do you participate in any decision processes when a park/playground construct in your neighborhood or before changing something in your school?
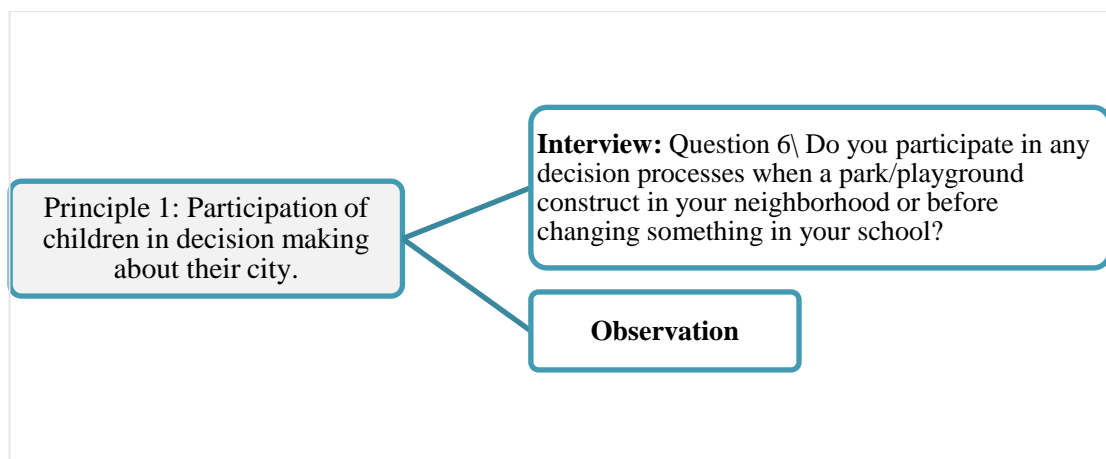
Observation

Figure 3.77: The methods for evaluating first principle of child friendly cities

Also according to the observation, children in the whole city have no ability to involve in decision making about their city in general, and they are ignored by the government. While recently in some private sectors such as private schools, participation of children or students in decision making about their school are taken into consideration.

As a result, for this neighborhood, participation of children in decision making about their neighborhood is not concerned too much and also it is not totally ignored, but a higher number of children have no allowance to participate.

3.5.2 Expression of opinion

Children have a right to express their opinions freely about their city and those subjects that affect them. This is a fundamental principle of child friendly cities that children should have the opportunity to tell their ideas and opinions about their city. In this study, according to the observation children's opinion about their city is not taken into consideration in general. However, this principle has been downsized to a neighborhood scale, children were asked about if their parents ask for their opinion about a decision that affects them, 60% of them mentioned that they are allowed to tell their thoughts on issues related to them (see figure 3-78). It shows that more numbers of children in this neighborhood can express their view and feelings on related topics, and it is clear that children's ideas and opinions have an important role in any decision makings, because they see the situations in a different perspective.

Principle 2: Children should be free to indicate their opinion about their city.

Interview: Question 9\ Do your family usually ask your opinion about a decision that directly affect you or related to you?

Observation
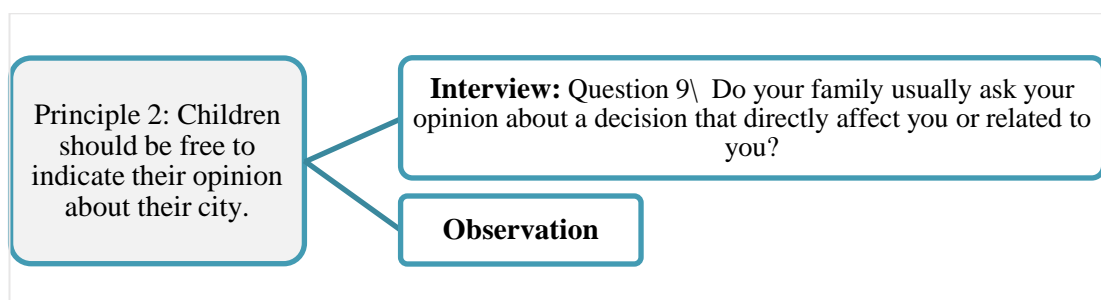
Figure 3.78: The method for evaluating second principle of child friendly cities

3.5.3 Participation in community

This principle is participation of children in community, social life, and family. Children have a right to be valued and respected in their community, and to be

involved in the family gatherings and events. Children of Hewareberize neighborhood have been asked two questions in the interview in order to evaluate this principle (see table 3-1).
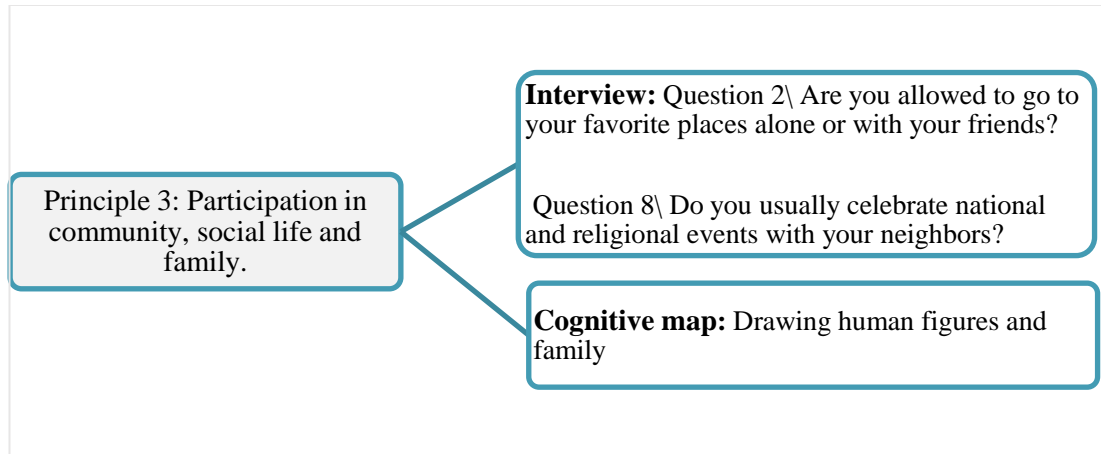
Figure 3.79: The methods for evaluating third principle of child friendly cities

In question 2, children have been asked about their allowance to meet their friend, it helps to realize if the children in this are allowed to socialize with others in their community (see figure 3-79). As it has been mentioned in the previous section, most of the children in this neighborhood are not allowed to go outside with their friends alone, which reduces their connection with other people in their community and their interaction with people outside. Nearly ¾ of children in the Hewareberize neighborhood are not allowed to meet their friends and go outside alone with them.

In question 8, children have been asked about their availability in national and religional events and events with their neighbors, in order to know their interaction and connection with their neighbors or people in their community and neighborhood. As it has been explained previously, ¾ of the children in the interview have mentioned that they are not doing the events and celebrations with their neighbors.

As it has been mentioned in the method of cognitive map, most of the children drew human figures, some of them are their own selves or/and their families, or some of them are their friends. Sometimes they have just drawn random and unknown people. So 9 of the children have mentioned more people in their improved neighborhood. They drew kids who are playing together or with their family. In the existed version of the drawings, children drew kids who are looking outside from the windows. These factors show that children in this neighborhood want to have more opportunity to integrate and socialize with people.

3.5.4 Getting essential services

Essential services such as education, shelter, and health care are one of the essential elements of child friendly communities and cities. Children should have a shelter to live in, a place to learn, and somewhere to provide a continuum of care. To evaluate this principle in the Hewareberize neighborhood, two methods have been done: physical analysis and documentation, and cognitive map (see figure 3-80).
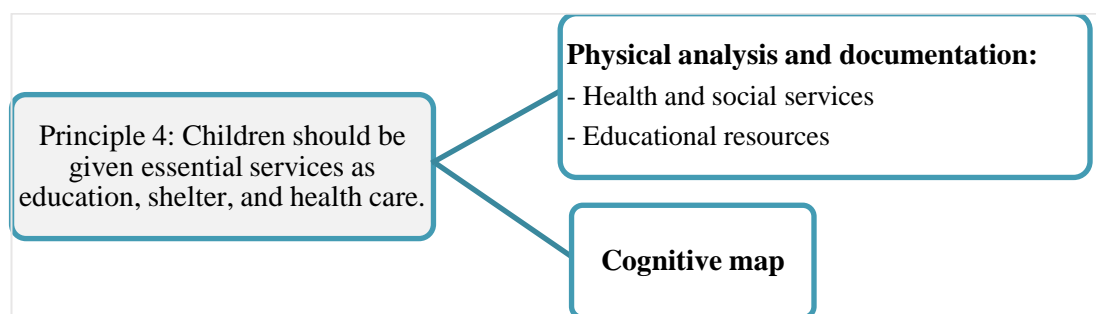
Figure 3.80: The methods for evaluating fourth principle of child friendly cities

In the method of physical analysis, two dimensions have been used: Health and social services and educational resources.

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For the first dimension, as it has been mentioned in the previous sections, the neighborhood has no centers of urgent care inside the neighborhood boundary. But within 800 meter distance from the center of the neighborhood there is only one urgent care center. The average distance from the households to this urgent care center is 632.5, and according to the scoring methods that have been explained above, this distance has got 2 points out of 4. It shows that this neighborhood has an urgent care center within a walkable distance but it has got 2 points for its walkability.

In the second dimension, four measurements have been done: first, from the households to primary schools, which there are four primary schools within the designated distance, the average distance to primary schools is 569.64 meter and it has got 2 points according to the scoring method; second, from the household to the middle schools, as it has been explained in the previous sections, 3 middle schools are existed for this neighborhood and the average distance to these schools is 603.06 meters, it has also got 2 points; third one is the measurements from the households to child day care services, there are 3 child day care center inside the neighborhood boundary and the average distance to them is 371.86 meters and it is very walkable distance and has got 4 points; the last measurement is to additional educational services, which in this study library has been defined as additional educational service, and there is no library within a walkable 800 meter distance, and it has got zero points. So finally, the average point for the dimension of educational resources is 2 out of 4 (see table 3-13).

Also the method of cognitive map and drawings have been used for evaluating this principle in the neighborhood, as it has been shown above, there are three points that

the children have drawn which are related to essential services: which are home, hospitals, and schools. Nearly all of the children have mentioned their home in their drawings and also every child in the neighborhood has a shelter to live in. Only a few children have drawn schools and child day care centers, and hospital and urgent care have not been drawn by any of the participants.

These findings have shown that children in the Hewareberize neighborhood have shelter to live in, and health care services are in the mediocre distance from them. Also children can get access to educational resources in an average distance, which is walkable and not far to reach.

3.5.5 Getting safe water

Having safe and clean water for drinking is one of the fundamental principles of children friendly cities, the method of observation has been done to find out about availability of drinking safe water for children and all.

Principle 5: Having safe water for drinking.	Observation
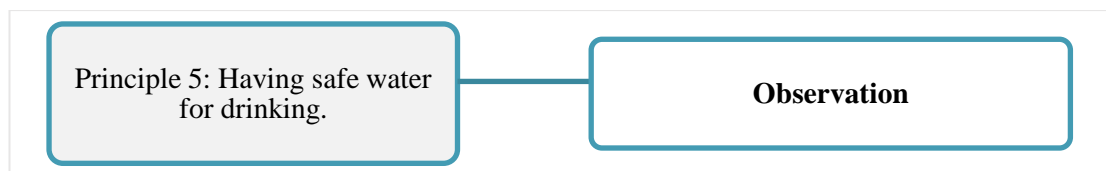
Figure 3.81: The method for evaluating fifth principle of child friendly cities

According to the observation and to Kurdistan Region Statistics Office (2019) and International Organization for Migration (2018), water quality in Sulaymaniyah city is very safe for drinking. 98.9% of households in Sulaymaniyah city have safe water for drinking. It shows that children in this neighborhood have safe water to drink.

3.5.6 Security

Children have to be secure in their neighborhood; they have a right of being secured from violence, abuse, and exploitation. Three questions in the interview have been used to evaluate this principle in order to know children's experience in the neighborhood and know the truth from them directly. Also four indicators in the dimension of safety, protection and mobility have been used in physical analysis and documentation method (see figure 3-82).
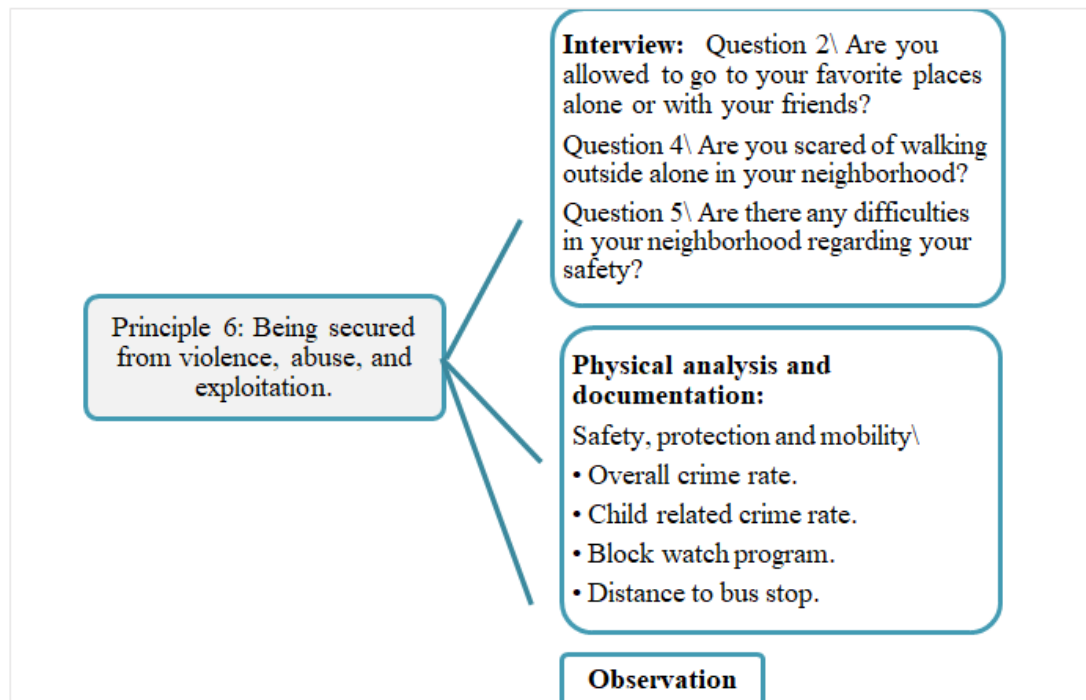
Figure 3.82: The methods for evaluating sixth principle of child friendly cities

One of the methods that have been used to evaluate this principle is one of the dimensions of physical analysis and documentation, which is the dimension of safety, protection, and mobility. Four indicators have been used in this dimension:

Overall crime rate, as it has been mentioned above, the rate of overall crime in the neighborhood is 0.0287, it has got 4 points and shows that overall crimes in this

neighborhood is at a very low rate. Secondly, child related crime rate in this neighborhood is zero, it means the neighborhood is very secure for children and all residents (see table 3-13).

Then about the block watch program, the neighborhood has no block watch program in general, so this indicator has got zero points. There is another indicator that has been used for evaluating this principle, which is measuring the distance from households to bus stops in the neighborhood, because with the closer bus stops, children will be more secure and protective. There are 5 bus stops in this neighborhood and the average distance to them is 527 meters, which according to the scoring method has got 3 points.

In the interview, the children were asked about their allowance to go to their favorite places alone without supervision of an adult. It shows the security of the neighborhood in the parent's view points, because allowance of children to go outside alone can be connected with the security of the neighborhood. In this question 70% of the children mentioned that they are not totally allowed. Also the children were asked if they are scared of walking outside alone without supervision of an adult or not. This question helps to understand if there is something in the neighborhood that affects them and makes them insecure outside, it also shows the security of their neighborhood. In this question, the children's responses were divided equally, half of them said yes and the others said no. The children also were asked another question, which is about the existence of those difficulties they experienced in this neighborhood, in order to know if there is any difficulty related to violence, abuse, and exploitation against them. In this question, the children were not mentioned any difficulties that caused by intentional human actions or that occur

with purposeful intent such as: crime, sexual assault and rape, and so on; nearly half of the children have defined that there are no difficulties in their neighborhood.

During the observation, important point has been found, which is the difference between children who are allowed to be alone on the local streets versus in the parks and playgrounds, children who were alone on the local streets near to their home were more than those children in the parks and playgrounds, and this difference is increased in the afternoons (see figure 3-74).

Children in this neighborhood are entirely secure, because the crime rates are very low, and the locations of bus stops are very close from each household which helps children to reach their, in the closest distance. There is no block watch program in this neighborhood, and it is a weak point related to children's security. Also as it has been observed parents do not allow their children to go far from their homes and to go to the public parks which are not very close to them, maybe it is just because the risk aversion and overprotection and also because the parental fear which is defined as a main obstacle to independent movement of their children in the neighborhoods, that is the reason why a high number of children are outside alone on the streets more than those who are alone in the public parks, their parents want to close to them and watching them directly while they are playing.

3.5.7 Safety

Another principle of Child Friendly City is safety; children have a right to be safe. They should walk through their neighborhood safely, for evaluating this principle, all of the four methods have been used: One of the dimensions of physical analysis and documentation; question 2, 4, and 5 in the interview; cognitive map; and observation (see figure 3-83).
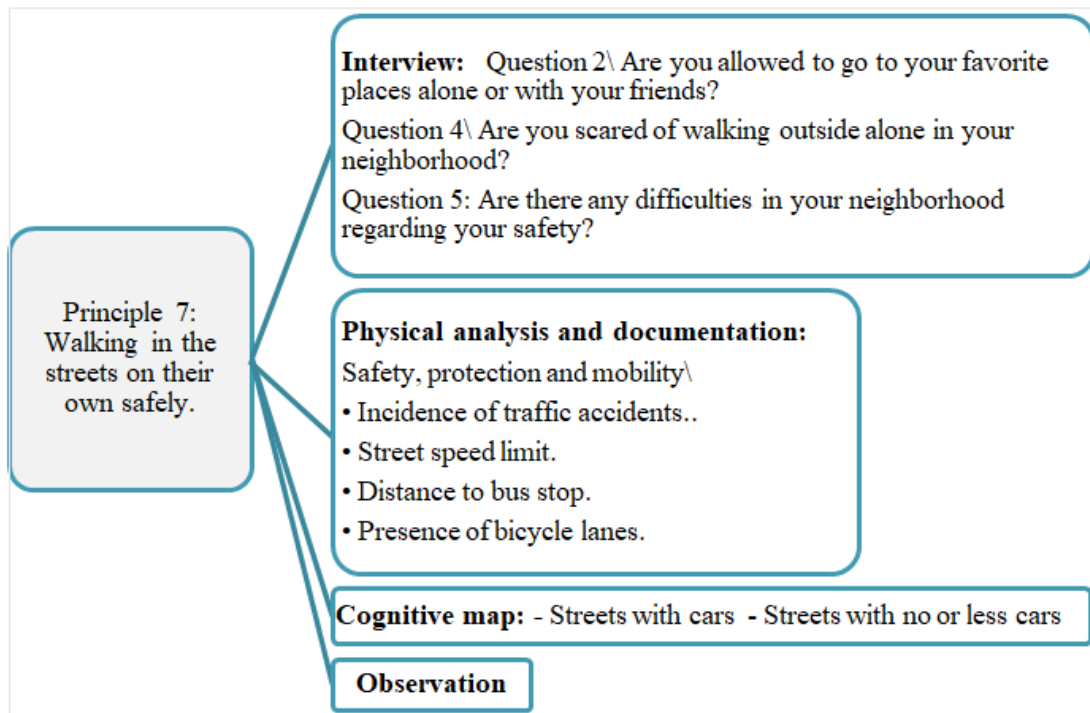
Figure 3.83: The methods for evaluating seventh principle of child friendly cities

In the physical analysis and documentation, incidence of traffic accidents was measured and it is 0.714, which has got 3 points. For the street speed limit, in this neighborhood the speed limit of 74% of the streets is 40 km/h or less, and it is approximately safe for children and all, and it has got 3 points according to the scoring method that has been mentioned before. Distance from the households to the bus stops is also a significant factor that affects children's safety, shorter and more walkable distance is surely safer for children; there are 5 bus stops in this neighborhood and the average distance to them is 527 meters, which according to the scoring method has got 3 points. Another indicator in this dimension that is related to safety of children is the presence of bicycle lanes, children in general prefer doing cycling outside their home, and if they have a separated lane for cycling in the streets it will be safer for them, but in this neighborhood there is no specific lane for cycling.

In the interview children were asked three questions related to this principle, in question 2, they were asked about their allowance to go to their favorite places alone without supervision of an adult. It shows the safety of the neighborhood in the parent's view points, because allowance of children to go outside alone is connected with the safety of the neighborhood. In this question 70% of the children mentioned that they are not totally allowed. In question 4, children were asked if they are scared to go out alone or no, so it helps to understand the safety of the neighborhood in the point of view of the children themselves and to get information from their experiences in the neighborhood, for this question half of the children were mentioned that they are not scared of walking outdoor alone. Also in the question 5, children were asked about their experiences in their neighborhood to tell those difficulties that have faced them regarding to their safety, 55% of them thought there are no difficulties when they go through their neighborhood, 35% of the participants defined that traffic problems and a high number of cars make difficulties for them when they want to go out, 5% of them mentioned the risk of street dogs, and the other 5% determined fighting between other children as a difficulty for them.

In the method of cognitive map or in children's drawings, streets can be seen in all the participants' drawings, some of them drew the streets with cars and the others drew it with no cars. Mostly, in the existed version of their neighborhood children drew streets with cars, and in the improved version they removed the cars or made them less (see table 3-16).

During observation, it has been found that number of children who were outside alone on the streets and public parks are more than those who were with adults, in both morning and afternoon times, children who were outside alone were nearly 65%

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of the entire children, and most of them were those who were playing on the streets. The important point that has been found during the observation is the difference between children who are allowed to be alone on the street versus those in the parks and playgrounds. Children who were alone on the local streets near to their home were more than those children in the parks and playgrounds, and this difference is increased in the afternoons (see figure 3-74).

At a result, this neighborhood is safe for children on the basis of physical analysis and documentation. But most of the parents do not allow their children to go outside alone and to go far from their home alone, that is why most of the children have mentioned that they are not allowed to go outside alone; in the children's point of view, half of the children thought there is nothing in the neighborhood to afraid of; Also most of the children think about traffic problems and a high number of cars in their neighborhood as a factor that decrease their safety in the neighborhood, also in their drawings they have showed the same things and they want to decrease or remove cars on their streets because children themselves prefer to play on the streets more that playing in the parks and playgrounds according the observation, and boys can be seen outside more than girls.

3.5.8 Meeting with friends

Doing socialization by meeting new friends and playing with them is the right of every child in the world. Children should have opportunities to meet each other in somewhere proper for them; for that reason, in this study distances from households to: parks, playground, sport centers for children, recreation centers, specific swimming pool for children, and big recreational parks were measured, in order to know whether the children in Hewareberize neighborhood have access to those places in a walkable distance or not. It has been found that in this neighborhood

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children have only playgrounds and parks in a walkable distance, and based on the scoring methods playgrounds have got 4 points and parks has got 3 out of 4 (see table 3-13). But about the other places, children have not those places in a walkable distance. So it shows that there are not enough recreational places in the neighborhood within a walkable distance for children to play, socialize, and enjoy with their friends.

Additionally, in this study children's opinion and thoughts are so significant and they are taken into consideration. During the interview, children have been asked about the place or space that they usually meet their friends and play with them in their neighborhood; so their responses have divided into three parts, 35% of them mentioned about streets, 25% said they often meet each other at the parks and playgrounds, and others said nowhere. So it indicated that children just have parks and streets to meet each other, and the lack of recreational areas for children can be clearly seen in this neighborhood.

Children have been asked another question, in order to know whether children's carers or parents allow them to go alone outside and meet their friends or no (see figure 3-84), 70% of them mentioned they are not allowed, so maybe the reason is to take care of their children and protect them or inadequate quality of those places. It shows there are no such trusted recreational places that make parents allow their children to go to.
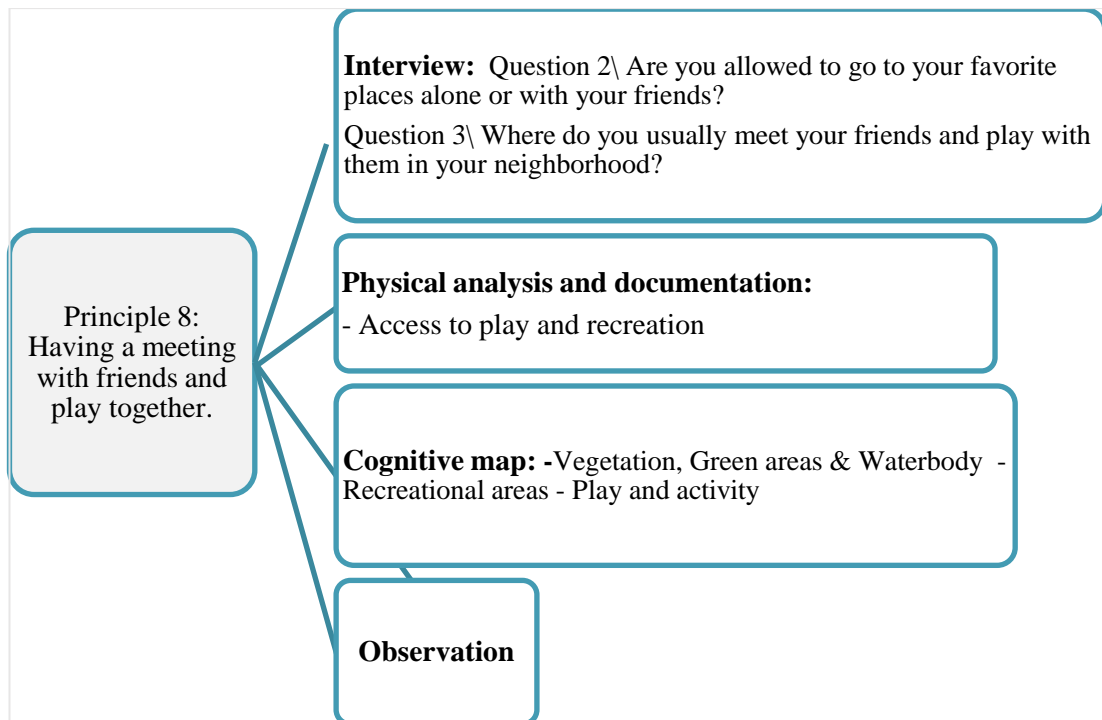
Figure 3.84: The methods for evaluating eighth principle of child friendly cities

In children's drawing, it can be obviously seen that children require more recreational and green areas, as most of the children drew parks, greeneries, flowers, and trees in the improved version of their drawings and it shows the lack of greeneries and colorful flowers around them. Also most of them drew more playgrounds as a way to improve their neighborhoods, and two of them drew cinema as well as a football field. In addition, 15 out of 20 children participants drew people or kids who play together and do different activities in the improved version of the neighborhood (see table 3-17).

Moreover, during the observation it has been found that children prefer the parks which include playgrounds, because 91% to 95% of the children in the parks, which have been observed during a month were spend their times at those parks that have playgrounds, and only 5% to 9% of them chose the parks without playgrounds.

So at the result, these findings have shown that there is a lack of recreational areas for children in this neighborhood, and they do not have enough opportunity to meet their friends and play together, numbers of them do not go out with friends totally, and most of them meet their friends on the streets and play with them.

3.5.9 Having green spaces

Children have a right to have green spaces with flowers and animals, to learn new things and experience the natural world, which benefits their mental and physical health and their well-being. For evaluating this principle, three different methods have been used (see figure 3-85). For physical analysis, the distance to parks, playgrounds, and big recreational parks have been measured. It has been found that the average distance from the neighborhood's households to the parks and playgrounds are walkable and they have got a high score for their walkability according to the scoring methods that have been explained previously. But they do not have any big recreational parks in a walkable distance.

Accordingly, in the interview children have been asked whether there is any developed park for them in their neighborhood or not; in order to know if they are satisfied with the parks and green areas that they have. 65% of them mentioned they do not have a park like that.

In children's drawing, children's needs of green areas with flowers and trees can be clearly seen, as most of the children drew parks, greeneries, flowers, and trees in the improved version of their drawings and it shows the lack of greeneries and colorful flowers around them. Some of them drew animals and they would like to see more animals and birds.
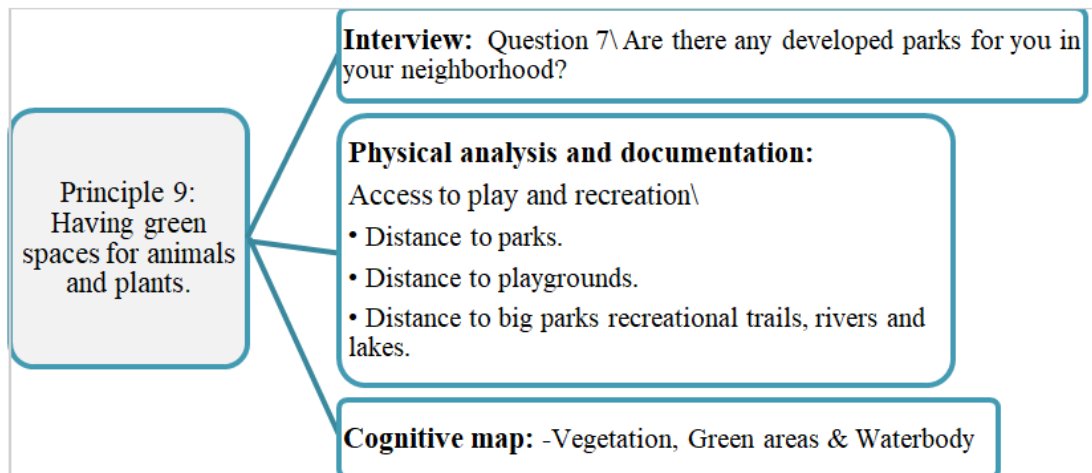
Figure 3.85: The methods for evaluating ninth principle of child friendly cities

So at the result, on the basis of physical analysis children have parks and green areas in a walkable distance, but on the basis of the interview and cognitive map, they do not have proper ones and they need more. So it shows that in Hewareberize neighborhood, parks and greeneries are available and they accessible and walkable for children but they are not adequate and acceptable in their points of view, children are not satisfied of those four public parks and other greeneries around them, they want more, and they required to see more colorful flowers and trees.

3.5.10 Living in clean environment

Every child should live in a clean and unpolluted environment, According to Plume labs (2020) which uses World Health Organization (WHO) guidelines as well as international standards developed by the United States Environmental Protection Agency (EPA); Sulaymaniyah city's annual average of Air Quality Index (AQI) is 63, it ensures that children in the city in general, and Hewareberize neighborhood have somehow clear and safe environment to go out, do activities, and play outsides.
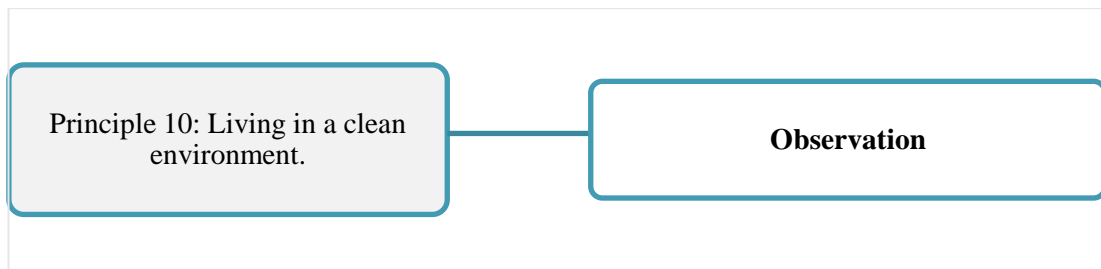
Figure 3.86: The method for evaluating tenth principle of child friendly cities

3.5.11 Participation in cultural and social events

Participation of children in social and cultural events is one of the principles of Child Friendly Cities, it helps them to understand their culture, to improve their sense of community or to be a part of this community, in order to feel they are valuable in the community as other people, and also cultural events helps them to learn who they are and where they come from.

This principle can be measured in a city scale because cultural events are specified for the whole city, but because the case study of this thesis is a neighborhood, it has been tried to connect the purpose of this principle with a smaller scale or a neighborhood. Children have been asked a question that is related to their opportunities and allowance to participate in events with their neighbors. 70% of them have mentioned they could not be a part in cultural events with their neighbors.
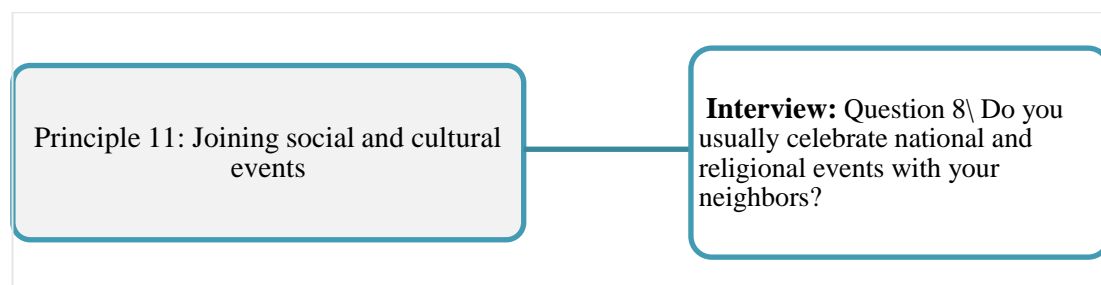
Figure 3.87: The method for evaluating eleventh principle of child friendly cities

So it shows, nearly three quarter of the children in the Hewareberize neighborhood do not celebrate and participate in the events with their neighbors.

3.5.12 Equality

In child friendly cities the rights of all children have to be respected regardless of the child or their parent's language, race, political opinion, color, religion property, national, birth, social or ethnic origin, or disability. This principle has been evaluated on the basis of race, gender, and age diversity in the neighborhood. Two methods have been used to evaluate this principle (see figure 3-88).
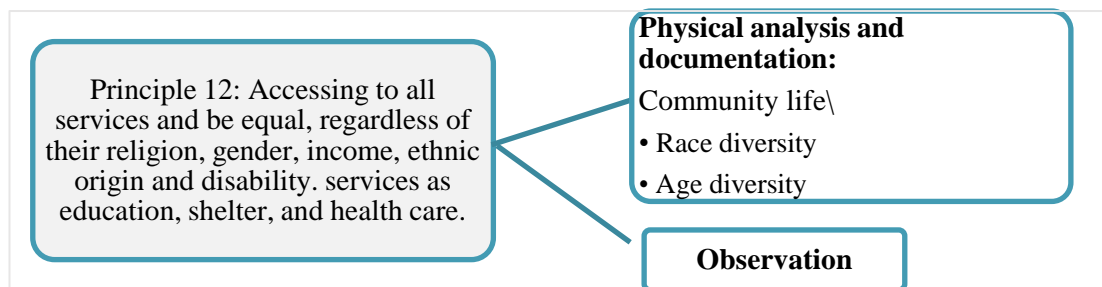
Figure 3.88: The methods for evaluating twelfth principle of child friendly cities

As it has been found the race diversity or the ethnic diversity in this neighborhood is at a low rate, which the race diversity index is 0.02, because most of the residents are Kurds and with other minorities there are no differences between them regarding their access to the services. In addition, the neighborhood has a high rate in age diversity, which the Simpson's Age Diversity Index is 0.917, and children in different ages can be seen in the outdoor spaces equally.

Also during observation it has been found that numbers of boys in the outdoor areas are more than girls (see figure 3-70). Another important point that has been found during the observation is that the number of boys who are alone outside are

two times greater than girls who are alone (see figure 3-72). This is perhaps due to the prominent religion and cultural background of the region, and this can be regarded as gender inequality.

3.6 Summary

In this chapter the information about the case study Hewareberize neighborhood has been explained, which is a neighborhood in Sulaymaniyah city in Northern-Iraq. After that, the methods of analysis have been clarified, and the method of triangulation was used, they were four different methods to develop a comprehensive understanding of the case study and whether it fulfill the requirements of the Child Friendly City or not. These methods that were used in this study were: Physical analysis and documentation, interview, cognitive map, and observation. Each of the methods has its own findings and all of them together were used to evaluate the neighborhood regarding the principles of Child Friendly City.

Afterwards, the implementation for those methods have been presented. According to the findings it is determined that the studied case is somewhat child friendly and needs improvement in many aspects in terms of child participation, and safety,sociality and increasing more recreational areas for them, and it is found that there is genderism in the neighborhood.

Chapter 4

CONCLUSION AND DISCUSSION

4.1 Conclusion

In this thesis the mixed methodology is used to analyze and evaluate Hewareberize neighborhood in Sulaymaniyah in Northern-Iraq with principles of Child Friendly Cities. In this research qualitative and quantitative approaches are used to conduct precise results to find whether the neighborhood is child friendly or not. Details of implementations and analysis have been given in the previous chapter.

The principles of Child Friendly City have been defined on the basis of the rights of children that have been stated in the Convention on the Rights of the Child. Also the embodiment of the Convention of the rights of the Child at local level is the definition of a Child Friendly Cities (CFC).

According to the findings, by physical analysis and documentation method, it was found that Hewareberize neighborhood is somewhat child friendly neighborhood; in the methods of interview and cognitive map the neighborhood were evaluated from the children's point of view. Also the neighborhood was observed in order to directly watch children's action and behavior in the neighborhood. Then, the twelve principles of Child Friendly Cities have been evaluated in the neighborhood. Conclusion of each principle is given below:

Principle one - Decision making: Generally, in the whole city children's participation in decision makings about their city is not allowed. But in the neighborhood scale, most of the children mentioned there are some simple matters that directly related to them such as: decision about choosing their room color, school, and so on, which they can contribute.

Principle two - Expression of opinion: Expression of children's opinion about their city is not really attended to, but children are allowed to express their opinion about the matters that directly related to them in their daily lives, for example about: the color of their room, deciding the style of clothes and so on.

Principle three - Participation in community: Children in this neighborhood want to have more opportunity to integrate and socialize with people.

Principle four - Getting essential services: Children have essential services in a walkable distance such as schools, and health centers and urgent care centers, and all of them have shelters to live in.

Principle five - Getting safe water: The children have safe water to drink.

Principle six and seven - Security and Safety: According to the physical analysis and documentation children in the neighborhood are extremely safe and protective because of the very low rate of crime and traffic accidents and so on; but most of the parents do not allow their children to go outside independently, and children themselves are afraid of those high number of cars in the local streets of their neighborhood. Perhaps the parents in this neighborhood overprotect their children

and they are afraid of their children to be harmed, and they do not allow their children to go far from their home alone, which is why most of the children play on the streets next to their home and it helps their parent to take care of them directly. From the perspective of children themselves, most of them think about traffic problems and a high number of cars in their neighborhood as a factor that decreases their safety in the neighborhood, also in their drawings they have shown the same things and they want to decrease or remove cars on their streets.

Principle eight – Meeting with friends: Children in the neighborhood have a little opportunity to meet each other and play together in a proper and adequate place or space, because of the lack of recreational areas in the neighborhood.

Principle nine - Having green spaces: They have enough parks according to the physical analysis, but in children's point of view they do not have proper parks and they are not satisfied with the parks they have, they need more green areas, more flowers, and trees. The children spend their time in those parks which include playgrounds more than those without playgrounds. But most of the children prefer to play on the streets rather than equipped playgrounds. Maybe the reason is because the playgrounds are just classic playground with old-designed equipment as slides and swings. Also, designing of those spaces have to be considered children's desires for example instead of those classic equipment, they want to do more adventure and have challenging playgrounds.

Principle ten - Living in a clean environment: The children in this neighborhood live in a clean environment.

Principle eleven - Participation in cultural and social events: Children in this neighborhood can participate in social events such as family gathering, birthdays, and so on. They are not allowed to participate in cultural and religional celebrations and events.

Principle twelve – Equality: Children in the neighborhood are equal regardless of their ethnic and age, but an act of genderism is done by parents that give independence to their male child to go out and play freely more than their female child, most of the girls are accompanied by their parents or carers while they want to play and meet their friends, this indicated the gender inequality in the neighborhood.

In conclusion, for some principles the results contradict each other for different methods that are implemented for the same principle, for example in some principles the results of physical analysis is different from the children's point of view. On the basis of these findings Hewareberize neighborhood does not fulfill some of the principles of Child Friendly City.

4.2 Discussion

The Hewareberize neighborhood is missing some principles of a Child Friendly City. In order to fulfill them the city government and its committee should improve circumstances for children in the neighborhood, the city must take employing practices, strategies, programs and initiatives into considerations that put children first and include them in decisions.

The neighborhood must implement these requirements and strategies to fulfill all of the principles of child friendly cities:

1. Giving children more opportunities to participate in decision makings about their neighborhood and in the processes of building and transforming their surrounding environments.

2. Asking for children's opinions and point of view and using them to improve the design of the existed specific areas for children, and also using their creative ideas in planning and designing a new place for them.

3. Adding libraries and more educational resources in the neighborhood for children to learn and improve themselves in their desired fields.

4. Adding more security cameras by the residents next to their houses as a partnership between community and police for preventing any risk on children's life, and it also helps their parents to assure of their children's security outside.

5. Determining and building a specific place/space for children to ride their bikes and have fun with their friends in a safe and secure area.

6. Using the strategy of closing one local street to cars, each week, for one single day in a particular time, to let all of the children to play, meet their friends, do socializing with people, in the safe environment in that day, which it helps them to improve their mental and physical health and their social lives.

7. Improving the playgrounds by eliminating old-designed equipment and replacing them with more challenging play equipment.

8. Building more recreational centers for children.

9. Preparing effective seminars and workshops for parents about gender equality.

In the result during the evaluation of the principles of Child Friendly City initiative for the Hewareberize neighborhood, in some principles a difference can be seen between the findings of the methods that have been used for the same principle. As it is clarified below:

- In the principle of security, the results of the methods are different from each other. During the observation, it is found that most of the children are not allowed to go far from their home; most of them play on the local streets next to their home. While in the interview the same thing has been found. But children themselves did not mention any difficulties related to their security in their neighborhood. Also in the documentation method, it has been found that the neighborhood it totally secured. The reason for this difference maybe because the parents are just overprotective and they are afraid of any risk on their children's life, they do not allow them to go far from their home.

- In the principle of green spaces, the result of the method of physical analysis is different from the results of cognitive map and interview. According to the physical analysis it is found that this neighborhood has parks and green areas in a walkable distance from the children. But in the interview and cognitive map, it has been found that in the perspectives of most of the children they do not have any proper and developed park in their neighborhood, and in the cognitive map most of them drew parks, trees, flowers and greeneries in their improved version of their drawings. This difference can show that children are not satisfied with those parks and greeneries they have in their neighborhood.

- In the principle of safety, the result of the method of physical analysis and documentation is different from the three other methods. In the physical

analysis and documentation it has been found that this neighborhood is safe for children. But on the other hand, in the method of observation, it is found out that most of the children who were alone outside were next to their home. Also in the interview children mentioned that they are not allowed to go far from their home with their friends alone, and a high number of children have mentioned about numbers of cars in the local streets have made difficulties for them. Additionally, in the cognitive map most of the children removed the cars on the streets in the improved version of their neighborhood. So the reason for this difference is maybe because the narrow width of the local streets does not allow the children to play freely because of passing this high number of cars; so from the children's point of view these cars are just an obstacle for their activity.

As a result, this study shows a major finding and it triggers the quest to find out why such differences are observed. Why does a method contradict another method for the same principles? The differences mostly integrated from children's opinions, feelings and experiences through their surroundings.

Recommendations for future studies

1. The difference between the methods can be advantageous for other researcher's recommendations.

2. The same research framework can be used to evaluate a wider zone or for the whole city of Sulaymaniyah or similar settlements.

3. The targeted age group for this research is between six to twelve years, for future works it can be done for a wider range of ages of children.

4. The research has focused on the outdoor environment of children. In the future research can be done for children's home environments too.

5. The research has found that children who play on the local streets are significantly more than those who play in the parks and playgrounds in this neighborhood. The reason can be found in the future works.

This research can be used by other researchers as a framework to make similar researches. Besides, local and governmental authorities can get benefits from this research for the design and planning of more Child Friendly settlements.

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APPENDICES

Appendix A: Information Sheet for Parents

Dear respected parents (guardians),

The purpose of this form is to provide you (as the parent or guardian of a prospective participant for my research study) information that might influence your decision as to whether or not to let your child participate in this research study. I will describe the study to you and answer all your questions. Please read the following information carefully and ask any questions you want before deciding whether or not to give your permission. If you decide to let your child to participate in this study, this form will be used to record your permission.

If you allow your child to participate, they will be asked to involve in this research study about Child friendly cities on the topic A review on Child Friendly Cities, case study: Hewareberize Neighborhood, Sulaymaniyah, Iraq. The aim of this study is to analyze Hewareberize Neighborhood in Sulaymaniyah with the Child Friendly cities criteria, in order to determine existing situations and according to the findings, provide further recommendations for improvements.

If you agree, they will be asked to answer 9 simple questions about their neighborhood and their life in general, after that they will also be asked to draw maps of their neighborhood with two versions the existing and improved ones and to select their favorite place. This study will take one and half hour.

I want to ensure you that there are no foreseeable risks to participating in this study. The main possible benefit of participation is developing the sense of being valued in your child, and your child will receive a small gift for participating. The study have benefits to all the society by determining and suggesting the ways to make a particular neighborhood or the whole city to be more child friendly, and also to understand children and their desires and the importance of participating them in a decision makings about their community and social life.

Your child's participation in this study is completely voluntary. At any time your child can decline to participate or to withdraw from participation. You can agree to let your child to be in this study now and change your mind later without any doubt. We also ask you to ensure your child this participation is voluntary.

If your child does not want to participate they will not be included in the study. If your child agrees to participate, it is okay to change their minds after that.

Your child's privacy and the confidentiality of his/her data will be protected and be used only for research purpose. Nobody other than the researcher and her supervisor will be allowed access to the filled in forms. Your child's research records will not be released without your consent. Other researchers may use the result data from your child's

participation in the future for research purposes only. So the data will contain no identifying information that could associate it with your child.

If you have any question or problem during or after your participation you can contact the researcher. Also for further information you can directly contact the researcher and the thesis supervisor.

To signify your child's voluntary participation, please complete the consent form below.

Thanks for your participation.

Appendix B: Consent Form for Parents

Berivan Omer   PROF. DR. Mukaddes POLAY
MS students   MS Thesis supervisor
Faculty of Architecture   Faculty of Architecture
Department of Urban design   Eastern Mediterranean University
Eastern Mediterranean University   Mukaddes.polay@emu.edu.tr
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Consent form

I confirm that I have read and understood the information sheet and the main purpose of this interview, and I understand that my child's participation is completely voluntary and if I have any question I understand that I have the opportunity to ask.

Date: ……………………..   Signature: ………………………

Appendix C: Information Sheet and Consent Form for Children

Information sheet
For children

I am Berivan, a masters student of Eastern Mediterranean University. I want to learn about how children live in your neighborhood. I want to find out how you meet and play with your friends, how you go to school and other places, and if you are allowed to play outside alone.

I need your help in this study because I do not know enough about your neighborhood. I want you to tell me a little about what it is like to live here. I also want you to make a drawing for me that shows how you wish your neighborhood looked like.

Consent Form

I have listened to or read and understood the information about the project. I understand I can decline to join it.

I agree to participate in this study.

Your name:......................... Date:......................

Age:....................

I am a boy

I am a girl

Appendix D: Interview

-Interview-

I will ask you some questions about your neighborhood and your life there. Imagine that you are my teacher and you are trying to teach me about your neighborhood. Feel free, because whatever you tell me no one will know about it. There are no wrong and right answers, and you have nothing to worry about.

1. Have you lived in Hawarabarza neighborhood (this neighborhood) your whole life?

....

2. Are you allowed to go to your favorite places alone or with your friends?

....

3. Where do you usually meet with your friends and play with them in your neighborhood?

....

4. Are you scared of walking outside alone in your neighborhood?

....

5. Are there any difficulties in your neighborhood regarding your safety? If yes what is it?

....

6. Do you participate in any decision processes when a park/playground construct in your neighborhood or before changing something in your school?

....

7. Are there any developed play areas and/or parks for you in your neighborhood?

....

8. Do you usually celebrate national and religional celebration with your neighbors?

....

9. Do your family usually ask your opinion about a decision that directly affect you or related to you?

....

Appendix E: Cognitive Map Sheets

Cognitive map

Imagine you are flying over your neighborhood. Now draw what your neighborhood looks like from up there?

Please include as many details as you can, and label as much as possible?

Cognitive map

Imagine you are flying over your neighborhood again. Now draw how you will improve your neighborhood? Add or remove places that you want...feel free...
Please include as many details as you can, and label as much as possible?