

**‘AGE-FRIENDLY’ NEIGHBOURHOOD PARKS:  
EVALUATING PARKS IN KARŞIYAKA (İZMİR)  
ACCORDING TO USER PERCEPTIONS**

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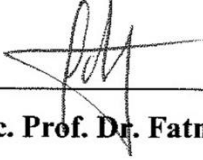
**in Urban Design**

**by  
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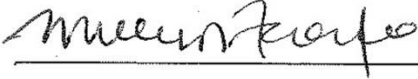
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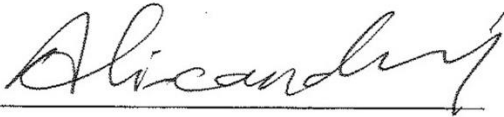
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I hope, even it is very minor; I can provide a contribution to make public open spaces more welcoming places for all and especially for older adults.

## ABSTRACT

### ‘AGE-FRIENDLY’ NEIGHBOURHOOD PARKS: EVALUATING PARKS IN KARŞIYAKA (IZMIR) ACCORDING TO USER PERCEPTIONS

Neighbourhood parks are expected to be accessible public open spaces located in a walking distance to the residences of individuals and provide them opportunities for leisure activities, physical activities and socializing. Use of neighbourhood parks is beneficial for all, but especially for older adults, as most of their daily routines are bound to neighbourhood environment. It is observed that older adults using neighbourhood parks often tend to have better physiological, mental and social health. On the other hand, not all older adults use neighbourhood parks, commonly because physical and social characteristics of these parks are not responsive to their age-related spatial needs and expectations. An ‘age-friendly’ park is supposed to be accessible, attractive, comfortable and safe for all, and particularly older adults. Certain factors about parks and park surroundings, for instance, walkability of the streets, opportunities for social interactions or existence of restrooms affect the perceptions of older adults about the age-friendliness of parks. The aim of this study is to identify the socio-spatial characteristics of parks that contribute to their age-friendliness, based on studies about spatial experiences of older adults in public open spaces. Then as a case study based on interviews with 65 years old and older park users in two relatively age-friendly neighbourhood parks in Karşıyaka (Izmir) that are selected through site observations, this study intends to evaluate how age-friendly the older adults perceive these parks, in relation to access to parks, physical and social characteristics of parks and park surroundings. Finally, the study intends to use its findings to develop recommendations for urban design interventions to improve age-friendliness of neighbourhood parks.

*Keywords: Age-friendly parks, aging, older adults, spatial perceptions of parks, urban design*



## ÖZET

### ‘YAŞ-DOSTU’ MAHALLE PARKLARI: KARŞIYAKA (İZMİR) PARKLARININ KULLANICI ALGILARINA GÖRE DEĞERLENDİRİLMESİ

Mahalle parkları, bireylerin evlerine yürüme mesafesinde konumlanan, erişilebilir olması ve bireylere boş zaman aktiviteleri, fiziksel aktiviteler ve sosyalleşme olanakları sunması beklenen kamusal açık alanlardır. Mahalle parklarının kullanımı herkes için, özellikle yaşlı bireyler için faydalıdır, zira onların günlük faaliyetlerinin çoğu yaşadıkları mahalle ortamına bağlıdır. Mahalle parklarını sık kullanan yaşlı bireylerin daha iyi bir fizyolojik, zihinsel ve sosyal sağlığa sahip olma eğiliminde oldukları gözlemlenmektedir. Öte yandan, tüm yaşlılar mahalle parklarını kullanmamaktadır, bu durum genellikle bu parkların ve park çevrelerinin fiziksel ve sosyal özelliklerinin yaşlı bireylerin farklılaşan mekansal ihtiyaçlarına ve beklentilerine duyarlı olmamasından kaynaklanmaktadır. ‘Yaş-dostu’ bir parkların herkes için, ve özellikle yaşlı bireyler için erişilebilir, çekici, rahat ve güvenli olmaları beklenmektedir. Parklar ve park çevrelerine dair çeşitli faktörler, örneğin sokakların yürünebilirliği, parklarda sosyalleşme için olanaklar sunulması ya da tuvalet olması gibi, yaşlı bireylerin parkları ne derece yaş-dostu algıladıklarını etkilemektedir. Bu çalışmanın amacı, yaşlı bireylerin kamusal açık alanlardaki mekânsal deneyimleri üzerine kurgulanmış çalışmalara dayanarak parkların yaş-dostu olmalarına katkı sağlayan sosyo-mekânsal özellikleri tespit etmektir. Ardından bu çalışma, Karşıyaka ’da (İzmir), saha gözlemleri aracılığıyla seçilmiş göreceli olarak yaş-dostu iki mahalle parkında 65 yaş ve üzeri park kullanıcıları ile röportajlara dayanan bir vaka çalışması ile yaşlıların parkları ne derece yaş-dostu olarak algıladıklarını, parklara erişim ile, parkların ve yakın çevrelerinin fiziksel ve sosyal özellikleri bağlamında değerlendirmeyi amaçlamaktadır. Son olarak, bu çalışma, bulgularını mahalle parklarında yaş-dostu olmanın iyileştirilmesi üzerine kentsel tasarım müdahaleleri için öneriler geliştirmek için kullanmayı hedeflemektedir.

*Anahtar kelimeler: Yaş-dostu parklar, yaşlanma, ileri yetişkinler, parklarla ilgili mekansal algılar, kentsel tasarım*

# TABLE OF CONTENTS

LIST OF FIGURES .....	viii
LIST OF TABLES.....	x
CHAPTER 1. INTRODUCTION .....	11
1.1. Problem Definition.....	11
1.2. Aim of the Study and Research Questions.....	14
1.3. Study Site and Methodology .....	16
1.4. Structure of the Study.....	19
CHAPTER 2. PEOPLE’S AGING AND THE BUILT ENVIRONMENT.....	21
2.1. Definitions About Aging and Old Ages.....	21
2.2. Age-Friendliness of the Built Environment .....	26
2.3. Summary .....	30
CHAPTER 3. FACTORS AFFECTING THE USES OF NEIGHBOURHOOD PARKS BY OLDER ADULTS .....	32
3.1. Socio-Economic Characteristics of Park Users.....	32
3.2. Characteristics of Neighbourhood Environments .....	36
3.3. Access to Neighbourhood Parks .....	39
3.4. Physical and Social Characteristics of Neighbourhood Parks .....	43
3.4.1. Park Design and Parks’ Natural Features .....	43
3.4.2. Park Facilities and Older Adults’ Activities in Parks.....	46
3.4.3. Older Adults’ Perceptions About Safety in Parks .....	49
3.5. Urban Design Examples for Age-Friendly Parks.....	51
3.5.1. The Portland Memory Garden.....	52
3.5.2. Preussenpark.....	53
3.5.3. Carbide Park .....	54
3.5.4. Jackson Square Park .....	56
3.6. Summary - The List of Characteristics of Age-Friendly Parks.....	57

CHAPTER 4. STUDY SITE AND METHODOLOGY.....	60
4.1. About the Study Site: Karşıyaka, Izmir .....	60
4.2. Research Design and Methodology .....	64
CHAPTER 5. TWO AGE-FRIENDLY PARKS IN KARŞIYAKA AND THEIR OLDER USERS .....	70
5.1. Characteristics of the Neighbourhood Parks.....	70
5.2. Characteristics of the Study Participants.....	76
5.2.1. Participants’ Purposes for the Park Use .....	80
5.2.2. Participants’ Park Use Characteristics.....	83
CHAPTER 6. HOW OLDER USERS EVALUATE THE AGE-FRINEDLINESS OF TWO PARKS IN KARŞIYAKA .....	90
6.1. Neighbourhood Characteristics and Park Use Preferences .....	90
6.1.1. Pleasant Neighbourliness Relationships as a Motivation to Park Use .....	92
6.1.2. Surrounding Land-Use Characteristics Shaping Park Use .....	94
6.2. Access to Green Spaces in Densely Built Neighbourhoods.....	99
6.2.1. Poor Walkability of the Streets as a Barrier to Park Use .....	104
6.3. Use of Neighbourhood Parks as an Opportunity to be in Nature.....	111
6.4. Park Facilities and Park Use Preferences .....	116
6.4.1. Cafés in Neighbourhood Parks as ‘Third Places’ for Older Adults .....	116
6.4.2. Physically Activity Opportunities in Neighbourhood Parks .....	122
6.4.3. Uncomfortable Benches Affecting Length of Stay in Parks .....	124
6.5. ‘Conflict with Other Park Users’ Affecting Park Perceptions .....	127
6.6. Summary .....	133
CHAPTER 7. CONCLUSION & RECOMMENDATIONS.....	135
REFERENCES .....	142
APPENDIX A. ATTRIBUTES OF NEIHGBORHOOD PARKS IN KARŞIYAKA	157

# LIST OF FIGURES

<b><u>Figure</u></b>	<b><u>Page</u></b>
Figure 1.1. Changes in the population of Turkey according to age and gender .....	14
Figure 1.2. Main approach of this study for the factors affecting the use of parks .....	16
Figure 1.3. Location of two sample neighbourhood parks in Karşıyaka district.....	18
Figure 3.1. Seating units of The Portland Memory Garden to support socialization .....	53
Figure 3.2. Food market in Preussenpark .....	54
Figure 3.3. Geriatric exercise equipment in Carbide Park.....	55
Figure 3.4. Geriatric exercise equipment.....	55
Figure 3.5. Outdoor music instruments in Jackson Square Park .....	56
Figure 3.6. Architectural details in Jackson Square Park as common focuses.....	57
Figure 4.1. Comparison of median age and ratio of population at 65 years old and above .....	61
Figure 4.2. Comparison of education level of population at 65 years old and above.....	62
Figure 4.3. Public green spaces of Karşıyaka .....	63
Figure 4.4. Location of 5 neighbourhood parks.....	66
Figure 4.5. Neighbourhood characteristics of 3 neighbourhood parks.....	68
Figure 5.1. Park layout of 80. Yıl Cumhuriyet Park.....	72
Figure 5.2. Park layout of Uğur Mumcu Park .....	73
Figure 5.3. Age distribution of the study participants .....	77
Figure 5.4. Education level of the participants according to their gender .....	77
Figure 5.5. Self-reported health condition of the participants .....	78
Figure 5.6. Park use purposes of the participants .....	81
Figure 5.7. Park use purposes of the participants according to age.....	83
Figure 5.8. Park use frequency of the participants .....	84
Figure 5.9. Park use frequency of the participants according to their park use purposes .....	85
Figure 5.10. Park use duration of the participants .....	85
Figure 5.11. Park use duration of the participants according to their park use purposes	86
Figure 5.12. Park use time preferences of the participants .....	87
Figure 5.13. Park use time preferences of the participants according to their activities	88
Figure 5.14. Companionship status of the participants.....	88

Figure 6.1. Participants' preferences for adjacent land-uses of the parks .....	95
Figure 6.2. Land-use characteristics of the buildings adjacent to 80. Yıl Cumhuriyet ..	96
Figure 6.3. Land-use characteristics of the buildings adjacent to Uğur Mumcu Park....	99
Figure 6.4. 80. Yıl Cumhuriyet Park as one of the limited green spaces in a densely built settlement .....	101
Figure 6.5. A small park with limited park facilities in Bahçelievler Neighbourhood.	102
Figure 6.6. Participants' perceptions about the sufficiency of the amount of park acreage in their neighbourhoods .....	103
Figure 6.7. Travel distance of the participants according to age .....	106
Figure 6.8. Participants' problems affecting their walking to the parks.....	106
Figure 6.9. A sidewalk with insufficient width (50 centimeters) and obstructions in Bahçelievler Neighbourhood .....	107
Figure 6.10. A street adjacent to Uğur Mumcu Park without sidewalks .....	109
Figure 6.11. Poor crossing quality and heavy traffic adjacent to 80. Yıl Cumhuriyet Park .....	110
Figure 6.12. An 'unattractive to walk' street in Bostanlı Neighbourhood.....	111
Figure 6.13. Overall view of 80. Yıl Cumhuriyet Park .....	112
Figure 6.14. Pine woodland in 80. Yıl Cumhuriyet Park .....	113
Figure 6.15. Natural features of Uğur Mumcu Park .....	114
Figure 6.16. Mature trees providing shading in 80. Yıl Cumhuriyet Park .....	115
Figure 6.17. Café of Uğur Mumcu Park .....	117
Figure 6.18. Café of 80. Yıl Cumhuriyet Park.....	120
Figure 6.19. Walking loop in 80. Yıl Cumhuriyet Park .....	123
Figure 6.20. Exercise equipment in Uğur Mumcu Park .....	124
Figure 6.21. Uncomfortable benches with iron material and striped structure.....	125
Figure 6.22. Uncomfortable and inadequate benches in the playground of 80. Yıl Cumhuriyet Park .....	127

## LIST OF TABLES

<b><u>Table</u></b>	<b><u>Page</u></b>
Table 1.1. Summary of characteristics of two sample neighbourhood parks of the case study.....	17
Table 3.1: Comparison of minimum required neighbourhood park space standards .....	39
Table 3.2. Summary of identified park characteristics of age-friendly parks according to the urban design literature.....	59
Table 4.1. Selection process of Karşıyaka for the study site of the case study .....	61
Table 4.2. Physical attributes of 5 neighbourhood parks.....	65
Table 4.3. Site observation results in 5 neighbourhood parks according to the number of older adult park users .....	65
Table 5.1. Scoring analysis for the existence or absence of age-friendly park characteristics in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park .....	74
Table A.1. Attributes of 148 neighbourhood parks in Karşıyaka.....	157

# CHAPTER 1

## INTRODUCTION

### 1.1. Problem Definition

This study examines how the physical and social characteristics of neighbourhood parks and park surroundings affect the spatial experiences and perceptions of older adults in their uses of these parks, with a case study based on site observations and user interviews in two relatively ‘age-friendly’ neighbourhood parks in Karşıyaka (Izmir, Turkey). Neighbourhood parks as one of the core components of public open spaces are expected to be accessible for all and provide individuals opportunities to engage with leisure, physical and social activities via certain park facilities. Use of neighbourhood parks provide health benefits for all, and especially older adults, as they tend to spend great proportion of their lives in their neighbourhoods (Day, 2008). Older adults using neighbourhood parks frequently tend to be physically more active (Bedimo-Rung et al., 2005), have better physiological health (Orsega-Smith et al., 2004), decreased levels of stress (Hansman et al., 2007), and have a stronger sense of community (Kweon et al., 1998). This study assumes that the frequent use of neighbourhood parks among older adults is necessary for maintaining a healthy aging. On the other hand, not older adults use neighbourhood parks, moreover, certain studies find that older adults are one of the least represented user groups in neighbourhood parks (Cohen et al., 2016; Payne et al., 2002). The common reason that deters older adults from using neighbourhood parks is often related to lack of fit between age-related spatial needs and expectations of older adults in their uses of parks, and socio-spatial characteristics of these parks and park surroundings (Loukaitou-Sideris et al., 2016).

Particularly, in the last 20 years, as a part of ‘age-friendly’ built environments movement, various urban design studies have focused on adapting the design and programming of parks to respond to the age-related spatial needs and expectations of older adults with the help of certain urban design implementations. These urban design implementations can be, for instance, providing geriatric exercise equipment which are designed to meet the anatomical needs of older adults to promote physical activities, or

healing gardens with different types, colours and fragrances of vegetation to spark the memories of older adults with memory disorders (Loukaitou-Sideris et al., 2014).

Several studies about the relationship between the park use in older adults and their physiological, mental and social health have found positive correlations. For instance, the study of Takano et al. (2002) with 3.144 older adults in Tokyo finds that those who live in park-rich neighbourhoods have 5 years more longevity regardless of their gender, marital status or income level, compared to those who live in park-poor neighbourhoods. Neighbourhood parks can encourage older adults to be physically more active. Kaczynski et al. (2008) find that increase in the amount of park acreage in Ontario's neighbourhoods is associated with an increase in the time that older adults spend for walking as a physical activity. The study of Orsega-Smith et al. (2004) in Cleveland reveals that older adults those who use neighbourhood parks frequently tend to exercise more, have greater body-mass indexes and lower systolic blood pressure as well. Neighbourhood parks can provide older adults tranquil environments where they can cope with daily stressors and be in a better mood (Hansman et al., 2007; Hull & Michael, 1995). Furthermore, neighbourhood parks can support socialization in older adults by providing them environments that they can enjoy intergenerational activities with their families, gather with their friends and find chances to meet with other people at their age (Kweon et al., 1998).

However, not all older adults use neighbourhood parks. There are intrapersonal and intrapersonal constraints to park use, for instance, lack of time or fear of crime, and structural constraints, such as lack of proximate parks or lack of maintenance in parks. Due to the changes in their anatomical needs and leisure preferences, park use in older adults is more dependent to the physical and social characteristics of parks and park surroundings compared to other age groups, for instance, lack of maintenance in parks can trigger fear of crime for all, but especially older adults, as they feel more vulnerable for exposing to crime because of their decreased physiological strength. Certain factors related to park design, that are less likely to affect the park use in younger user groups, for instance, steep ramps or stairs, can deter older adults from using parks due to these differences in their anatomical needs and leisure preferences (Loukaitou-Sideris et al., 2014; Willemse, 2010).

In the last 20 years, there has been increasing efforts on adapting the design and programming of parks to respond to the age-related spatial needs of older adults. These



'age-friendly' parks aim to provide accessible, attractive and comfortable environments for all, and especially for older adults. According to Loukaitou-Sideris et al. (2014), the term 'age-friendly parks' here, does not necessarily refer to parks that are exclusive for the uses of older adults, rather, it refers to parks that are designed to include all, with additional consideration for responding to age-related spatial needs and expectations of older adults. For instance, 'traditional' exercise equipment in parks may lead to injuries among older adults as they are less likely to recognize the anatomical needs of older adults, on the other hand, 'geriatric' exercise equipment that are purposely designed to meet the anatomical needs of older adults can be used by older adults and all other park users from different age groups as well. There are universally recognized urban design implementations that can contribute to the 'age-friendliness' of parks, for instance, supporting way-finding via park signs or providing public restrooms. Nevertheless, how age-friendly the older adults would perceive parks require further investigations according to the geographical contexts of these parks. For instance, while in the study of Kaştaş-Uzun (2016), older adults in the neighbourhood parks in Izmir as a city with very hot climate complain about the lack of shading as an important constraint to park use, in the study of Irvine et al. (2013) in Sheffield where average daily sun hours is significantly lower, participants express 'taking advantage of the sun' as a great motivation to park use.

Turkey is the second fastest-aging country among O.E.C.D. members (AARP, 2015). As of by 2018, 8,8% of the population in Turkey is at 65 years old and above. By the year of 2050, this ratio is projected to reach 20,8%. In other words, in the next 30 years, one out of every five people will be 65 years old and older in Turkey (Turkish Statistical Institute, 2019). Considering the increases in the aging population of Turkey, this study argues that the need for age-friendly public spaces and here, age-friendly neighbourhood parks is urgent to maintain public health. However, there is a literature gap about age-friendly parks in the context of Turkey as the numbers of studies about older adults and park use is very limited (Güngör, 2019; Düzenli & Özkan, 2017; Şavklı et al., 2016; Türel et al., 2007). Moreover, there are no public policies or urban design projects about age-friendly parks exist in Turkey as of by 2019. Accordingly, this study aims to make contributions to the urban design literature in terms of age-friendly parks by investigating the spatial experiences and perceptions of older adults in their uses of neighbourhood parks.

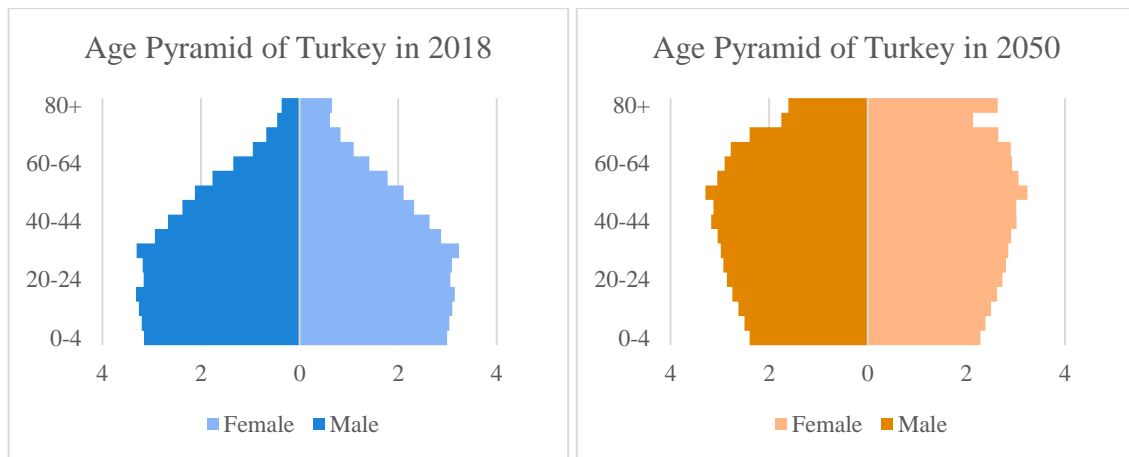


Figure 1.1. Changes in the population of Turkey according to age and gender (in millions)  
(Source: Turkish Statistical Institute, 2018)

## 1.2. Aim of the Study and Research Questions

This study argues that adapting the design and programming of existing parks to meet the age-related spatial needs and expectations of older adults can attract more older adults to use these parks to engage with leisure, physical and social activities and thus, contribute to their physiological, mental and social health. Considering and to respond to the increases in the aging population in Turkey, this study assumes that public policies and urban design projects for the adaptation of existing neighbourhood parks as ‘age-friendly’ public spaces need to be developed. For this aim, socio-spatial characteristics of parks that contribute to their age-friendliness must be investigated primarily. To achieve this this study aims to identify the physical and social characteristics of parks and park surroundings that affect the spatial experiences and perceptions of older adults in their uses of these parks according to review of urban design literature. Then as a case study based on site observations and user interviews, this study aims to ‘test’ its findings by evaluating the perceptions of older adults about the age-friendliness of these parks.

To achieve its aim, the study aims to answer the following research question and sub-questions through the review of urban design literature and its case study:

- What are the socio-spatial characteristics of neighbourhood parks that affect the spatial experiences and perceptions of older adults in their uses of these parks?
  - What are the factors affecting the access of older adults to neighbourhood parks?

- How do the characteristics of neighbourhood environments affect the use of neighbourhood parks among older adults?
- What are the physical and social characteristics of parks that affect the use of neighbourhood parks among older adults?
- What kind of urban design implementations can improve the perceptions of older adults about the age-friendliness of neighbourhood parks?

Following the review of urban design literature, this study develops the following hypotheses to guide its case study in the selection of sample neighbourhood parks and user interviews with park users at 65 years old and above in these parks to evaluate their spatial experiences and perceptions:

- Increase in the amount of park acreage in neighbourhoods can increase the park use among older adults.
- Thresholds in neighbourhoods (i.e. heavy traffic, sloping topography) can decrease the park use among older adults.
- Increase in the natural features in neighbourhood parks (i.e. mature trees, ornamental pool) can increase the park use among older adults.
- Increase in the number of park facilities for different types of activities (i.e. exercise equipment for physical activities, picnic tables for socialization) can increase the park use among older adults.
- Nuisance problems in parks (i.e. lack of maintenance, conflict with other park users) can decrease the park use among older adults.

Based on these hypotheses, this study selects ‘Karşıyaka’ for the study site as across the districts of Izmir, as it has one of the highest numbers of the population at 65 years old and above and greatest amounts of park acreage in its neighbourhoods at the same time. Then the study selects two relatively ‘age-friendly’ neighbourhood parks across those with highest numbers of park users at 65 years old and above, and meet as many as possible recommendations for the age-friendly parks.

In its case study, this study realizes site observations in its two sample parks to compare their physical characteristics with the criteria that are recommended by urban design literature for age-friendly parks, for instance, by analysing the height, width and material walking paths in these parks. Then, with the help of user interviews with park users at 65 years old and above, the study aims to evaluate how physical and social characteristics of sample neighbourhood parks and their park surroundings affect the

spatial experiences and perceptions of older adults in their uses of these parks, with understanding the factors that motivate them to or deter them from using these parks. At the final step, this study develops recommendations according to its findings that can contribute to the age-friendliness of sample neighbourhood parks of the study.

Figure 1.2. illustrates the main approach of this study to identify and evaluate the socio-spatial characteristics of parks and park surroundings that affect the perceptions of older adults about the age-friendliness of neighbourhood parks:

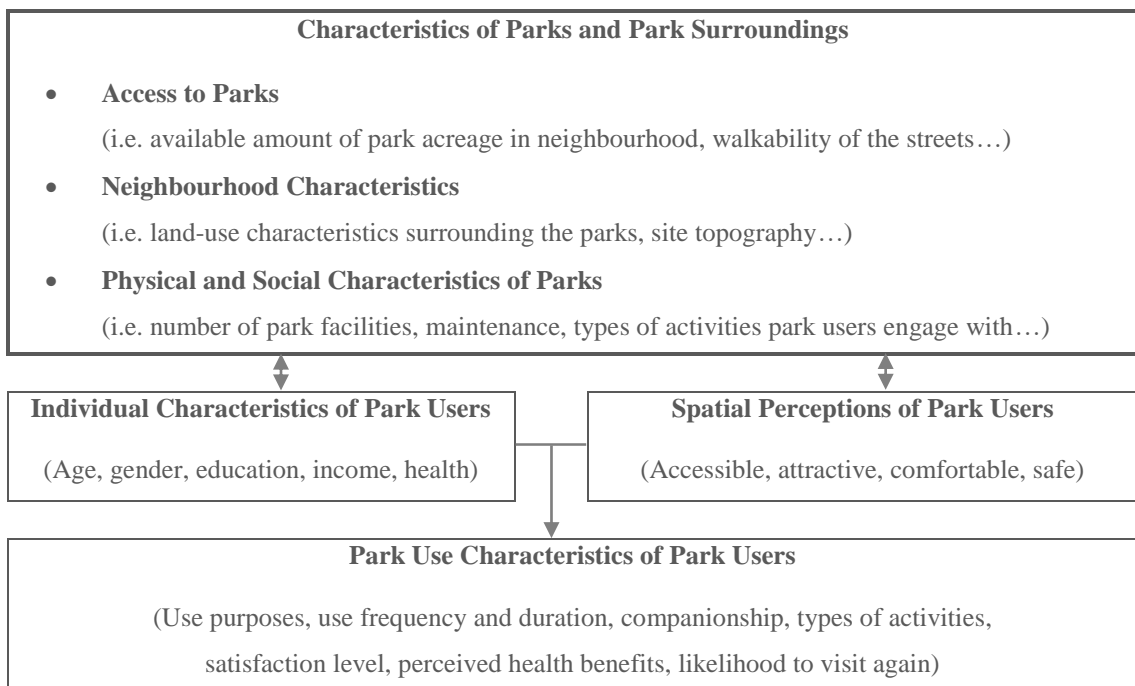


Figure 1.2. Main approach of this study for the factors affecting the use of parks

### 1.3. Study Site and Methodology

In the scope of this study, a case study with site observations and user interviews is realized in two relatively age-friendly neighbourhood parks in Karşıyaka district, in Izmir province: 80. Yıl Cumhuriyet Park and Uğur Mumcu Park. The case study occurs in three main phases: selection of the study site and sample neighbourhood parks via data analyses, site observations in two sample neighbourhood parks to compare the physical characteristics of these parks with the recommendations urban design literature for the age-friendly parks, and 60 user interviews with park users at 65 years old and above in sample neighbourhood parks to evaluate how physical and social characteristics of these

neighbourhood parks and park surroundings affect the spatial experiences and perceptions of older adults.

The case study of this study takes place in Karşıyaka district of Izmir province (Turkey), where one of the highest numbers of population at 65 years old and above live and one of the greatest amounts of neighbourhood park acreage is available at the same time (Şenol, 2019; Turkish Statistical Institute, 2018). Karşıyaka is located near the Gulf of Izmir, and well-known for its attractive public open spaces such as Bostanlı Seashore Recreation Area and Karşıyaka Çarşısı.

To select the sample parks for the case study across 148 neighbourhood parks in Karşıyaka, I narrowed the list of these parks in three steps (see Chapter 4 for details), according to the numbers and types of park facilities in these parks provide and physical characteristics of neighbourhood environments surrounding these parks, as these factors are two of the most significant determinants of the use of neighbourhood parks in older adults (Aspinall et al., 2010; Parra et al., 2010; Kaczynski et al., 2008). According to the data analyses and site observations I realized in neighbourhood parks in Karşıyaka, I selected ‘80. Yıl Cumhuriyet Park’ and ‘Uğur Mumcu Park’ for the case study as these parks provide greatest numbers and variety of park facilities that are recommended by Loukaitou-Sideris et al. (2014) for the age-friendly parks, and highest numbers of older adult park users.

Table 1.1. Summary of characteristics of two sample neighbourhood parks of the case study

	<b>80. Yıl Cumhuriyet Park</b>	<b>Uğur Mumcu Park</b>
<b>Park Acreage</b>	10.000 m <sup>2</sup>	8.330 m <sup>2</sup>
<b>Neighbourhood Characteristics</b>	Flat Topography Heavy Traffic Mixed-Uses Surrounding the Park	Flat Topography Low Traffic Residential Surrounding the Park
<b>Park Facilities</b>	Playground Exercise Equipment Walking Trail Café Public Restroom Public Drinking Water Tap	Playground Exercise Equipment Tennis Court Ornamental Pool Café and Grocery Store Public Restroom

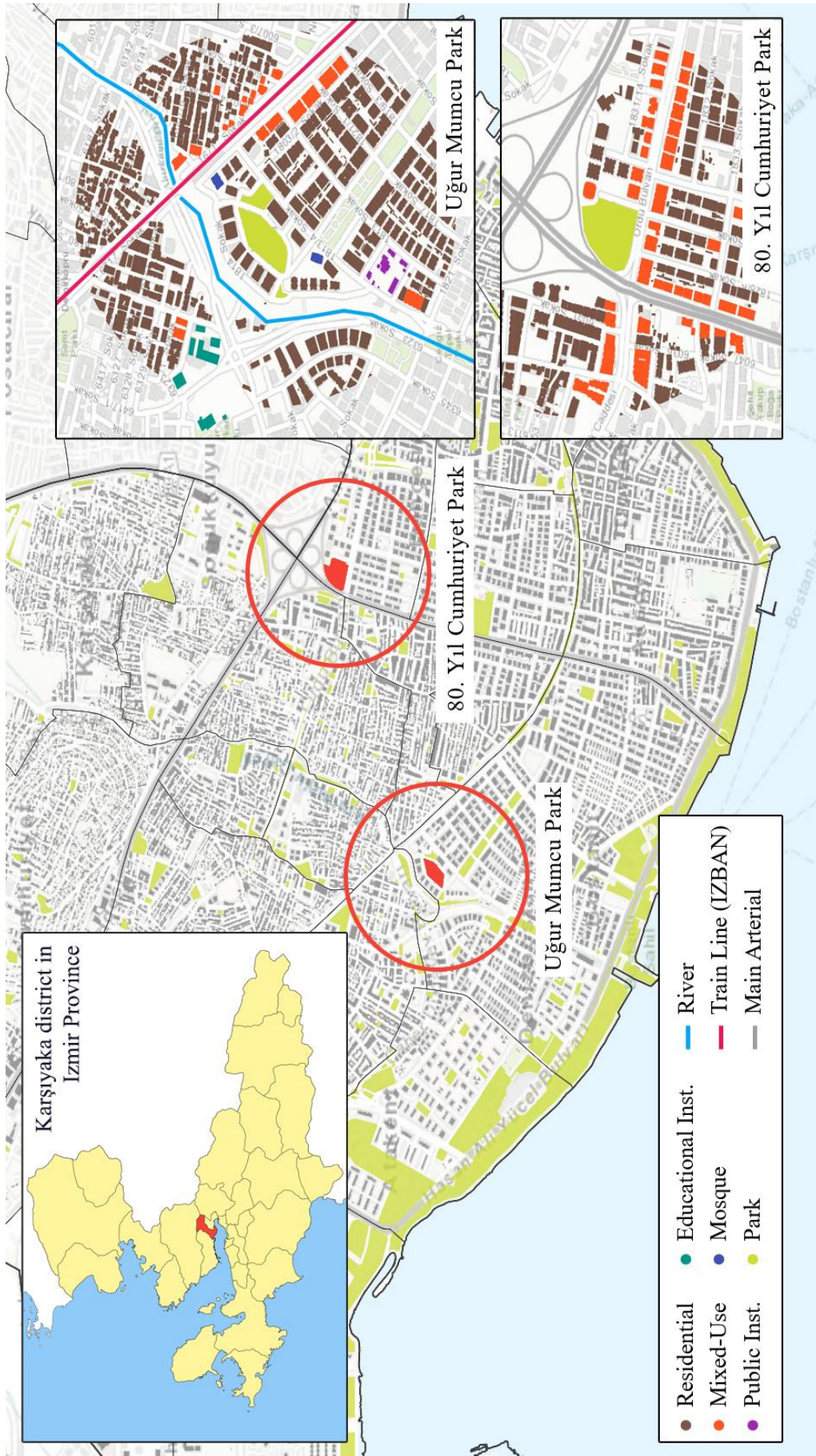


Figure 1.3. Location of two sample neighbourhood parks in Karşıyaka district (Created by the author using ArcMap)

In the scope of the case study, I realized site observations and user interviews in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park. During the site observations, I analysed the physical characteristics of these parks and gave scores for the existence and absence of criteria that are recommended for the age-friendly parks by the urban design literature. Then, I interviewed with 30 park users at 65 years old and above in each neighbourhood park to evaluate which factors related to the physical and social characteristics of these parks and park surroundings affect the spatial experiences and perceptions of the study participants. With the help of the interviews, I managed to gather detailed and specific information about the way older adults use neighbourhood parks in Karşıyaka, and the factors that motivate them to or deter them from using these parks.

#### **1.4. Structure of the Study**

This study is composed of seven chapters. Chapter 1 as the introduction chapter, is based on defining the problem that lead to the development of this study, describing the aim of this study in regards to its research questions and hypotheses, and then, introducing the study site and methodologies of the case study.

Chapter 2 develops a review of gerontology and urban design literature about the relationships between older adults and the built environment. It details the definitions about aging and old ages in regards to accepted changes in the physiological, mental and social health according to the review of gerontology literature, on investigating how these changes in the health is interrelated to the built environment, and on how can the built-environment be adopted with an age-friendly design approach to respond to the changes in the age-related spatial needs of older adults.

Chapter 3 investigates the factors affecting the use of neighbourhood parks by older adults. It is designed to explain how socio-economic factors of park users affect their uses of parks, identify the physical and social factors about parks and park surroundings that affect the use of neighbourhood parks by older adults, and analyse 4 well-known examples of the age-friendly parks.

Chapter 4 is about defining the study site and methodology of the case study. It describes why the case study takes place in two neighbourhood parks in Karşıyaka, and

explains how did the case study applied the selected methods, site observations and user interviews in these parks.

Chapter 5 is based on describing the physical and social characteristics of two sample neighbourhood parks of the case study, socio-economic characteristics of the study participants, their park use purposes and park use characteristics.

Chapter 6 is based on evaluating the spatial experiences and perceptions of study participants in two sample neighbourhood parks in Karşıyaka, according to the factors that motivate them to use these parks, the problems they encounter in their uses of these parks and their expectations that can contribute to their park use experiences.

Chapter 7 is the conclusion of the study. It summarizes the findings of the study, and make recommendations about potential urban design interventions to improve the age-friendliness of neighbourhood parks in Karşıyaka.



## CHAPTER 2

### PEOPLE'S AGING AND THE BUILT ENVIRONMENT

When individuals age, they encounter changes in their physiological, mental and social health that affect their spatial experiences and perceptions of the built environment. Especially due to decrease in their physiological strength, older adults are more vulnerable to the risk of falling, getting lost or exposing to crime. The movement of age-friendly built environments aim to adapt the design of all aspects of the built environment, for instance, streets, public buildings or parks to meet the needs of all individuals to allow older adults to continue taking an active part in all areas of life and society.

This chapter investigates the changes in the lives of aging individuals and effects of the built environment over aging. The first section defines the concepts of 'healthy aging' and 'aging in place' that are essential to understand the value of age-friendly neighbourhood parks, explains the use of the terms: 'older adults' and 'age-friendly' in the scope of this study, and touches upon the situation of aging individuals in Turkey. The second section examines how the physical aspects of the built environment can affect the competence of older adults to take an active part in all areas of life.

#### 2.1. Definitions About Aging and Old Ages

Aging is a multi-dimensional process that is related to common physiological, mental and social changes. Every individual age uniquely due to differences in lifestyle, genetics or environmental conditions, moreover, differences in the societies' acceptances about aging and public policies about aging individuals can lead to significant differences among the quality of life of older adults. This section investigates gerontology literature to understand the physiological, mental and social aspects of aging, global and local acceptances about aging and old ages, the term 'older adults' and the concepts of 'healthy aging' and 'aging in place'.

Aging in human beings is an inevitable and irreversible process that is genetically determined and environmentally modulated. There are different aspects of aging:

- Chronological aging: Describes the time elapsed since the birth of a person.
- Physiological aging: Indicates the body's loss of reserve or ability to maintain an equilibrium.
- Mental aging: Refers to a decrease in the behavioural adaptability.
- Social aging: Expresses the changes in the social ties and roles of a person.
- Economic aging: Explains the deterioration in the economic situation of a person (Yerli, 2017).

The fact that different aspects of aging do not always necessarily overlap makes it difficult to make a universal definition for the aging and a global acceptance for the beginning of the old ages. For instance, each person in a group with same chronological age may be in complete different physiological health conditions, meaning that each one of them have a different physiological age. According to Kalinkara (2011), even though aging does not provide a universal definition, it can be understood as a decline in vital activities and the ability to adapt the environment. Aging has always been considered in relation with one's participation in labour force. In earlier centuries, individuals whose physiological health is so declined that they cannot participate in labour force anymore used to be considered as 'old aged'. Starting from 20<sup>th</sup> century, as most countries adopted retirement as a government policy, the official chronological age for the retirement and receipt of a pension have begun to be accepted as the beginning of old ages in societies. Earlier, any age after 50 used to be considered as an old age in most societies. Then, as life expectancy at birth have increased via the improvements in the field of health and technological advances, acceptances for the beginning of old ages changed too. As of by 21<sup>th</sup> century, in most industrialized countries, the beginning of old ages is accepted as 65 (Kalinkara, 2011).

The terminology that are used to define 'old ages' have evolved through the time as well. Starting from mid-1990's, the terms: 'elderly' and 'senior' have begun to be criticised due to being 'ageist'. In 1995, Human Rights Commission of the United Nations rejected to use the term elderly for the first time and opted to use the term: 'older people'. In 2009, The International Longevity Center issued a media guide to recommend the term 'older adults' instead of elderly and senior. In 2011, Journal of Geriatric Physical Therapy published an editorial message and called journalists to use the terms older adults or older persons over elderly or senior. According to these criticisms, aging individuals are more heterogeneous with age today and they take active parts in all areas of life and society, however, the terms, elderly and senior are more likely to stereotype aging individuals as

frail and physically dependent (Avers et al., 2011). This study prefers to use the term: ‘older adults’ to define individuals at 65 years old and above.

Aging is related to common changes in **physiological health**. Declined immune functions, increased risk for having chronic diseases, especially, hypertension, diabetes, lung, cardiovascular and cerebrovascular diseases are the most common physiological health changes related to aging. Moreover, older adults are at higher risk for having more than one chronic disease. For instance, the study of Marengoni et al. (2011) finds that 24% of the population at 70 years old and above in Germany have at least five chronic diseases at the same time. Another common impact of aging on the physiological health is the decline in the musculoskeletal systems. Loss of muscle mass, stiffness in the joints and failure of ligaments often the limit independent mobility of older adults. Limited mobility is strongly linked to increased fear of falling, actual risk of falling and physical inactivity among older adults. Every one out of three individuals at 65 years old and above are known to fall and injure themselves at least once a year (Kalınkara, 2011). In Turkey, 35,6% of individuals at 65 years old and above cannot walk independently without taking physical support (Turkish Statistical Institute, 2016). Limited mobility and risk and fear of falling lead older adults to restrain their physical activities. World Health Organization (2010a) recognizes the physical inactivity among older adults to be the 4<sup>th</sup> most important mortality factor. According to Turkish Public Health Institution, in Turkey, only 15% of individuals at 65 years old and above regularly exercise and 30% regularly walk (Republic of Turkey Ministry of Health, 2014). Aging is also related to sensory losses in its physiological aspects. Impaired hearing and decrease in the vision affect the ability of older adults to respond to stimulations. Particularly older adults with limited mobility or sensory losses require the alteration of the built environment to maintain an independent living and compensate their daily activities (Kemmet & Brotherson, 2008).

Aging increases the risk of having **mental disorders**. Addition to common life stressors that all age groups encounter, older adults experience more of distresses, such as losses of loved ones, loneliness or deterioration in the economic situation. These stressors are often the main reason of mental disorders. The most common mental disorders among older adults are depression and dementia. Depression is defined as the constant feeling of sadness and loss of interest and often caused by corruptions in brain chemistry, unpleasant life experiences or stress. Unlike physiological health problems, depression in older adults is often underdiagnosed and underestimated, however, it is

strongly related to the increased risk of cognitive impairment and chronic diseases, moreover, linked to possible risk of suicide. In Turkey, 10% of the population at 65 years old and above are diagnosed with depression (Özdemir & Duru, 2009). Dementia is a syndrome that deteriorates the memory and affects the ability of older adults to perform daily activities because it makes them forgetful and confused most times. Older adults with dementia can struggle with remembering people and places that they are familiar with. Alzheimer's is the most common and advanced type of dementia among older adults. In contrary to most European countries, the number of older adults with Alzheimer's and the Alzheimer's related deaths increase in Turkey. (Türkiye Alzheimer Derneği, 2014). Unlike physiological health problems, depression and dementia are not accepted as natural processes of aging and environmental conditions have strong affects over these mental disorders. For instance, older adults with memory disorders are at higher risk of getting lost outdoors and exposing to crime (Yerli, 2017). Accordingly, older adults require the built environment to support their way-finding, orientation and sense of safety to allow their active participation in all areas of the life and society.

Aging is associated with changes in **social ties and roles**. The most important milestone of aging is retirement. In idealized conditions, retirement is supposed to be a pleasurable life phase that individuals have more time available for engaging with leisure activities for self-development, physical activities to maintain health and social activities. However, in real life, factors such as deterioration in the economic situation or shrinking social networks make it harder for some older adults to keep their quality of life at a certain level. Especially after the retirement, older adults have a great amount of free time that they need to fill with new activities. Not being able to engage with these activities in their free time can lead older adults to lose their self-esteem. Socio-economic status can be a strong barrier here for older adults. While, older adults with higher income are more likely to fill their free time with activities such as, arts and cultural events, travelling or charity events, older adults with lower income are more likely to seek for more affordable activities in or close to their homes. This is why availability of public spaces where older adults can engage with leisure, physical and social activities are essential for them (Yerli, 2017). One of the biggest inevitable challenges of aging is loss of spouse, family members and friends. Accordingly, older adults are in higher need for social support. They need to have friends at their age to share the distressing events of life and support each other. On the other hand, especially after they retire, older adults lose their access to spaces such as workplace where they used to meet new people and socialize. According to Yıldız (2013),

older women have a greater ability to cope with loneliness as they are expected to have a stronger relationship with their neighbours compared to men. Some older men in Turkey are also seen to spend most of their time in tea houses<sup>1</sup>. Especially in developing countries, insufficient pension, pension to remain constant despite inflation and increased medical expenses deteriorate the economic situation of older adults. Accordingly, older adults are in higher need for public policies for social support and public spaces where they can engage with affordable and pleasing leisure, physical and social activities (Yerli, 2017).

Perceptions about aging and aging individuals differ from society to society and influence the quality of life among older adults via social norms. Stereotypes, prejudice and discrimination against individuals due to their age is referred as ‘ageism’. Ageism is valid for all age groups, but mostly affect older adults. The most common global ageist approaches are assuming that all aging individuals as physically dependent, demented, non-productive or socially isolated (World Health Organization, 2018). Perceptions of different age groups about In Turkey, being respectful to older adults and showing this respect with certain behaviours is a very important domain of the Turkish culture. For instance, younger individuals often help older adults those who need assistance to cross the streets or carry their bags after shopping to the way home. These kinds of interactions provide great social support for older adults. However, some of the stereotypes about older adults that are particularly more dominant in rural settlements and can put strain on older adults. Some social norms about older adults suppose their withdrawal from taking active parts in the most areas of life and spend great amount of their lives at home (İnce, 2017). In the study of Yaşama Dair Vakıf (2019) involving 1.101 participants at 65 years old and above, 67% of these participants express that they stay at home most of the days and rarely go outdoors. Not engaging with leisure, physical and social activities outdoors due to health problems, lack of support, social norms or the physical constraints of the built environment is an important problem affecting the quality of life among older adults in Turkey.

Despite all the changes in the physiological, mental and social health, older adults can still manage to keep their quality of life at a certain level with a greater combination of individual efforts, public policies and environmental support and achieve a ‘healthy

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<sup>1</sup> Tea houses or coffee houses are informal gathering places for mostly non-working men where they get together, drink tea or coffee, chat, play card games for long hours.

aging'. According to World Health Organization (2015), healthy aging is not the exact situation of absence of health problems, rather, it is controlling the effects of these health problems to minimise their effects on the wellbeing as much as possible. Parallel to most industrialized countries, public policies about aging individuals in Turkey aim to support the independent living of older adults at their homes by providing economic and medical support for those who are in need. Ministry of Family and Social Policies is legally responsible for providing older adults without regular income economic support and medical care at home for those who have chronic diseases. Regardless from their socio-economic status, all individuals at 65 years old and above in Turkey have legal right to use public transportation vehicles free of charge (Yerli, 2017). In addition to these public policies that focus on responding to the core needs of older adults, number of national and local public policies that aim to improve the quality of life among older adults exist as well. For instance, Municipality of Karşıyaka provides free of charge courses including arts, music, sports or computer classes for older adults in its community centres ('Karşıyaka Belediyesi Sosyal Yardım İşleri Müdürlüğü', 2019). However, several studies argue that one of the major problems affecting the quality of life among older adults is related to the physical constraints of the built environment that often detain them from engaging with leisure, physical and social activities (Aykal et al. 2017; Köse & Erkan, 2014; Türel et al. 2007).

## **2.2. Age-Friendliness of the Built Environment**

When individuals age, they tend to confine their travel range to the vicinity of the nearby neighbourhood environment due to age-related changes in their lives such as limited mobility, sensory losses or shrinking social interactions. Accordingly, older adults tend to be more vulnerable to the physical constraints of the built environment (Cachadinha, 2012). Built environment here, refers to structures, features and facilities that are constructed, arranged, maintained and controlled by human beings and being used to live, work or recreate (Weiss et al., 2010). This section examines how the physical characteristics of the built environment affect the spatial experiences and perceptions of older adults.

People tend to continue living at their home and neighborhood of choice when they age, which is called “aging in place”. Aging in place requires the built environment to recognize the specific spatial needs of older adults and allow their full independent participation in all aspects of the society. Older adults can adopt the design of their homes according to changes in their anatomy, however, they cannot intervene to the built environment. Accordingly, older adults require the built environment to be adopted to allow their independent competence via an “age-friendly” design approach (Cachadinha, 2012). According to the guidelines for the age-friendly built environments of the World Health Organization (2007): proximity of necessary destinations for older adults, crime safety, neighbourhood aesthetics and accessible buildings are four important domains of the age-friendly built environments.

**Proximity of destinations** highlights the importance of having access to certain commercial units and public spaces that are related to health in a walking distance. Having access to health-supportive services such as grocery stores or pharmacies in a walking distance is important for the health and independency of older adults. Proximity to these services make it easier for older adults to obtain medical care, purchase medications or healthy food. In their study, Spring (2018) revealed that living in the neighbourhoods that lack these services increase the risk of poor health in older adults. Public spaces that offer recreation opportunities, such as parks, are important health-supportive public services as well. Proximity to these kinds of opportunities are known to increase physical activity and provide health benefits for older adults (Tinsley et al., 2002). The study of Payne et al. (2005) found out that older adults who lived closer to parks reported better perceived health than those have less access.

**Crime safety** includes the aspects of the built environment that influence both actual risk of crime and perceived fear of crime. Deterioration of the built environment send signals that a place is no longer maintained or controlled and shape older adults’ perceptions about the fear of crime. Abandoned buildings, low lightning, enclosed areas, pollution, graffiti and neglected vegetation are often perceived by older adults as signs of built environments’ deterioration. Older adults are more likely to fear of crime even though there is not always an actual risk of crime, because their chances to physically defend themselves in case of a crime is lower than other age groups. Crime safety in the built environment is strongly associated to sense of community in older adults as well. Older adults feel more confident in the built environments where social interactions occur.

Jacob (1961) 's concept of 'eyes on the street' indicates that seeing other people at the streets, places such as coffee shops or parks around, or people sitting at balconies create an informal control system, increase the likelihood that crimes will not be witnessed or discouraged and improve older adults' sense of safety. Accordingly, policies regarding to land-use zoning is an important determinant of crime safety (Kihl et al., 2005).

**Neighbourhood aesthetics** refers to the qualities that contribute to the visual appeal and attractiveness of the built environment. According to Akyüz (2016), neighbourhood aesthetics is related to the harmony between the built environment including residences, public spaces or historical artefacts and natural environment. Neighbourhood aesthetics reflects the identity of a place and significantly affect older adults' independent mobility in the built environment. Recognizable aesthetic qualities of the built environment improve familiarity, legibility and distinctiveness in older adults. For older adults, maps, directions or signs are often difficult and complex to understand, so that they develop a "mental mind" using landmarks and environmental features to orient themselves in the built environment. For instance, a favourite tree may be more orienting for an older adult than a street sign. Especially older adults with dementia's independent mobility in the built environment is strongly dependent to neighbourhood aesthetics. Brittain et al. (2010) indicate that older adults with memory disorders may forget addresses, numbers or street names, but they remember the aesthetic features they are familiar with and use them to orient in the built environment. Absence of sudden disappearance of these features lead to confusion and disorientation in older adults with dementia. Front gardens of residentials, attractive showcases of shops and trees and flowers among the streets are some of the important examples of the aesthetic qualities (Burton & Mitchell, 2016).

**Accessible buildings** refer to being able to enter, use and navigate in public and private buildings. Discussions for the accessible public buildings started in 1950's in the new constructions after World War II in United States for the first time, and spread and evolved through the time. For instance, while the older design approach for accessible buildings considered adding a second entrance for disabled people or older adults those who cannot enter a public building using the main entrance, today's 'universal design' approach re-designs the main entrance to make it accessible for everyone's use. Older adults can adapt their homes to fit their spatial needs, but they cannot intervene to public buildings. Age-friendly public buildings are expected to provide elevators, escalators,



ramps, wide doorways and passages, suitable stairs (not too high or steep) with railings, non-slippery flooring, frequent seating units and public restrooms with handicap access. However, recent trends in urban design promote use of the ramps instead of elevators, escalators and stairs, because older adults can fear of using elevators and escalators or these can stop operating due to electricity failures, and stairs can be barrier to older adults with wheelchair or walking stick (Neal & DeLaTorre, 2009).

Several studies indicate a strong relationship between the characteristics of the built environment and the physiological, mental and social health of older adults. For instance, Balfour & Kaplan (2002) investigates 883 older adults' neighbourhood-built environment characteristics in United States and finds that those who expose to heavy traffic and excessive noise are at higher risk for the loss of physical functions. Berke et al. (2007) studies with 740 older adults in United States and finds that those who report themselves perceiving the walkability of the streets in the neighbourhoods they live are more likely to have depressive symptoms.

World Health Organization (2007) describes that parks can provide individuals opportunities to cope with the stressors of the built environment such as the traffic or air pollution. Parks are recognized to have direct and indirect effects over the public health. According to Ulrich (1993) 's 'Biophilia' hypothesis, humans developed a genetic basis that is programmed to respond positively to the nature as human mind instinctively links the existence of natural elements with an increased chance of survival. The study of Takano et al. (2002) with 3.144 older adults in Tokyo investigates their neighbourhood-built environment characteristics and reveals that those who live in neighbourhoods with higher amount of park acreage have 5 years more longevity. Parks help to reduce the urban heat island effect, clean the air, increase oxygen, calm down the dust and dirt in the air and reduce air pollution, enable air circulation, control humidity and temperature, cool down the air, slow down and direct the wind to desired directions. Additionally, they create natural ecosystems and habitat for flora and fauna and protect biodiversity, balance carbon balance, and storm water infiltration (Byrne & Wolch, 2009). These ecological benefits directly contribute to physiological and mental health of individuals. In their study, Li et al. (2008) finds that exposing to nature make individuals breathe volatile substances that trigger human body to produce more anti-cancer proteins that improve the immune system and these volatile substances stay within the human body up to 7 days. Parks' indirect contributions to physiological, mental and social health is related to the

activity opportunities they provide to individuals. Parks provide opportunities for leisure and physical activities. In their study, Orsega-Smith et al. (2004) reveals that older adults those who use neighbourhood parks frequently tend to be physically more active and have lower levels of body mass index and blood pressures. In another study, Hume (2001) reveals that exercising in parks is more effective than the use of medication (Sertraline) to treat major depressive disorder in older adults. Parks can support the socialization purposes of individuals. Individuals can find a chance for their self-expression in parks independent of their age, sex, social class and economic status in parks (Ceylan, 2007). According to Kweon et al. (1998), parks improve the sense of community in older adults. Older adults those who enjoy the social encounters in parks with other people tend to have stronger social ties with their neighbourhoods.

Across the different types of parks, neighbourhood parks which are expected to be located in a walking distance (800 m) to individuals' homes have privileged value for older adults as most of their activities are bound to the neighbourhood environment (Glass & Balfour, 2003). Neighbourhood parks build ties between urban context and the nature. According to the description of Machabée et al. (2006), neighbourhood parks are 'the most accessible and democratic fragments of the nature'. Individuals with no gardens or exterior spaces in their homes can perceive neighbourhood parks as extensions to their homes. Especially for the older adults with physiological, social, economic or cultural limitations to travel further, neighbourhood parks may be the only accessible places for the socialization, relaxation and enjoyment purposes of older adults.

### **2.3. Summary**

In this chapter, changes in the health of aging individuals and how an age-friendly built environment is expected to adapt these changes are investigated. Aging is related to common changes in the physiological, mental and social health of individuals. As a result of these health changes, older adults are more likely to encounter problems in their ability to take an active part in all areas of the life and society, as the physical constraints of the built environment limit the independency of older adults more than younger individuals. For instance, with increasing age, an individual may begin not to be able to walk to their favourite public open space anymore as problems such as being scared to cross a street

with heavy traffic, that did not used to affect them may become an important constraint. The movement of age-friendly built environments aims to remove these kinds of physical constraints that affect the quality of life among older adults, by recognizing the changes in their physiological, mental and social health and adapt these environments to respond to the age-related spatial needs and expectations of older adults.

In an age-friendly built environment, neighbourhood parks can have significant importance for older adults, as in most cases, neighbourhood parks are one of the most accessible and affordable places where older adults can engage with their leisure, physical and social activities, such as to enjoy the nature, do low-impact physical exercises or hang out with their friends. As a part of the built environment, neighbourhood parks are also needed to be adapted as age-friendly places to allow the uses of all older adults without encountering barriers. The next chapter details the physical and social characteristics of age-friendly neighbourhood parks according to the recommendations of the literature of urban design.

## CHAPTER 3

### FACTORS AFFECTING THE USES OF NEIGHBOURHOOD PARKS BY OLDER ADULTS

Neighbourhood parks as most important components of public open spaces are used by different user groups for different purposes. Activities of park users and their park use characteristics are often determined by the socio-spatial characteristics of these parks. Among different user groups, older adults commonly use neighbourhood parks to enjoy the nature, be surrounded with other people, engage with daily leisure activities such as reading newspapers, and participate in low-impact physical activities. These activities of older adults that take place in neighbourhood parks contribute to their physiological, mental and social health. On the other hand, not all older adults use neighbourhood parks, commonly due to physical and social characteristics of these parks and park surroundings not responding to their age-related spatial needs and expectations.

This chapter analyses the interpersonal, intrapersonal and structural factors affecting the use of neighbourhood parks among older adults. First, the chapter briefly investigates how age relates to use of neighbourhood parks across different user groups, then it focuses on older adults and how socio-economic differences affect their park use. Next, the chapter investigates the physical and social characteristics of parks and their surroundings affecting the use of neighbourhood parks among older adults, how identifies the characteristics that contribute to the ‘age-friendliness’ of neighbourhood parks. Finally, the chapter explores well-known urban design examples for age-friendly parks.

#### **3.1. Socio-Economic Characteristics of Park Users**

Differences in the needs and expectations of different park user groups affect their park use purposes and park use characteristics. According to Tinsley et al. (2002), most of the studies on the use of parks often focus on the needs and expectations of ‘young, white, middle and upper-middle class’ individuals and develop standardized ‘park norms’ in terms of park design and programming. These park norms often lead to the exclusion

of some of the potential user groups from the neighbourhood parks. Women and older adults are two of the least represented user groups in parks (Byrne & Wolch, 2009). This section investigates how socio-economic differences affect the use of parks, particularly among older adults.

**Children** are one of the user groups that are in ‘high-need of parks’ (Boone et al., 2009). Playing outdoors is one of the most important contributors of the physiological, mental and social development among children. Neighbourhood parks as most proximate public open spaces available near the schools and homes of children allow them to explore the nature, take advantage of fresh air and sunlight, enjoy playing and socializing with their friends and families. Playing in neighbourhood parks is a great opportunity for children to have fun and be physically active, and contribute to their health by decreasing the risk for cardiovascular and chronic diseases, and obesity (Boreham & Riddoch, 2001; Proshanski & Fabian, 1987). Use of neighbourhood parks among children is strongly dependent to the perceptions of their parents about the safety of parks. Especially for children aged between 2 – 5 years old, three factors are essential in neighbourhood parks: regular maintenance of playgrounds, as broken parts can injure children; physical and visual protection from the streets and traffic; and existence of seating units surrounding the playgrounds, as children these ages can only use neighbourhood parks in supervision of their parents. For children aged between 6 – 12 years old, ‘attractiveness’ of neighbourhood parks gains importance. Children these ages expect neighbourhood parks to support their need for creative play and sense of adventure via challenging, large and varied playgrounds (CSIR, 2000).

**Teenagers** aged between 13 – 18 years old are often interested in the social uses of neighbourhood parks. They seek for places where they hang out with their friends in larger groups in privacy (Lieberg, 1995). While teenagers want to have dedicated meeting places, due to factors such as lack of pocket money or parental restrictions, they cannot always go far away from the boundaries of their neighbourhoods. Accordingly, they often consider neighbourhood parks as where they can hang out or play with their friends in freedom and privacy. Larger lawn areas, picnic tables, public restrooms, sports fields and skate parks are some of the most common factors that make neighbourhood parks more attractive for the perceptions of teenagers (Edwards et al., 2015). Teenagers and the use of parks is often an issue that is not much emphasized. However, according to Mintzer (2017), most teenagers today are physically inactive and use of social media for most of

the socialization purposes damages to the social development of teenagers, as a result, they are at higher risk of health problems such as obesity or depression. In their report, Mintzer (2017) suggest that use of neighbourhood parks among teenagers to increase their participation in physical and social activities can be promoted via park facilities such as zip-lines or built-in ping-pong tables.

**Adults** commonly use neighbourhood parks to rest, enjoy the nature, engage with physical activities and for parental purposes. In their study, Kaştaş-Uzun (2016) finds that childcare is the main park use purpose of the study participants those who are between 26 – 45 years old. Adults using neighbourhood parks for childcare purposes expect sufficient numbers of and comfortable seating units that are protected from sun, public restrooms and drinking water taps (Sallis et al., 1997). Hutchison (2009) tells that parks create opportunities for women with children to socialize with other parents in these parks. While women without children are often underrepresented in neighbourhood parks, men often use parks to engage with physical activities and particularly show a preference for walking trails, basketball and tennis courts in parks (Kaczynski et al., 2014).

**Older adults** often perceive the use of neighbourhood parks as an opportunity to be in nature and surrounded by other people, engage with their daily leisure activities such as to read newspapers outdoors and low impact physical activities such as to walk, and socialize. After their retirement, older adults are expected to have more free time available. Especially younger individuals tend to imagine older adults as travelling the world, doing gardening activities or having the ability to engage with any other activities they want. On the other hand, not all older adults have the ‘resources’ such as physiological health, motivation or income to engage with these kinds of stereotyped activities. Particularly, not being able to spend their free time with leisure activities and loneliness at home as important challenges of aging, lead older adults to seek for pleasurable and affordable outdoor places where they can feel more vivacious and less lonely. For these purposes of older adults, neighbourhood parks as most proximate public open spaces to their homes, have a particular importance to support daily leisure, physical and social activities of older adults (Düzenli & Özkan, 2016; Loukaitou-Sideris et al., 2014). According to Kang (2005, cited in Lee, 2012), older adults tend to use neighbourhood parks as a part of their daily routines, they often systematically visit these parks at the same time of the day for the same purposes, stay there for the same duration and often regardless of the season. Park use characteristics among older adults is strongly

dependent to their sense of comfort and safety in neighbourhood parks. Hung & Crompton (2006) conduct a study to analyse the main motivations and constraints to park use among older adults. Participants express enjoying the weather, nature and activities of other park users, physiologically feeling healthier and socializing with other people as main motivations for the park use. Regardless from age, these participants report physiological health problems such as being unable to walk far or impaired vision; nuisance problems in parks, for instance, being disturbed by the ‘unethical behaviours’ of younger park users or pollution in parks; and lack of interest. The study observes that park use characteristics of participants aged at 80 years old and above are more affected by interpersonal factors, as these participants, especially women, complain about the existence of too many strangers in parks and too many male park users.

Among with age, **gender** as an efficacious socio-economic variable strongly affects the park use characteristics of individuals in neighbourhood parks. According to United Nations Population Fund (2007), men and women still have ‘inequal access’ to public open spaces. The most common reasons of these inequalities affecting the park use of women negatively are related to gender-based role segregations and sense of safety. Deem (1986) indicates that most of the leisure activities of women outdoors are often considered as an obligatory continuation of their ‘traditional family roles’. Women in neighbourhood parks are often seen supervising their children at playgrounds, or resting for a few minutes after their daily shopping routines. Furthermore, many women believe that they do not have the for engaging with leisure activities in parks due to dominant homecare ‘responsibilities’ (Gibson, 2017; Hutchison, 1994). Another common constraint to park use among women is fear of crime. While younger women are more likely to feel fearful due to the risk of sexual assault, older women are often afraid of theft, verbal assault and physical abuse. According to Gordon et al. (1981), the fear of crime in older women is not necessarily related to an actual threat. Perceptions that take shape according to previous negative incidents or news on the media make older women more fearful in public open spaces, because they consider themselves to be more vulnerable in case of exposing to crime due to lower physiological strength.

**Education and income level** as two important socio-economic variables often show parallel ties in the way they influence access to parks and park use characteristics of park users. Several studies assume that well-educated individuals with higher income live in neighbourhoods where they have better access to parks (Mowen et al., 2005;

Burgess et al., 1998; Zhang & Gobster 1998). However, access do not always guarantee park use. These individuals with higher income and better access to neighbourhood parks may also have access to private green space alternatives such as proprietary gardens or gardens of the apartment complexes they live. For instance, in the study of Şenol (2019), a neighbourhood in Izmir that is consist of luxurious gated communities and have great amount of park acreage, most parks there lacked park users. Moreover, as individuals with higher income are expected to have more financial resources, they may tend to visit larger and more ‘attractive’ public open spaces instead of neighbourhood parks. In addition to access to parks, park use characteristics of park users are influenced by education and income. While park users with higher education and / or income level often use neighbourhood parks for daily activities such as to walk their dogs or exercise, park users with lower education and / or income are more likely to use parks for traditional stationary activities such as to rest (Willemse, 2010; Zhang & Gobster, 1998).

Among with these socio-economic characteristics of park users, factors known as **personal resources** can relate to the use of neighbourhood parks. Health status of park users is one of the most important personal resources that especially affect the park use of older adults. Studies of Nygård & Starkhammar (2007) and Seeland & Nicole (2006) reveal that limited mobility and dementia are two particular constraints to park use among older adults, as while older adults with limited mobility are often afraid of injuring themselves in parks, older adults with dementia worry about not being able to find their way back to their homes.

In this section, the most efficacious socio-economic variables affecting the use of neighbourhood parks are investigated. The incoming sections examine the main focus of this study: the physical and social factors about neighbourhood parks affecting the uses of these parks by older adults in three phases: neighbourhood characteristics, access to neighbourhood parks, and characteristics of neighbourhood parks.

### **3.2. Characteristics of Neighbourhood Environments**

To understand the physical and social factors affecting the use of parks among older adults, neighbourhood parks should be evaluated with the characteristics of the neighbourhoods that they are located within. Topographical characteristics and land-use



characteristics of neighbourhoods affect the likelihood of walking in older adults and accordingly, their uses of neighbourhood parks. Additionally, 'pleasantness' of social encounters in public open spaces such as streets affect the social characteristics of the neighbourhoods and can motive or deter the uses of neighbourhood parks among older adults (Bedimo-Rung et al., 2005).

Older adults are expected to encounter physiological health changes affecting their independent mobility. Accordingly, older adults may not walk on the lands that require too much energy expenditure. As a result, **topographical characteristics** of the neighbourhoods that older adults live become one of the most important determinants of their independent mobility. In their study, Parra et. al. (2010) analyse the effects of slope of the terrain over the park use among older adults and find that in neighbourhoods with higher slope of the terrain (more than 5%) older adults report a reduced likelihood of frequent park uses. Older adults expect their walking routes to be flat or very gently sloped (less than 2%). Sudden grade changes and steep streets not only decrease the motivation of older adults to visit neighbourhood parks, they also put older adults at higher risk of falls and injuries (Loukaitou-Sideris et al., 2014).

**Land-use characteristics** surrounding neighbourhood parks have a crucial role in shaping the park use characteristics of individuals. Preferences of older adults about having only residential or mixed-uses surrounding these parks show differences among studies. In their study, Parra et. al. (2010) find that living in neighbourhoods with commercial facilities such as small convenience stores or coffee shops motivate older adults to leave their homes and increase their likelihood to visit neighbourhood parks. In contrary, the study of Kaştaş-Uzun (2016) finds that older adults prefer to be surrounded by residential facilities instead. Here, functions of these different land-uses appear to affect the perceptions of older adults about sense safety. For instance, participants in the study of Kaştaş-Uzun (2016), especially older women in a neighbourhood park feel overwhelmed and insecure due to a tea house adjacent to a park attracting too many stranger men and noise. In their guidelines for age-friendly parks, Loukaitou-Sideris et al. (2014) suggest parks to be located adjacent to land-uses that can support 'aging in place' of older adults. These land-uses can be, smaller scale health institutions, religious facilities, community centres or libraries, and commercial units that are necessary to be located close to the homes of older adults to make them compensate their independent livings, for instance, grocery stores or pharmacies. When these public and private places

work together with neighbourhood parks, they can contribute to the sense of community of older adults. Community centres or libraries can use neighbourhood parks to organize events, or older adults can use these parks to rest and enjoy the weather after they complete their daily shopping routines and lead their way to the home. For instance, in the study of Şenol (2019), a neighbourhood park adjacent to an elementary school is observed to be using by older adults those who are responsible for picking up their grandchildren after their lessons come to the park early to socialize.

Public open spaces in neighbourhoods, the streets, parks, are all open to chosen, democratic and spontaneous actions of all individuals (Lynch, 1972). These places can create transitions from private the home / family space to the public sphere as some individuals may perceive them as extensions to the home (Mills, 2007). Accordingly, neighbourhood parks as the of the core public open spaces in neighbourhood scale are expected to reflect the **socio-economic and cultural characteristics** of neighbouring individuals. In private places such as shopping malls, individuals must follow certain rules. These rules are not only written ones such as smoking ban or opening / closing hours, but ‘unwritten’ rules as well, that informally force individuals to follow some behavioural rules, for instance, to dress up well, or avoid talking loudly or rude (Mean & Tims, 2005). However, considering their ‘public’ aspect, neighbourhood parks are not supposed to have these kinds of unwritten rules. Neighbourhood parks allow self-expression of all regardless of their socio-economic and cultural characteristics. Accordingly, social encounters between these individuals with different characteristics in neighbourhood parks are inevitable (Byrne & Wolch, 2009). However, these social encounters may not be ‘pleasing’ for all park users. Behavioural differences in between park users may deter any groups, but especially older adults from using neighbourhood parks, because their perceptions about sense of safety and sense of comfort are more fragile to the way others behave in and utilize the neighbourhood places. For instance, while younger individuals may consider graffiti on the walls across the neighbourhoods as art, older adults may perceive them as ‘deviant behaviour’ and ‘signs of vandalism’ (Loukaitou-Sideris et al., 2014; Aspinall et al., 2010; Gold, 1977).

### 3.3. Access to Neighbourhood Parks

Neighbourhood parks as important public open spaces that are provided through public resources are expected to serve all individuals equally. On the other hand, in most cases, access to neighbourhood parks is not guaranteed for all. Access here, is related to the availability and spatial distribution of neighbourhood parks (the amount of park acreage across neighbourhoods) and the ability of individuals to get to these parks independently, especially by walking or other transportation options.

‘**Availability**’ of neighbourhood parks is related to the amount of park acreage in a neighbourhood, which is often measured by park acreage per capita (Bedimo-Rung et al., 2005). Most countries specify minimum required amount of different types of green space acreage via planning laws and regulations. In Turkey, the first law that defined a minimum required amount of green space acreage per capita was provided via “Municipal Buildings and Roads Law” (2290 Sayılı Belediye ve Yapı Yollar Kanunu) in 1933, which proposed 4 m<sup>2</sup> of green space acreage (including groves, meadow, lakes and playgrounds) per capita. In 1956, new “Development Law” (6785 Sayılı İmar Kanunu) updated the minimum required green space acreage as 7 m<sup>2</sup> per capita. Later in 1972, definitions about green space were expanded as green spaces were categorized in two types: “active green spaces” that include neighbourhood parks, playgrounds and sports fields, and “passive green spaces”. In 1999, “Development Law” (23804 Sayılı İmar Yönetmeliği) re-defined the minimum required active green space acreage as 10 m<sup>2</sup> per capita. According to the Law, a neighbourhood with 15.000 population is required to provide minimum 2 m<sup>2</sup> neighbourhood park acreage per capita (Aksoy, 2001). However, the standards for minimum required neighbourhood park acreage per capita are relatively lower compared to several other countries (Table 3.1.).

Table 3.1: Comparison of minimum required neighbourhood park space standards  
(Source: Aksoy, 2001)

	Turkey	France	U.S.A.	Italy	Sweden	Poland	U.K.
<b>Minimum required neighbourhood park acreage</b>	2 m <sup>2</sup> per capita	4,2 m <sup>2</sup> per capita	3,9 m <sup>2</sup> per capita	5,5 m <sup>2</sup> per capita	5,6 m <sup>2</sup> per capita	15 m <sup>2</sup> per capita	20 m <sup>2</sup> per capita

Neighbourhood parks are expected to be available for all individuals with an equal **spatial distribution** in terms of quantity (amounts of park acreage per capita) and quality. Some user groups: older adults, children, women and low-income groups are assumed to be in ‘high-need of parks’ as for these groups, public open spaces may be only affordable places where they can be in nature, engage with leisure, physical and social activities and express themselves in public. However, in contrary to idealized definitions, often those who are in high-need of parks are the ones have less access to parks. In their study, Wolch et al. (2005), develop an equity-mapping analysis to dedicate the park-rich and park-poor neighbourhoods in Los Angeles, and find that neighbourhoods where mostly low-income groups live have significantly less numbers of neighbourhood parks available. In their study, Boone et al. (2009), analyse the spatial distribution of neighbourhood parks in Baltimore, and reveal that even though great numbers of neighbourhood parks available in neighbourhoods where mostly low-income groups live, park acreage of these park spaces are lower compared to the neighbourhoods where mostly high-income groups live. In her study, Şenol (2019) evaluates the neighbourhood parks in Izmir according to the “need-based equity” using GIS-based analyses, and finds a negative relationship between the neighbourhoods where mostly user groups in high-need of parks live and the spatial distribution of the neighbourhood parks.

**Proximity** of neighbourhood parks to the homes of individuals is one of the most important factors that affect their use of parks. Individuals, especially older adults expect neighbourhood parks to be located in their footsteps. Proximity is related to the minimum required walking distance of individuals to get closest parks. How many meters indicate a ‘walking distance’ differ for every individual according to their age and health conditions. Several studies indicate 800 meters as the common service impact area for neighbourhood parks (Duncan et al., 2011; Herzele & Wiedemann, 2003; Aksoy, 2001). On the other hand, considering the possible physical constraints of the built environment such as heavy traffic or poor sidewalk quality, and limited mobility of older adults, 800 meters is less likely to indicate an ideal walking distance for older adults (Nagel et al., 2017; Tucker et al. 2007; Cohen et al. 2006). For instance, in their study, Schipperijn et al. (2010) find that 53,5% of 11.238 randomly selected individuals across Denmark have access to neighbourhood parks in less than 300 meters to their homes, and 46,8% of them use these parks every day, while the ratio of daily visitors decrease to 28,4% for those who do not have access in 300 meters. The European Commission (2000) uses the concept

of ‘within 15 minutes walk’ to define access to public open areas and other public service areas, and accepts *300 meters* for this concept considering the physiology of older adults.

Walking to neighbourhood parks is not only related to the access, but it is also an opportunity for older adults to stay active. Walking to neighbourhood parks itself can be considered as a low-impact physical activity (Payne et al., 2015). Moreover, older adults frequently walking to neighbourhood parks have opportunities to interact with other people in their neighbourhoods, for instance, the neighbouring individuals, owners of local stores or the street sweepers. According to Harnik & Simms (2004), these kinds of interactions are important for older adults to have a stronger sense of community, and must be promoted for healthy aging.

Proximity of neighbourhood parks itself may not necessarily guarantee access for older adults. **Walkability of the streets** is another significant determinant of the access to neighbourhood parks. Most countries provide laws and regulations to define standards for ensuring access to public service areas. The Turkish Standards Institute provides standards and design guidelines for the independent mobility of especially disabled individuals and older adults with the regulation called ‘Urban roads - Structural preventive and sign design criteria on accessibility in sidewalks and pedestrian crossings’ (TS12576: Şehir içi yollar - Kaldırımlarda ve yaya geçitlerinde ulaşılabilirlik için yapısal önlemler ve işaretlemelerin tasarım kuralları). Nevertheless, several studies evaluating sample public open spaces across Turkey to analyse if they meet these standards reveal that most components of the built environment, for instance, the height and width of the sidewalks or the slope of ramps fail to meet these standards that are provided by Turkish Standards Institute in these spaces (Aykal et al., 2017; Olgun & Yılmaz, 2014; Köse & Erkan, 2014). In their study, Türel et al. (2007) ask older adults in a neighbourhood park in Izmir about the major constraints to their park use, and the biggest problem affecting their access to the park and their park use appear to be about the height and width of the sidewalks, and the incomplete road maintenance works.

Walkability of the streets is measured with the sufficiency of the **sidewalk quality** to meet the physiological needs of older adults and make walking more attractive for them. According to Türel et al. (2007), sidewalks must be continuous, have *maximum 15 cm height* and *minimum 150 cm width*, have non-slippery and matte material with non-confusing patterns, and have ramps with no more than *6% slope*, to allow the independent mobility of older adults. Older adults may not walk continuously for longer durations.

Accordingly, there must be frequently distributed seating units along their walking route to allow them stop and rest for a few minutes. Exposing to too much sun may be an important problem for the walking of older adults. For the protection from the sun and also aesthetical purposes, there must be mature street trees. Mature trees can also have an important role to support way-finding for older adults with dementia, as it is observed that even though older adults with dementia at higher risk of forgetting street names and other details, they may remember certain landmarks such as a large tree with attractive colours and use them for way-finding (Loukaitou-Sideris et al., 2014; Burton & Mitchell, 2006). Another important factor that promotes walking among older adults is the availability of different land-uses along their walking routes. Local shops and stores can have a strong influence on the sense of comfort and sense of safety among older adults, as while they are walking, they enjoy observing the windows of these shops, looking for the prices, they can stop for a while and buy their urgent needs or chat with the owners of the shops (Loukaitou-Sideris et al., 2014).

As important as the sidewalk quality, **protection from the traffic** is a must for the walkability of the streets. For this purpose, sidewalks must have minimum 25 cm security band in the ownership side, and 50 cm in the bordure side. For the level crossings, if the road wideness enables passing in two levels, there must be a waiting island in the middle refuge, and they must be visible for all and have traffic sings. Traffic lights must provide buttons with haptic and sound feedback for those individuals with impaired vision or hearing. The crossing time must be adequate for older adults as they may walk significantly slower than younger individuals. For instance, in Singapore, to overcome the problem of older adults' fear from crossing the streets, a system is integrated to traffic lights that allows individuals at 65 years old and above to tap their identity cards at the traffic lights to gain more time to cross the streets (Tan, 2019). As a trending urban design implementation, 'diagonal zebra crossings' that stop the traffic for all vehicles and allow pedestrians to cross the streets in all directions can be applied to ease the walking among older adults in pedestrian-dense areas (Shine, 2018).

### **3.4. Physical and Social Characteristics of Neighbourhood Parks**

Physical and social characteristics of neighbourhood parks take shape according to their design, in relation to the park layout and natural features; the types of activities that park users engage with and existence of the park facilities that allow these activities to take place; maintenance status; and social interactions between the park users. This section investigates how each of these factors related to the neighbourhood parks affect the use of parks among older adults.

#### **3.4.1. Park Design and Parks' Natural Features**

Design of neighbourhood parks is the primary determinant of how 'attractive' do individuals perceive these parks. Preferences for the design characteristics of different user groups may differ from each other, for instance, younger user groups may prefer parks with more built facilities that support their physical activities, while older adults often expect to see more of natural features in neighbourhood parks (Payne et al., 2002). This section examines the park design characteristics of neighbourhood parks that contribute to their age-friendliness, based on the visual appeal of neighbourhood parks in neighbourhood scale, characteristics of park layouts, and existence of natural features.

Perceptions of individuals about the attractiveness of neighbourhood parks begin to take shape based on the **visual appeal of parks** from outside, in the neighbourhood scale. Visual appeal of neighbourhood parks has a privilege importance for older adults, as they expect to see what is going on inside these parks to decide if they are 'welcoming' for them (Loukaitou-Sideris et al., 2014). Neighbourhood parks with walls blocking their view from outside can affect the sense of safety among older adults. For instance, in the case of the revival of 'Bryant Park' in New York City, one of the very first urban design interventions were the removal of park walls and placement of small kiosks at the entrance of the park to make it more attractive and welcoming (Project for Public Spaces, 2000). Especially for older adults with dementia, provision of park signs indicating the park name at the entrance of neighbourhood parks and way-finding signs across the neighbourhood are importance design elements of age-friendly parks to support the independent use of these parks and way-finding among older adults. Another important

urban design element for this purpose is the use of noticeable architectural features such as sculptures or a clock tower to act as landmarks for older adults to ease their way-finding (Loukaitou-Sideris et al., 2014).

Design of neighbourhood parks is strongly related to the **layout of parks**: spatial distribution of the park facilities and the walking routes. Neighbourhood parks need to achieve a balance in between the number, acreage and spatial distribution of the built facilities and natural features to allow all users to enable their activities and enjoy their uses of parks. McBride (1999) (cited in Loukaitou-Sideris et al., 2014), recommends the ratio of 70% natural features ('softscapes') and 30% built facilities ('hardscapes'). Distribution of the park facilities can affect the use of neighbourhood parks among older adults, as while some park facilities relate to each other, such as restroom and café, and proximate placement of these facilities can increase the sense of comfort among older adults, some park facilities can lead to nuisance problems. For instance, existence of a basketball court near a playground can deter parents and grandparents from bringing the children to parks as they may worry about the way teenagers in basketball court behave and talk to each other to affect their children (Bedimo-Rung et al., 2005). According to Loukaitou-Sideris et al. (2014), layouts of neighbourhood parks must be legible to be comprehended easily from the entrance and help older adults orientate via park signs and sensory guides such as flower beds among the walking routes. To allow the independent mobility of older adults, especially those with wheelchairs, walking routes must be flat, curvilinear, have non-confusing patterns and non-slippery materials. Dead-ended walking routes and visually blocked areas in neighbourhood parks can increase the fear in older adults as these kinds of areas may bring individuals with 'unwanted purposes' such as drug use to these parks (Loukaitou-Sideris et al., 2014; Byrne & Wolch, 2009).

Number and variance of natural features have a crucial role in attracting older adults to neighbourhood parks, because one of their most important motivations to park use is to **enjoy the nature** (Aspinall et al., 2010; Sugiyama et al., 2009). The desire of older adults to interact with the nature in their use of neighbourhood parks can be evaluated in guidance with the 'Attention Restoration Theory' by Kaplan & Kaplan (1989). According to Kaplan & Kaplan (1989), being surrounded with man-made structures in the built environment all the time require individuals to pay 'directed-attention' to certain stimulations, for instance, to heavy traffic in order to protect themselves from the risk of accidents. Exposing to these stimulations all the time drain



the mental energy of individuals and lead them to a mental fatigue. At the same time, in nature-rich environments, individuals do not have to pay directed attention to that many of stimulations, so that they find chances to relax and renew their directed-attention ability in these kinds of environments such as parks. These health benefits provided through natural features are important for all, and especially for older adults as they are expected to have less tolerance to the physical constraints of the built environment, and more in need to interact with nature. For instance, in their study, Hume (2001) reveals that spending time in nature-rich areas to especially walk or exercise is more effective than the use of medication (Sertraline), to treat depression in older adults. In another study, Orsega-Smith et al. (2004) find that older adults with higher levels of stress tend to spend more time in neighbourhood parks, as they report themselves to be in a better mood after their park visitation. The study measures participants' blood pressures before and after they visit neighbourhood parks, and find that these participants leave parks with lower systolic blood pressures.

The kinds of natural features that can be provided in the design of neighbourhood parks are often dependent to geographical characteristics, park size and park budget. Among these natural features, **mature trees** have significant importance for older adults according to the number of benefits they provide. The most important role of mature trees related to their ecological benefits that also contribute to the sense of comfort of older adults in their uses of neighbourhood parks. Mature trees help reducing the 'urban heat island effect' by controlling the temperature and humidity, enabling the air circulation, and controlling the wind. Existence of mature trees covering the park facilities for stationary activities such as benches or a cafe is crucial for the **protection from the sun** among older adults especially in heat waves, as older adults have less tolerance for exposing to sun for longer durations. Using neighbourhood parks can be a great way to cope with heat waves for older adults if they perceive these parks to be cooler than their homes (Arnberger, 2017). The other way, neighbourhood parks that fail to provide protection from the sun in heat waves may remain unused. In their studies, Şenol (2019) and Kaştaş-Uzun (2016) find that lack of protection from sun in the neighbourhood parks of Izmir is one of the biggest constraints to park use.

Different types of natural features in neighbourhood parks such as flowers, bushes; water features such as ornamental pools; and existence of wildlife such as birds and ducks can provide '**therapeutic effects**' for older adults. Hull & Michael (1995) find

that older adults interacting with natural features in neighbourhood parks feel tranquilized, and stay calm for hours after they leave these parks. Seeing, smelling and touching to different types of vegetations in different colours, fragrances and textures; listening to the sound of water features; and watching the unthreatening wildlife in neighbourhood parks can address the senses of older adults and provide healing effects, for especially older adults with memory disorders (Loukaitou-Sideris et al., 2014). Loukaitou-Sideris et al. (2014) also recommend provision of gardening activities in neighbourhood parks as a beneficial active recreation opportunity for older adults.

### **3.4.2. Park Facilities and Older Adults' Activities in Parks**

Neighbourhood parks are open for planned and unplanned, stationary and vigorous activities of all. Often, types of activities that park users can participate in neighbourhood parks are determined by the available park facilities. This section investigates the activities that older adults expect to participate in neighbourhood parks and the park facilities that are recommended for age-friendly parks.

Older adults often use neighbourhood parks to engage with 'traditional' stationary leisure activities, for instance, to rest, observe the nature or read newspapers. To allow older adults engage with these kinds of leisure activities comfortably, **seating units** as one of the core elements of neighbourhood parks are important in terms of their quantity and quality. Problems with the number, distribution and comfort of seating units may deter older adults from using neighbourhood parks or spend more time there. For instance, in the study of Kaştaş-Uzun (2016), park users complain about the distribution of seating units due to not allowing to sit in groups and socialize in privacy. In the study of Chen et al. (2016), older adults report themselves to bring portable seating to parks due to lack of adequate numbers of seating units.

According to Loukaitou-Sideris et al. (2016), seating units must be oriented to 'things to watch' such as an ornamental pool and flower bodies to let older adults enjoy the park environment, distributed to allow older adults sit alone at some areas to enjoy the quietness and arranged such as on a circle facing at some areas to allow sitting in groups to socialize. Seating units must be made of *heat-resistant natural materials* to increase comfort and seats of these units must be located at least *40 centimetres* from the

ground (Loukaitou-Sideris et al., 2016; McBride, 1999). Loukaitou-Sideris et al. (2014) recommend for age-friendly parks to offer different types of seating units, especially moveable seating units that allow older adults to customize the place according to their activities.

Existence of the **public restrooms** and **drinking water taps** can be considered as necessities by older adults due to their anatomical needs (Gibson, 2017). In the studies of Aspinall et al. (2010), Day (2008) and Gobster (2002), older adults indicate the existence of these park facilities as important motivators to their park use as they allow older adults to stay in parks for longer durations. Public restrooms in neighbourhood parks must be clean, and accessible for park users with wheelchair.

Older adults often use neighbourhood parks to combine some of their leisure and social activities. They seek opportunities in neighbourhood parks to evaluate their free time and socialize. Especially lonely older adults may consider neighbourhood parks as places where they can meet with new people and cope with loneliness (Yang et al., 2012). Certain park facilities can respond to these purposes of older adults by supporting their leisure and social activities in neighbourhood parks. Stafford (2009), calls these facilities that bring people together around a common focus as **'foils for conversation'**. Café or kiosk, picnic tables, ornamental pools, flower bodies, stage for events and similar park facilities that can attract individuals and gather them to allow social interactions to occur can operate as foils for conversation.

Existence of **café** as a park facility supporting leisure and social activities of older adults can motivate them to visit neighbourhood parks and stay in these parks for longer durations. In their study, Aspinall et al (2010) with 282 older adults across Britain find that the biggest motivation to park use among the participants is the existence of café in parks. Existence of an affordable café in neighbourhood parks can allow older adults to gather in larger groups, carry their daily leisure activities such as reading newspapers to parks, enjoy the park environment while having food or beverage. Özdemir (2007) indicates that starting from early 1990's, most individuals in Turkey have shifted most of their leisure activities from public open spaces to privatized places such as shopping malls. Because these places address the perceptions of individuals about the sense of comfort and sense of safety that are important for all, and especially older adults, for instance, via professional security, attractive cafés, restrooms, elevators, climate control. However, these privatized places fail to respond to the needs of individuals to interact

with nature, self-express themselves, meet with new people (Özdemir, 2007). Existence of café in neighbourhood parks may be an age-friendly element that improves the perceptions of older adults about the sense of comfort and sense of safety. Furthermore, café in neighbourhood parks can provide income for municipalities to keep these parks well-maintained (Byrne & Sipe, 2010). On the other hand, the existence of cafés in neighbourhood parks may be perceived by some older adults as ‘signs of gentrification’ (Cohen, 2014). Certain implementations for, for instance, letting the non-customers to use the chairs and tables of these cafés, keeping the prices affordable, allowing informal organizations of individuals there not to damage the **‘public’ aspects of neighbourhood parks** can contribute minimizing the potential negative perceptions of some older adults about the existence of cafés in these parks.

Older adults enjoy evaluating their free time in neighbourhood parks with **playing board or card games** with their friends, **reading books** or newspapers, or carry some of their **hobbies** to these parks such as knitting (Düzenli & Özkan, 2016; Yang et al., 2012). Loukaitou-Sideris et al. (2014) recommend age-friendly parks to provide opportunities for board games and card games via game tables or picnic tables. Additional park facilities, for instance, small library units to donate and exchange books, bulletin boards and newsstands providing local news can be beneficial for older adults, as great proportion of them do not use the Internet to access the news (Loukaitou-Sideris et al., 2014).

Neighbourhood parks can be utilized by individuals for the organizations of **formal and informal events** for public activities and entertainments. These events can be celebrations, movie nights, sales of works, and different cultural organizations. For instance, in Turkey, most municipalities host Ramadan<sup>2</sup> entertainments in neighbourhood parks, including several entertainments, for instance, traditional theatre shows, orchestral concerts, sales of regional food, beverage or souvenirs in temporary stands, installation of inflatable playgrounds for children (‘IBB Kurumsal’, 2019). These entertainments may have particular importance for older adults as a continuation of the tradition. Older adults enjoy sharing their memories about the old days with younger individuals, and they can

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<sup>2</sup> Ramadan is the month that Muslim individuals fast during the day hours. Individuals those who fast during the day often realize most of their leisure activities in the evening. During Ramadan month, individuals gather in larger groups composed of their friends and families in public open spaces and stay there sometimes until even after the midnight.

find a chance to improve their social ties with neighbouring individuals and sense of community in these kinds of events in neighbourhood parks.

Certain park facilities of neighbourhood parks, for instance, exercise equipment or walking trails can encourage older adults to participate in **low-impact physical activities**. According to World Health Organization (2010a), physical inactivity in older adults is one of the most important problems affecting their quality of life and the mortality. Promoting physical activities for older adults in neighbourhood parks as an affordable and attractive opportunity can be considered as a part of public policies for the healthcare (Bedimo-Rung, 2005). According to Barton & Pretty (2010), engaging with physical activities in naturally-rich environments (referred as ‘green exercise’) is more beneficial than the indoor physical activities as interacting with the nature at the same time provide additional health benefits such as reducing stress, anxiety and even symptoms of depression. Taiwan as an aging country develops public policies to adapt the design of its existing parks to provide ‘geriatric’ exercise equipment, and allow and encourage sports instructors to organize exercise or dance classes in these parks for older adults voluntarily or accepting donations. As a result, older adults extensively use parks in Taiwan to engage with low-impact physical activities (Pleson et al., 2014). Geriatric exercise equipment are (also known as the ‘playgrounds’ for older adults) specifically designed to meet the anatomy of older adults to minimize risk of falling and injuries in older adults. Walking as one of the favourite park use activities of older adults can be supported as a physical activity in neighbourhood parks via walking trails with non-slippery and soft materials (Chow et al., 2016; Loukaitou-Sideris et al., 2014).

### **3.4.3. Older Adults’ Perceptions About Safety in Parks**

Perceptions of older adults about safety in neighbourhood parks can be one of the most important barriers to park use in older adults in case of feeling unsafe. According to Bedimo-Rung et al. (2005), safety in parks refers to both **objective safety**, indicating the actual risk of crime and incidents, and **perceived safety** that is triggered due to ‘nuisance’ factors: lack of maintenance and ‘conflict’ with other park users. This section investigates the physical and social factors in neighbourhood parks affecting the perceptions of older adults about safety.

Crime safety in neighbourhood parks is realized through both formal and informal control mechanisms. Often, local municipalities are responsible for the **formal control** of neighbourhood parks via security guards (Madge, 1996). According to Loukaitou-Sideris et al. (2014), technological advances, for instance, motion activated lights, emergency report systems or surveillance cameras can be implemented in neighbourhood parks to increase security. Often, crime in neighbourhood parks occur in darker or concealed areas. Factors such as overgrown bushes or built obstructions may visually fragment some areas from the rest of the park and make these areas harder to control all the time (Chen et al., 2016). **Informal control** of neighbourhood parks is related to the 'eyes on the street' concept of Jacobs (1961), for instance, individuals watching the park from their balconies or owners of the stores adjacent to the park being there for all times, can decrease the fear among older adults as they realize that these individuals observe the place all the time, would notice and intervene in case of such unusual events or threats (Madge, 1996).

**Maintenance** of neighbourhood parks is strongly related to sense of comfort and sense of safety among older adults. Lack of maintenance often ends up with polluted parks with neglected natural features and broken park facilities, and lead to nuisance and safety problems that can be important barriers to use of neighbourhood parks among older adults (Aspinall et al., 2010). Poor maintenance of neighbourhood parks gives signals that make these parks to be perceived as they are not used anymore, and can attract individuals with 'unwanted' purposes: drug users, alcoholics, thieves, beggars or homeless. While the poor maintenance of neighbourhood parks increases the risk of actual crime accordingly, factors such as broken bottles and garbage around or graffiti make older adults perceive them as 'signs of vandalism', and increase their fear of crime (Hung & Crompton, 2006). Moreover, broken park facilities such as the broken components of playgrounds or exercise equipment can increase the risk of falls and injuries among park users (Bedimo-Rung et al., 2005). Similar to crime safety, maintenance of neighbourhood parks is realized with formal and informal control. While park staff attended by the local municipalities are responsible for the regular cleaning of neighbourhood parks, care of the natural features and periodical repairs of the park facilities, park users can contribute to cleanliness of these parks by individual efforts, such as watching other park users and warn those who pollute the parks or damage to the park facilities.

Along with the lack of maintenance, '**conflict**' with other park users can lead to nuisance problems among older adults. Often, a typical conflict in between older adults and teenagers in neighbourhood parks. For instance, in the studies of Aspinall et al. (2010) and Willemse (2010), older adults report existence of **teenagers** in parks as a nuisance problem that affect their use of these parks. This kind of conflict does not necessarily occur due to actual social interactions in between these user groups, often, older adults feel unsafe and uncomfortable seeing teenagers smoking, consuming alcohol or using drugs, hearing them using a bad language or talking loudly. In some cases, physical activities of teenagers in neighbourhood parks, for instance, skating or cycling fast even though there is no dedicated area for these activities or playing ball games outside basketball or football courts, make older adults feel uncomfortable and fear of getting hit or injured. Another type of conflict occurs in between older adults and **strangers**. As neighbourhood parks are supposed to be used by the individuals living in no more than 800 meters radius, older adults using these parks frequently expect to be familiar with the other people there over the time. However, seeing strangers in neighbourhood parks can make older adults feel uncomfortable. In the studies of Kaştaş-Uzun (2016) and Hung & Crompton (2006), older women particularly complain about seeing too many **stranger men** in and near neighbourhood parks. Finally, older adults can perceive the individuals walking their **dogs** in neighbourhood parks as a nuisance problem. This type of conflict does not necessarily occur due to the fear of dogs, rather, it is related to these individuals' not taking care after the pollution their dogs cause, for instance, leaving the fouls of their dogs around or not intervening their dogs when they bark all the time (Willemse, 2010).

So far in this chapter, factors affecting the uses of neighbourhood parks by older adults have investigated to identify the characteristics of age-friendly parks. In the next section, this study will examine 4 'successful' examples for age-friendly parks.

### **3.5. Urban Design Examples for Age-Friendly Parks**

Considering the physiological, mental and social health benefits that parks can contribute to all individuals, and especially older adults with certain design interventions and park facilities, different countries across the world implement urban design projects to adapt their existing parks or create new parks that are referred as 'age-friendly parks',

as a part of the movement for age-friendly built environments. According to Loukatiou-Sideris et al. (2014) the aims of age-friendly parks are to:

- Recognize the anatomical needs of older adults and adjust the design of these parks and provide park facilities that are necessary to ensure accessibility and comfort in older adults, for instance, with lowering the height of pavements or providing restrooms with wheelchair access.
- Adapt the design of parks according to the changes in the spatial perceptions of older adults, for instance, with removing the glaring patterns of pavements that may confuse older adults and trigger anxiety.
- Encourage older adults to engage with their leisure, physical and social activities in parks via park facilities and park programming, for instance, with providing gardening opportunities or organizing exercise classes.

The goal of age-friendly parks is not necessarily to create ‘exclusive’ places for older adults, rather to support intergenerational activities of all age groups, with giving an additional focus for older adults. Gretchen Addi, who is a designer working on aging indicates that: *“If you design for older adults, then you design for everyone”* (Medium, 2018). For instance, an older adult may not use a steep stair that younger individual can, while a younger individual can use a gently sloping ramp that is designed according the anatomy older adults (Loukatiou-Sideris et al., 2016).

In some cases, age-friendly parks may have specific goals to support particular physiological, mental and social needs of older adults. The following 4 sub-sections examines well-known urban design examples for age-friendly parks with specific goals.

### **3.5.1. The Portland Memory Garden**

The Portland Memory Garden, created in Portland, United States in 2002, is open to for all, but is specifically designed to respond to special needs of older adults with memory disorders, such as Alzheimer’s. The park is one of the most globally well-known examples for therapeutic / healing purposes. Aim of the park is to stimulate the senses and spark past memories of older adults via four seasons of plant and flower beds. All of these flowers are in different types, colours and fragrances, and some of these plants are edible. When older adults see, smell, touch or taste these plants, they address the senses



of older adults and help them spark some of their memories that could have linked with their past experiences. Seating units in this park are oriented to some of these plants and flower beds circular way to allow social interactions in between park users to occur (Figure 3.1.). While the park is located near a busy road with heavy traffic, mature trees and bushes are used to absorb the noise pollutions and physically and visually separate to allow older adults revive themselves in the park without being exposed to the stressors of the nearby built environment. The park provides opportunities for formal and informal events, such as ceremonies, and especially gardening activities as an important activity for older adults to relax and feel productive. As all these plants and flowers increase the maintenance budget of the park, management of the park is done by the volunteers, municipality and non-profit organizations. The Portland Memory Garden carries a great advantage of being part of a public open spaces network and linked to other parks that provide different kinds of park facilities such as playgrounds or tennis courts. (Source: Friends of the Portland Memory Garden, n.d.).



Figure 3.1. Seating units of The Portland Memory Garden to support socialization (Source: Friends of the Portland Memory Garden, n.d.)

### **3.5.2. Preussenpark**

Preussenpark is located in Berlin, Germany, as one of the countries with highest proportion of older adults. While the main focus of this park to provide a public ground for the informal activities of the community and it is famous for organizing food markets

were all individuals with different ethnic or cultural backgrounds can sell their home-made cooking, the park is also well-known for encouraging older adults to engage with physical activities there. To achieve its aim, park provides geriatric exercise equipment that are particularly designed according to the anatomical needs of older adults. These equipment are made of graffiti-resistant materials, located on soft fall bark surface and under canopy of mature trees, and provide picture and text based instructions to allow older adults those never engaged with exercising to be able to use them as well. The park encourages older adults to come together to exercise there by organizing regular meeting days. While Preussenpark is located in an area with heavy traffic level, the park offers great variety of transportation options by U-bahn (metro), bus and dedicated bike roads (Bezirksamt Charlottenburg-Wilmersdorf von Berlin, n.d.).



Figure 3.2. Food market in Preussenpark  
(Source: Wuenschirs, 2010)

### 3.5.3. Carbide Park

Carbide Park that is constructed in Texas, United States, in 2014, with a goal to be a ‘social hub for older adults’. The park provides exercise equipment for older adults that their designers refer as ‘motion wellness system’. This system offers fitness steps, low and high chin-up bars, balance stools, a wavy balance beam and a stretching board that are all designed to increase mobility, flexibility and balance skills of older adults. These equipment are designed and tested to remove the risk for falls in injuries among



older adults. While illustrated instructions are provided in the park for the use of these equipment, the Municipality also opens the instructions for the access on internet. The park provides opportunities for community gardening and organizes gardening seminars for public. Facilities of the are designed to promote informal events of the community via gazebos, pavilions and barbeque pits that are all shaded for the protection from the sun (Country of Galveston, n.d.).

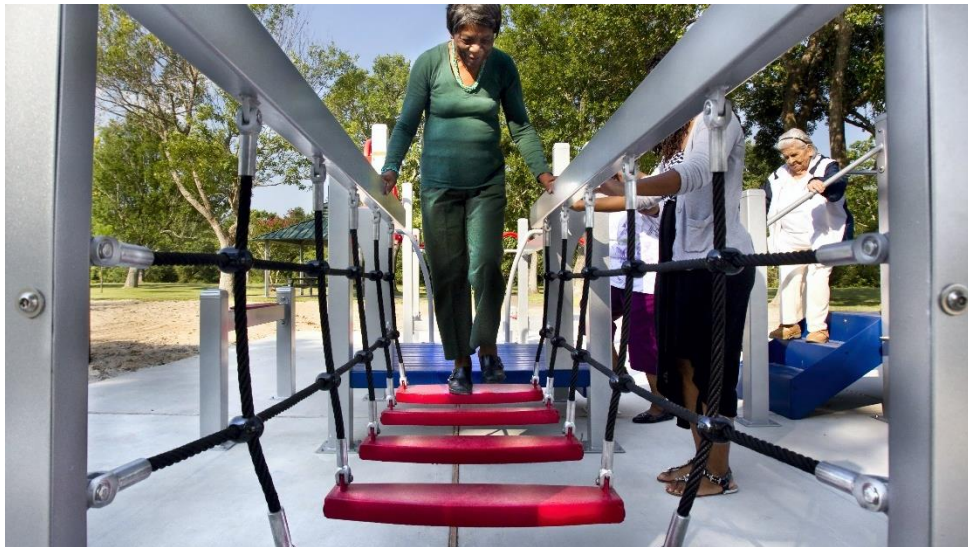


Figure 3.3. Geriatric exercise equipment in Carbide Park  
(Source: Aulds, 2014)

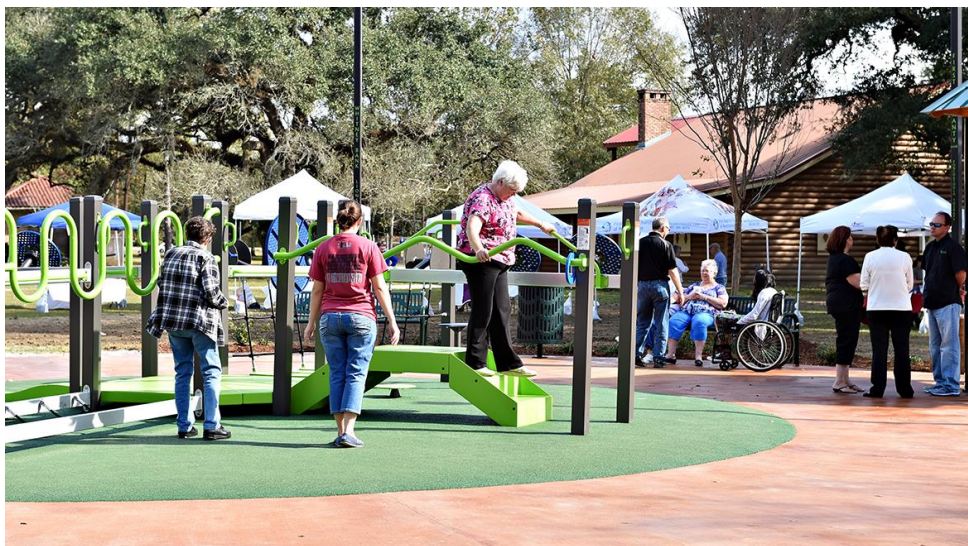


Figure 3.4. Geriatric exercise equipment  
(Source: "Xccentfitness", n.d.)

### 3.5.4. Jackson Square Park

Jackson Square Park, located in Minneapolis, United States, is equipped with a particular park facility: outdoor music instruments. Designers of these park suggest that engaging with music can be a beneficial activity for the human health, as playing music is proven to have specific effects on the motor systems of older adults, especially those with Parkinson's disease. The birth-idea of this park is related to its history when it used to encounter vandalism too much. Later, designers of the park came up with an idea that music in communities can be beneficial to reduce vandalism and gather people together on a common focus. Forsooth, after the installation of these outdoor music instruments, vandalisms in the park almost stops. These outdoor music instruments with durable and sustainable materials are designed according to meet the universal design standards (Figure 3.4.). Another important age-friendly aspect of Jackson Square Park is the way it gathers park users together on common focuses such as attractive architectural features (Figure 3.5.). These attractive features provide aesthetical richness for older adults, motivate them to visit the park, support their way-finding and promote them to engage with their leisure and social activities around these focusses. City of Minneapolis that runs an initiative to fund the maintenance and rehabilitation of its parks explains that neighbourhood parks can have an important role in addressing social and economic equity (Minneapolis Parks and Recreation Board, n.d.; Freenotes Harmony Park, n.d.).



Figure 3.5. Outdoor music instruments in Jackson Square Park  
(Source: Family Fun Twin Cities, n.d.)





Figure 3.6. Architectural details in Jackson Square Park as common focuses  
(Source: James Brenner Sculpture, n.d.)

### 3.6. Summary - The List of Characteristics of Age-Friendly Parks

In this chapter, the physical and social factors about neighbourhood parks and the park surroundings affecting the uses of these parks by older adults are examined. Taking into consideration to the findings of Chapter 2 about aging and the built environment, I evaluated these factors in three topics:

- **Characteristics of the Neighbourhood Environment:** When individuals age, they tend to limit their daily activities with the boundaries of the neighbourhoods they live, because often with aging, individuals do not tend to travel further due to factors, for instance, lack of energy, limited mobility or not being able to drive. Accordingly, neighbourhood parks as one of the most important components of neighbourhoods gain a privileged importance for older adults to provide them opportunities to engage with their leisure, physical and social activities outdoors. The studies I analysed demonstrate that certain physical characteristics of the neighbourhoods: topographical conditions, land-use characteristics, traffic level can create ‘thresholds’ for older adults in their uses of neighbourhood parks. For instance, older adults those who live in a sloping neighbourhood may not be able to walk to neighbourhood parks. Also, social characteristics of neighbourhoods, that are determined by factors such as socio-economic characteristics of their residents or neighbourliness relationships, can affect the park use of older adults.

For instance, older adults those who have strong ties with their neighbours may use these parks together.

- **Access to Neighbourhood Parks:** As most older adults are expected to have a limited mobility, they are less likely to use neighbourhood parks that are located more than 300 meters distance to their homes frequently. However, the studies I examined indicate that often, problems with the ‘equal’ spatial distribution of the amounts of park acreage in neighbourhoods limit the access of some older adults to neighbourhood parks. Street characteristics as another important determinant of the access, can be one of the biggest physical constraints to park use of older adults. These studies show that the quality of sidewalks, in terms of their width, height or protection from the traffic, is the most significant factor affecting the walkability of the streets.
- **Physical and Social Characteristics of Neighbourhood Parks:** Older adults’ biggest expectations in their uses of neighbourhood parks are in these studies I examined as: to be in nature, be surrounded by other people, engage with their daily leisure activities such as to read newspapers, bring their grandchildren for their play purposes, exercise and socialize with their friends. Accordingly, they seek for great numbers of and diverse natural features in these parks. Some park facilities, for instance, exercise equipment, picnic tables or café, can support the activities of older adults. Moreover, some park facilities to support physiological needs of all, restrooms or drinking water taps, can be more important for older adults due to their age-related anatomical needs, and can notably contribute to their uses of parks. As well as these physical characteristics, social factors about neighbourhood parks, for instance the ‘pleasantness’ of social interactions with other park users, the way they use the parks can affect the perceptions of older adults about safety. Maintenance of neighbourhood parks, at the intersection of physical and social factors, is essential for older adults to feel comfortable and safe in these parks.

By using these findings of my literature review of urban design studies involving older adults and their uses of neighbourhood parks, I created a list for ‘the characteristics of age-friendly parks’ based on the criteria that I identified with the help of these studies (Table 3.2). This list of characteristics of age-friendly parks guides the case study of this study in its site observations phase.

Table 3.2. Summary of identified park characteristics of age-friendly parks according to the urban design literature

Characteristics of Age-Friendly Parks	Assessment Criteria	Sources
<b>Pedestrian Friendly Streets</b>	<ul style="list-style-type: none"> <li>- Sidewalk width minimum 150 cm</li> <li>- Sidewalk height maximum 15 cm</li> <li>- Ramps with maximum 6% slope</li> <li>- Street trees</li> <li>- Frequent seating units</li> <li>- ‘Things to watch’ (i.e. windows of shops)</li> <li>- Visible zebra crossings</li> </ul>	
<b>Support for Different Transportation Modes</b>	<ul style="list-style-type: none"> <li>- Availability of public transportation options</li> <li>- Availability of car parking w/ handicapped parks</li> <li>- Availability of bike parking</li> </ul>	
<b>Characteristics of the Neighbourhood Environment</b>	<ul style="list-style-type: none"> <li>- Flat topography or very limited grade changes</li> <li>- Shops and stores that are used by older adults (i.e. grocery stores, pharmacies)</li> <li>- Public service buildings that are used by older adults (i.e. religious facilities, health institutions)</li> </ul>	<ul style="list-style-type: none"> <li>- Chow et al. (2016)</li> <li>- Loukaitou-Sideris et al. (2016)</li> <li>- Loukaitou-Sideris et al. (2014)</li> </ul>
<b>Great Numbers of And Diverse Natural Features</b>	<ul style="list-style-type: none"> <li>- 70% softscape, 30% hardscape ratio</li> <li>- Mature trees providing sufficient amounts of shading</li> <li>- Existence of flowers and bushes</li> <li>- Existence of water features</li> </ul>	<ul style="list-style-type: none"> <li>- Pleson et al. (2014)</li> <li>- Aspinall et al. (2010)</li> <li>- Parra et al. (2010)</li> <li>- Tinsley et al. (2010)</li> </ul>
<b>Support for Older Adults’ Way-Finding</b>	<ul style="list-style-type: none"> <li>- Clearly defined park entrances w/ park name signs</li> <li>- No park walls, no dead-end walking paths</li> <li>- ‘Landmarks’ to support older adults’ familiarity (i.e. sculptures)</li> </ul>	<ul style="list-style-type: none"> <li>- Sugiyama et al. (2009)</li> <li>- Borst et al. (2008)</li> <li>- Kaczynski et al. (2008)</li> </ul>
<b>Park Facilities for Stationary Activities</b>	<ul style="list-style-type: none"> <li>- Seating units w/ heat-resistant, natural materials</li> <li>- Different types of seating units (i.e. picnic tables to support playing card games)</li> <li>- ‘Foins for conservation’ to gather older adults around a common focus (i.e. kiosk, café)</li> <li>- Small facilities to ‘exchange information and news’ (i.e. small library units, newsstand)</li> </ul>	<ul style="list-style-type: none"> <li>- Türel et al. (2007)</li> <li>- Burton &amp; Mitchell, 2006)</li> <li>- Bedimo-Rung et al. (2005)</li> <li>- Li et al. (2005)</li> </ul>
<b>Park Facilities for Physical Activities</b>	<ul style="list-style-type: none"> <li>- Opportunities for low-impact physical activities (i.e. walking trail, exercise equipment)</li> <li>- Lawn area for self-determined physical activities</li> </ul>	
<b>Park Facilities for Physiological Needs</b>	<ul style="list-style-type: none"> <li>- Restroom w/handicapped access</li> <li>- Drinking water taps</li> </ul>	
<b>Park Security</b>	<ul style="list-style-type: none"> <li>- Physical precautions for park security (i.e. security guards, surveillance cameras)</li> <li>- Regular maintenance to support perceived comfort and safety</li> <li>- No visually obstructed areas</li> </ul>	

## CHAPTER 4

### STUDY SITE AND METHODOLOGY

The case study of this study aims to evaluate how the physical and social factors about neighbourhood parks and park surroundings affect the uses of these parks by older adults. To achieve this aim, the case study realizes site observations and user interviews in two neighbourhood parks in Karşıyaka district of Izmir province (Turkey): ‘80. Yıl Cumhuriyet Park’ and ‘Uğur Mumcu Park’.

This chapter introduces the conduction of the case study. The first section aims to express the selection process of the study site and the sample neighbourhood parks, and introduces their physical and social characteristics. The second section explains the study methodologies and the application process of the case study.

#### 4.1. About the Study Site: Karşıyaka, Izmir

Izmir is the third largest province of Turkey; following the financial capital city, Istanbul and the governmental capital city, Ankara. As of 2018, the population of Izmir is 4.279.677 (Turkish Statistical Institute, 2019). The population of Izmir is increasing on a ratio that is above the average of Turkey. One of the main reasons of this trend is the increasing amounts of migration (Izmir Development Agency, 2015). According to Kahraman (2018), the motivations behind this migration trend is commonly related to the environmental richness of the geography and the socio-cultural attractiveness of the urban life in Izmir. The province that is located at the coast of Aegean Sea is surrounded by mountains, and exhibits the typical characteristics of Mediterranean climate: hot summers and warm winters. In the existence of important transportation hubs: an international airport and harbour, the first suburban train line of the country, major highways, EuroVelo bike roads, internationally recognized vacation locations, historic and natural resources, Izmir is one of the most important commercial and tourism destinations of Turkey.

To select the study site for the case study, I gathered the data about the population characteristics and especially with higher numbers of populations at 65 years old and



above across 30 districts in Izmir from Turkish Statistical Institute (2018). I also obtained the data for the amount of neighbourhood park acreage in each 30 districts from the study of Şenol (2019). Then, I overlapped both groups of data to dedicate the district where higher number of populations at 65 years old and above live, and greater amount of neighbourhood park acreage is available. Results indicate that Karşıyaka is the district where one of the highest numbers of population at 65 years old live and one of the greatest amounts of neighbourhood park acreage is available at the same time (Table 4.1.). Accordingly, a selected Karşıyaka for the study site of the case study.

Table 4.1. Selection process of Karşıyaka for the study site of the case study  
(Source: Şenol, 2019; Turkish Statistical Institute 2018)

	Districts with Highest Numbers of Population at 65 Years Old and Above	Districts with Greatest Amount of Neighbourhood Park Acreage
1.	Konak (51.340)	Bornova (1.333.000 m <sup>2</sup> )
2.	Karşıyaka (50.181)	Karşıyaka (780.052 m <sup>2</sup> )
3.	Karabağlar (48.978)	Çiğli (746.530 m <sup>2</sup> )

Karşıyaka district is located on the northern coast of the Gulf of Izmir. It covers 51,11 km<sup>2</sup> of land. In terms of population, Karşıyaka is the 5<sup>th</sup> most populated district of Izmir. As of 2018, the population of Karşıyaka is 344.140 (Turkish Statistical Institute, 2019). The median age in Karşıyaka is 37.3, and the ratio of population at 65 years old and above is 14,6%, which are both higher than the average of Izmir and Turkey (Turkish Statistical Institute 2018; “Karşıyaka City Health Profile”, 2018) (Figure 4.2.).

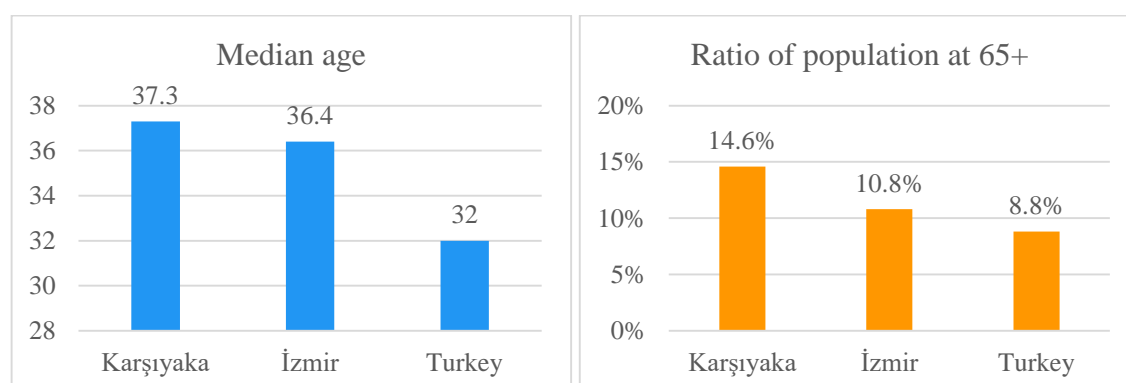


Figure 4.1. Comparison of median age and ratio of population at 65 years old and above  
(Source: Turkish Statistical Institute 2018; “Karşıyaka City Health Profile”, 2018)

In terms of gender distribution, 58% of the population at 65 years old and above in Karşıyaka is female. One third of the population at 65 years old and above in Karşıyaka are graduated from primary school. The education level of the population at 65 years old and above in Karşıyaka is higher than the average of Izmir and Turkey (Figure 4.3.).

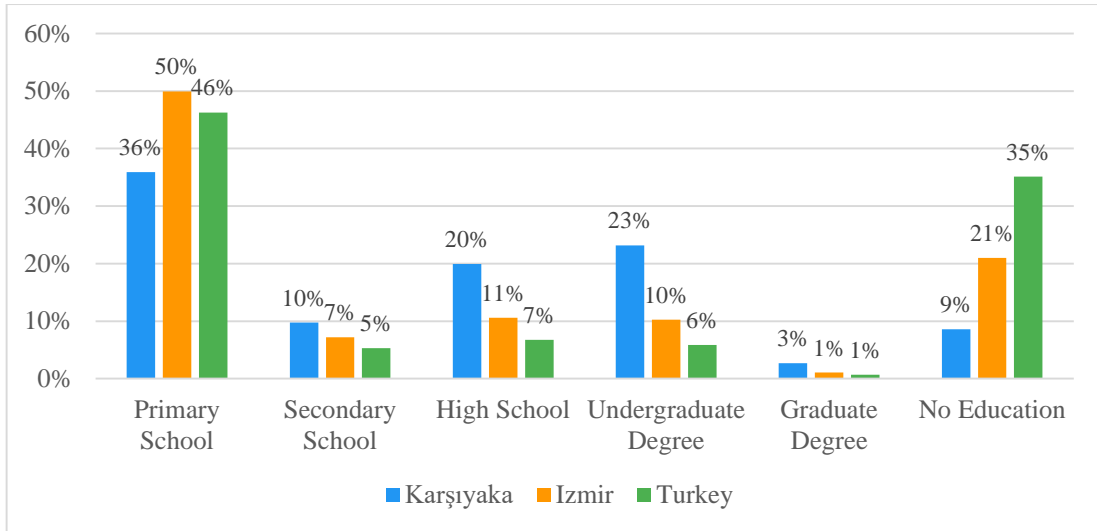


Figure 4.2. Comparison of education level of population at 65 years old and above (Source: Turkish Statistical Institute 2018)

Karşıyaka is divided into 27 neighbourhoods. There are significant geographical and socio-economic differences among the neighbourhoods. Neighbourhoods that are closer to the sea are more likely to host middle- and high-income people, and have better access to public services such as public green spaces or public transportation options (“Izmir Chamber of Commerce”, 2006). There are three physical thresholds that fragment neighbourhoods from each other; on ground suburban train line (IZBAN), Anadolu Boulevard, and E87 Highway. Karşıyaka provides different types of public green spaces. There are continuous recreation areas along the seashore, and recreation areas in the neighbourhoods that are developed after late 1980’s: Atakent, Mavişehir and Yalı. The amount of recreation areas takes 18% of the total green space area in the district. Great numbers of the public green spaces in Karşıyaka is concentrated in the neighbourhoods between the sea and the suburban train line (Figure 4.3.).

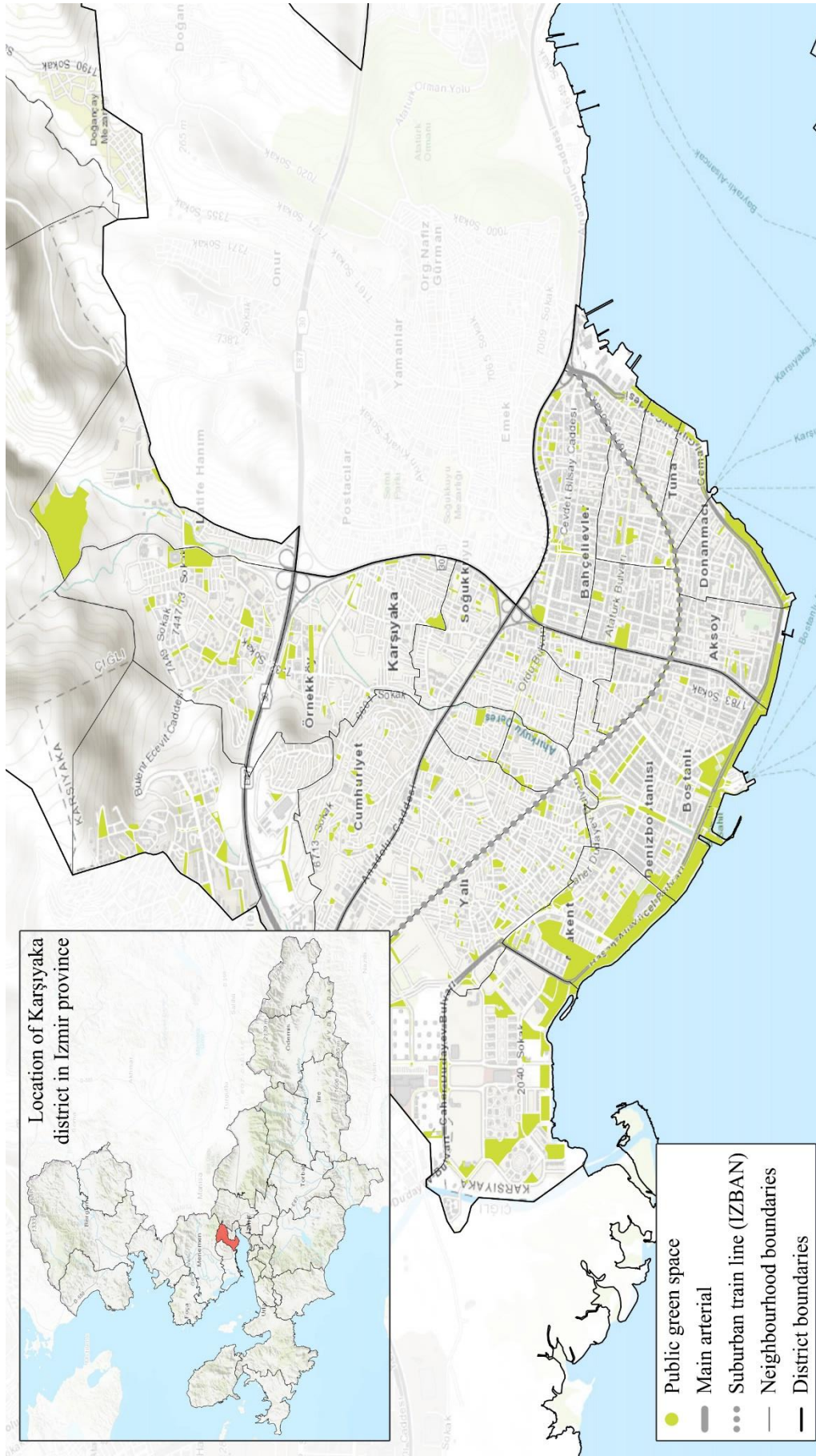


Figure 4.3. Public green spaces of Karşıyaka  
(Created by the author using ArcMap)

Karşıyaka includes 148 neighbourhood parks. Bostanlı with 19 neighbourhood parks covering 58 da total park acreage, Yalı with 19 neighbourhood parks covering 55 da park acreage, and Bahçelievler with 12 neighbourhood parks covering 22 da total park acreage are the neighbourhoods with greatest amounts of neighbourhood park acreage. The amount of neighbourhood parks area covers 61% of the total green space area in the district. The rest of the green spaces are the ones such as graveyards or school gardens.

## **4.2. Research Design and Methodology**

The case study of this study is realized in three main steps: selection of sample neighbourhood parks according to the data analyses and preliminary site observations, detailed site observations in sample neighbourhood parks, and user interviews in sample neighbourhood parks.

To select sample neighbourhood parks for the case study, I analysed the physical attributes of 148 neighbourhood parks in Karşıyaka district provided by the Municipality of Karşıyaka in the study of Şenol (2019) (see Appendix A). By taking into consideration that older adults show a greater preference for using parks with park facilities that can support their leisure, physical and social activities such as exercise equipment or a café, I analysed these 148 neighbourhood parks in Karşıyaka according to the park facilities they provide (Ibes et al., 2018; Aspinall et al., 2010; Sugiyama et al., 2009). I noticed that 80 out of 148 parks consist of lawn area with vegetation, benches and one park facility (often either a playground) and 45 out of 148 have two park facilities (often combination of a playground and exercise equipment). I eliminated these 125 out of 148 parks due to their limited numbers of park facilities with a limited research opportunity. At the next step, I analysed the remaining parks and observed that 18 out of 23 are more likely to offer opportunities for the physical activities of younger users via basketball courts or football fields. Accordingly, I eliminated these parks and focused on remaining 5 parks (Table 4.2. and Figure 4.4.). Then, I realized preliminary site observations in these parks to analyse if they are utilized by older adults. I visited these parks systematically and recorded the momentary number of older adult park users (Table 4.2). I noticed that the numbers of older adult park users are considerably less in Demirali Durgut Park with 15 older adults and Nergis Park with 29 older adults, compared to 80. Yıl Cumhuriyet Park

with 108 older adults, Zübeyde Hanım Park with 99 older adults, and Uğur Mumcu Park with 58 older adults (Table 4.3.).

Table 4.2. Physical attributes of 5 neighbourhood parks

Park Name	Neighbourhood	Park Facilities	Park Size
Zübeyde Hanım Park	Bahariye	Playground, exercise equipments, ornamental pool, cafe	7.300 m <sup>2</sup>
80. Yıl Cumhuriyet Park	Bahçelievler	Playground, exercise equipments, walking trail, cafe	10.000 m <sup>2</sup>
Uğur Mumcu Park	Bostanlı	Playground, exercise equipments, tennis court, ornamental pool, cafe, grocery	8.330 m <sup>2</sup>
Demirali Durgut Park	Demirköprü	Playground, exercise equipments, ornamental pool, women's solidarity center	3.240 m <sup>2</sup>
Nergis Park	Nergis	Playground, exercise equipments, cafe	3.500 m <sup>2</sup>

Table 4.3. Site observation results in 5 neighbourhood parks according to the number of older adult park users

Park Name	Sunday Observation (11.08.2019)				Monday Observation (12.08.2019)				Total
	08:00-12:00	12:00-16:00	16:00-20:00	Total	08:00-12:00	12:00-16:00	16:00-20:00	Total	
Zübeyde Hanım Park	8	23	21	52	6	23	18	47	99
80. Yıl Cumhuriyet Park	12	15	20	57	13	22	16	51	108
Uğur Mumcu Park	4	14	13	31	5	17	13	30	61
Park Name	Sunday Observation (18.08.2019)				Monday Observation (19.08.2019)				Total
	08:00-12:00	12:00-16:00	16:00-20:00	Total	08:00-12:00	12:00-16:00	16:00-20:00	Total	
Demirali Durgut Park	2	4	3	9	0	3	3	6	15
Nergis Park	3	6	5	15	2	8	5	15	29



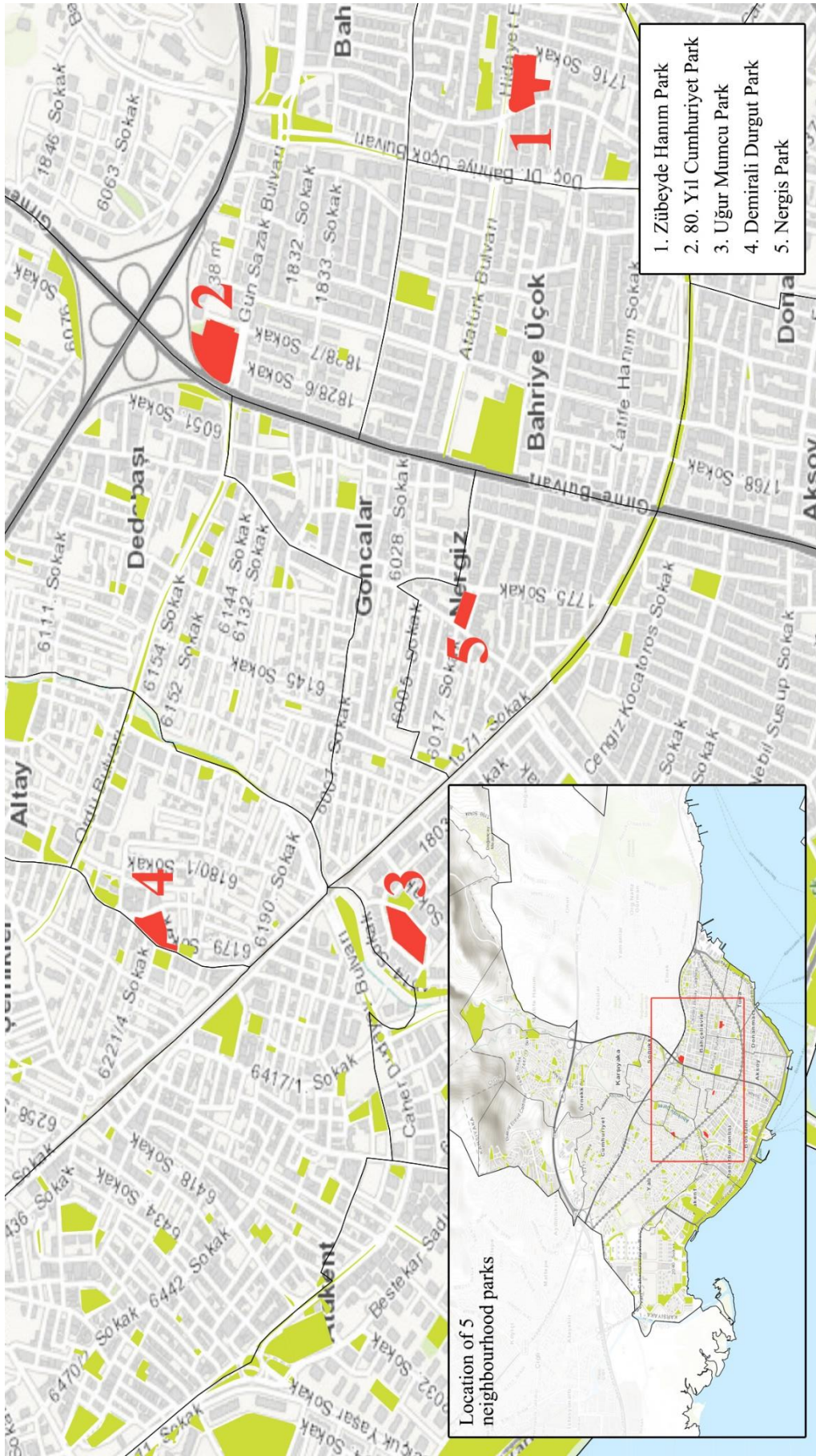


Figure 4.4. Location of 5 neighbourhood parks  
(Created by the author using ArcMap)

According to Parra et al. (2010) and Kaczynski et al. (2008), the characteristics of neighbourhood environment, in terms of traffic level and adjacent land-uses surrounding neighbourhood parks can have strong impacts on the uses of these parks by older adults. Accordingly, I analysed the neighbourhood characteristics of the three neighbourhood parks with highest numbers of older adult park users, and observed that while ‘80. Yıl Cumhuriyet Park’ and ‘Zübeyde Hanım Park’ are surrounded by heavy traffic and have all mixed-uses in their surroundings, ‘Uğur Mumcu Park’ is surrounded by very low traffic level and have all residential in their surroundings (Figure 4.5.). To be able to evaluate the effects of the neighbourhood environment on the uses of neighbourhood parks by older adults, I make certain on Uğur Mumcu Park with a quiet neighbourhood environment. Among the two parks that are surrounded by heavy traffic and have mixed-uses in their surroundings, I decided to select 80. Yıl Cumhuriyet Park, as it is slightly more used by older adults and provide higher numbers of park facilities. So that, I selected the sample neighbourhood parks for the case study as ‘**80. Yıl Cumhuriyet Park**’ in Bahçelievler Neighbourhood and ‘**Uğur Mumcu Park**’ in Bostanlı Neighbourhood.

At the next step, I realized detailed site observations in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park to analyse their physical characteristics according to the list of characteristics of age-friendly parks that I derived from the urban design literature (see page 58). Based on the analyses, I gave scores indicating the age-friendliness of these neighbourhood parks according to how many of these criteria are met there for the recommendations for the age-friendly parks. The detailed results of these analyses are provided in Chapter 5.

After site observations, I realised semi-structured user interviews with 30 park users at 65 years old and above in each 80. Yıl Cumhuriyet Park and Uğur Mumcu to understand and evaluate the spatial experiences and perceptions of older adults in their uses of these neighbourhood parks. I completed user interviews in 15 days in September 2019, by interviewing with equal numbers of users in morning (08:00 – 12:00), noon (12:00 – 16:00) and evening (16:00 – 20:00) in both weekdays and weekend days. As a 25 years old male interviewer, I received very positive responses from older adult park users in both neighbourhood parks. Knowing that older adults may have concerns about safety when talking to a stranger about their daily routines and some of their personal information, I tried to comfort the participants as much as possible by indicating that I realize these interviews for educational purpose.



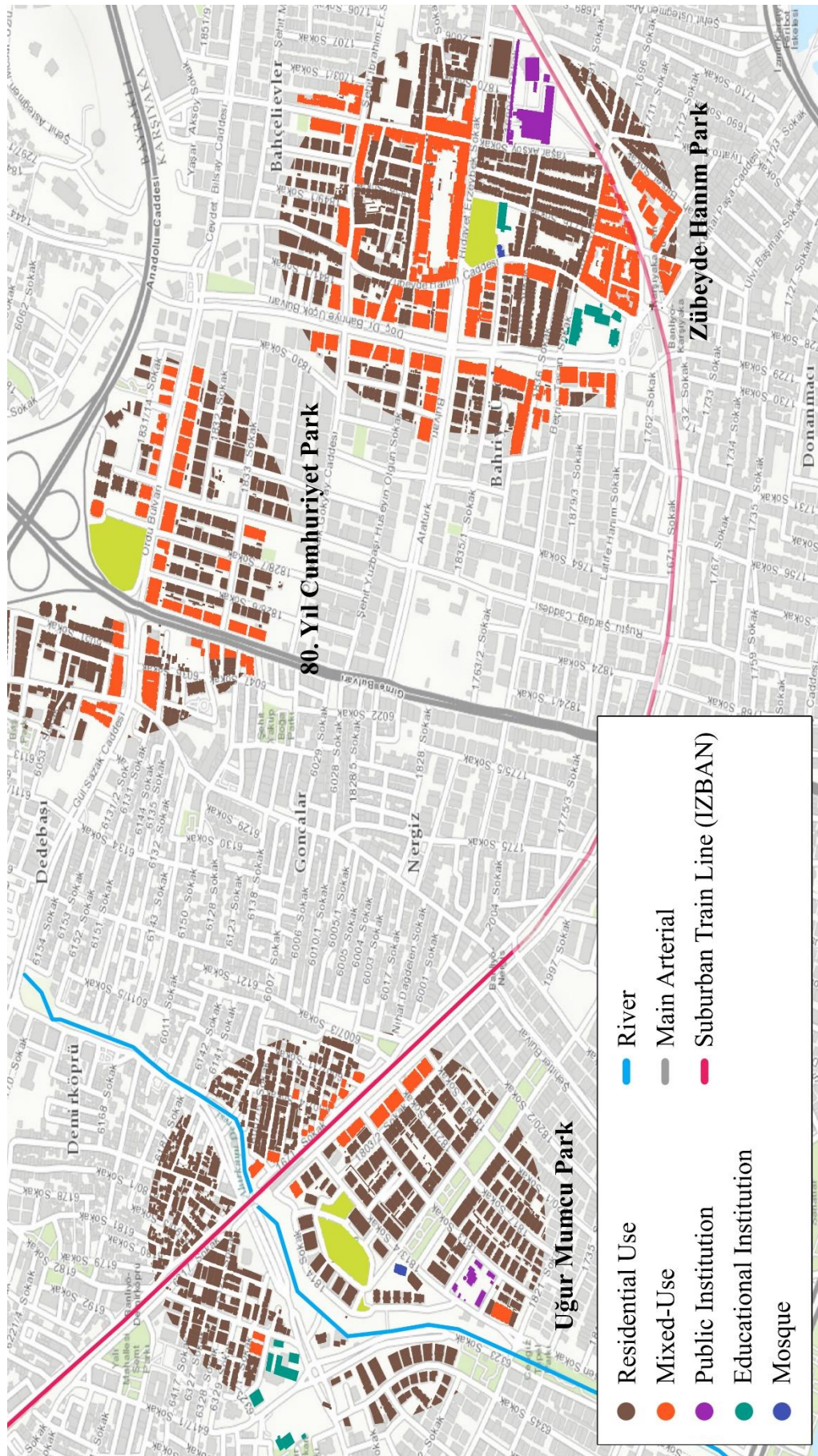


Figure 4.5. Neighbourhood characteristics of 3 neighbourhood parks  
 (Created by the author using ArcMap)



During the interviews, I observed that some of the participants consider the interviews as an opportunity to socialize and share some of their life experiences. Accordingly, interviews took minimum half an hour and some of them lasted for one and half hours. Participants described that they would feel uncomfortable if I record the interviews with voice recorder, accordingly, I took help to record the interviews by transcribing them simultaneously with the help of a notebook. During the interviews, I focused on seeking answers to following questions:

- How do participants use neighbourhood parks? (Park use frequency, duration, visiting time preferences, companionship status.)
- What are the purposes of participants in their uses of neighbourhood parks?
- What are the factors that motivate participants to or deter them from using neighbourhood parks? (Ease of access to parks, park design, natural features of parks, park facilities, activities in parks, social interactions in parks.)
- What kinds of urban design interventions can be done to improve the park use experience of participants?

After completing the interviews, I used the software: NVIVO to organize and analyse the written data of the interviews. The incoming chapters describe and evaluate the findings of the site observations and user interviews in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park.

## CHAPTER 5

### TWO AGE-FRIENDLY PARKS IN KARŞIYAKA AND THEIR OLDER USERS

This chapter introduces the sample neighbourhood parks of the case study: ‘80. Yıl Cumhuriyet Park’ and ‘Uğur Mumcu Park’ according to the detailed site observations that compare the physical characteristics of these parks with the list of characteristics of the age-friendly parks based on the urban design literature, and participants of the case study according to their purposes for using these neighbourhood parks in Karşıyaka and their park use characteristics.

#### 5.1. Characteristics of the Neighbourhood Parks

The sample neighbourhood parks that are selected for the case study are two of the neighbourhood parks in Karşıyaka with highest numbers of park facilities and older adult park users. While these neighbourhood parks have similarities in terms of the park facilities they offer, their park design, park layout and neighbourhood characteristics in terms of land-use characteristics and traffic level are different from each other.

**‘80. Yıl Cumhuriyet Park’** is located in ‘Bahçelievler Neighbourhood’, at the edge of the cloverleaf interchange of two of the busiest boulevards in Karşıyaka: Girne Boulevard and Anadolu Boulevard. Accordingly, the traffic level surrounding the park is very heavy. The park is accessible by public transportation options via municipal busses and taxibusses<sup>3</sup>. There is a large parking lot adjacent to park, without handicap parking. No bike parking is available. The topography of the park and park surroundings are flat. Majority of the buildings surrounding the park are mixed-uses with different kinds of commercial units at their ground floors such as grocery stores, liquid stores or clothing stores. Some of these buildings have offices at their first and second floors as well. The

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<sup>3</sup> Taxibus (dolmuş) is a popular type of commercial transportation option in Turkey, commonly, they carry smaller numbers of passengers compared to bus, but they do not have dedicated stops.

park provides a park name sign at its entrance and a sculpture. However, I noticed that most of the individuals do not enter the park from this dedicated entrance, instead, they enter the park from where the café is located (Figure 5.1.). The café of the park that is constructed by the Municipality of Karşıyaka in 2017 is managed by a non-profit public organization. This café with 50 m<sup>2</sup> building (for service only) and 450 m<sup>2</sup> open space sitting area with cobblestone flooring operates between 15:00 – 23:00. There is a 3.700 m<sup>2</sup> woodland full of 20 years old pine trees. Park users can carry some of the chairs and tables under these trees. A restroom exists in the park, located 35 meters away from the café and locked all the time, only customers of the café can use restrooms by borrowing the key from the café personnel. Playground of the park with a traditional design (made of iron and plastic materials, with rubber flooring), is located 60 meters away from the café and adjacent to the exercise equipment area. The park provides 330 meters walking loop with tartan flooring, with a sign indicating the rules such as the walking direction. Benches are located at the northern parts of the park and placed circularly surrounding the playground area, exercise equipment area and flower bodies.

**‘Uğur Mumcu Park’** is located in ‘Bostanlı Neighbourhood’ and surrounded by residential buildings and the traffic level in this area is very low. The park is accessible by public transportation with only one municipal bus. There are parking lots surrounding the park, without handicap parking. No bike parking is available. The topography of the park and park surroundings are flat. There is a mosque adjacent to the park and there are three neighbourhood parks in a walking distance (300 meters) to this park. The park provides a park name sign at its entrance and a sculpture. The café of the park that is constructed in 2006 and re-designed in 2014 to include a grocery store that is managed by the Municipality of Karşıyaka. This building that is 220 m<sup>2</sup> does not provide indoor seating area, but has a restroom that is only accessible for the café customers. The café provides 400 m<sup>2</sup> open space seating area that is adjacent to the playground area with cobblestone flooring, and operates between 15:00 – 23:00. Playground of the park with is made of iron and plastic materials, with rubber flooring. The exercise equipment area is fragmented from rest of the park with a street (Figure 5.2.). Benches are distributed across the park and placed circularly surrounding the playground area, trees and some flower bodies. The park provides a tennis court that is free of charge to use.



Figure 5.1. Park layout of 80. Yıl Cumhuriyet Park  
(Source: Created by the author)





Figure 5.2. Park layout of Uğur Mumcu Park  
 (Source: Created by the author)

To evaluate the ‘age-friendliness’ of 80. Yıl Cumhuriyet Park and Uğur Mumcu Park based on the recommendations of the urban design literature for the age-friendly parks by, I analysed the physical characteristics of these parks by comparing them with the list of characteristics of the age-friendly parks at the end of Chapter 3, and made a ‘scoring analysis’ according to the existence and absence of each criteria in this list in Table 5.1.:

Table 5.1. Scoring analysis for the existence or absence of age-friendly park characteristics in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park

<b>Coding – 1: Exist &amp; 0: Absent</b>		
<b>Assessment Criteria</b>	<b>80. Yıl Cumhuriyet Park</b>	<b>Uğur Mumcu Park</b>
- Sidewalk width minimum 150 cm	0/1	0/1
- Sidewalk height maximum 15 cm	0/1	1/1
- Ramps with maximum 6% slope	1/1	1/1
- Street trees	1/1	1/1
- Frequent seating units	0/1	0/1
- ‘Things to watch’	1/1	0/1
- Visible zebra crossings	0/1	0/1
- Availability of public transportation	1/1	1/1
- Availability of car parking w/ handicapped parks	1/2 <sup>a</sup>	1/2 <sup>a</sup>
- Availability of bike parking	0/1	0/1
<b>Access to Neighbourhood Parks</b>	<b>5/11</b>	<b>5/11</b>
a: Car parking is available but without handicapped parking		
- Flat topography or very limited grade changes	1/1	1/1
- Shops and stores that are used by older adults	1/1	0/1
- Public service buildings that are used by older adults	0/1	1/1 <sup>b</sup>
<b>Characteristics of Neighbourhood Environment</b>	<b>2/3</b>	<b>2/3</b>
b: There is a mosque adjacent to the park		
- 70% softscape, 30% hardscape ratio	1/1	1/1
- Mature trees providing sufficient amounts of shading	2/3	2/3
- Existence of flowers and bushes	1/1	1/1
- Existence of water features	0/1	1/1
- Clearly defined park entrances w/ park name signs	1/1	1/1
- No park walls, no dead-end walking paths	1/1	1/1

(cont. on next page)

**Table 5.2. (cont.)**

- 'Landmarks' to support older adults' familiarity	1/1	1/1
- Seating units w/ heat-resistant, natural materials	0/1	0/1
- Different types of seating units	1/1 <sup>c</sup>	1/1 <sup>c</sup>
- 'Foins for conservation' to gather older adults around a common focus	1/1 <sup>d</sup>	1/1 <sup>d</sup>
- Small facilities to 'exchange information and news'	0/1	0/1
- Opportunities for low-impact physical activities	2/2	1/2 <sup>e</sup>
- Lawn area for self-determined physical activities	1/1	1/1
- Restroom w/handicapped access	1/2 <sup>f</sup>	1/2 <sup>f</sup>
- Drinking water taps	1/1	0/1
- Physical precautions for park security	1/2 <sup>g</sup>	0/2
- Regular maintenance to support perceived comfort and safety	1/1	1/1
- No visually obstructed areas	0/1	0/1
c: Moveable chairs exist - d: A café exists - e: No walking trail exists f: Restrooms exist but exclusive for café customers - g: Park has dedicated security staff		
<b>Physical and Social Characteristics of Neighbourhood Parks</b>	<b>16/23</b>	<b>14/23</b>
<b>Total Score</b>	<b>23/37</b>	<b>21/37</b>

According to the results of scoring analyses, both 80. Yıl Cumhuriyet Park and Uğur Mumcu Park fail to meet the recommendations of the urban design literature for older adults' ease of walking to neighbourhood parks due to poor quality of sidewalks. While the insufficient width of sidewalks that lead to the sample neighbourhood parks can be an important problem forcing older adults to walk at the streets and increase the risk for car crashes, especially for the park users of 80. Yıl Cumhuriyet Park due to the heavy traffic surrounding the park, lack of 'things to watch' at the surrounding streets of Uğur Mumcu Park such as shops and stores can be a problem that affect older adults' motivation to walk to the park. On the other hand, 80. Yıl Cumhuriyet Park provides the advantage of having shops and stores adjacent to the park that are used by older adults such as grocery stores or pharmacies, accordingly older adults can combine their daily shopping routines and park uses. In terms of physical characteristics of neighbourhood parks, both sample parks meet the criteria for providing rich natural features and park facilities that support leisure, physical and social activities of older adults such as café and exercise equipment. While both of the parks provide restrooms as an important park

facility for age-friendly parks, these restrooms have a disadvantage for being exclusive for the café customers. Another problem in both parks is the same type of benches that exist in these parks and not suitable for the anatomical needs of older adults due to their iron material and stripped design. During the site observations, I noticed that providing a walking loop creates a great advantage for the park users of 80. Yıl Cumhuriyet Park as it is one of the most popular park facilities that older adults utilize in this park. It is also important for 80. Yıl Cumhuriyet Park that there are dedicated park security staff to control the park after evening as due to its woodland decreasing the visibility, the park is at higher risk for being used for ‘unwanted purposes’. While these results of the scoring analyses can only focus on the physical characteristics of neighbourhood parks and park surroundings, social factors such as older adults’ interactions with other park users have significant impacts on the use of neighbourhood parks by older adults, and these kinds of factors can only be understood by talking to the park users, this is why the user interviews is essential for this case study to evaluate the spatial experiences and perceptions of older adults.

## **5.2. Characteristics of the Study Participants**

In the scope of this study, 60 interviews are conducted in equal numbers in both 80. Yıl Cumhuriyet Park and Uğur Mumcu Park. In both parks, equal numbers of female and male park users who are aged at 65 years old and above are interviewed. Participants are asked to introduce themselves according to their age, education level, income, health condition, working status and home characteristics. However, a healthy data for income level of the participants cannot be gathered as due to concerns about exposing to fraud, majority of the participants refused to mention about their income level.

### **Age**

Almost half of the study participants are aged between 65 and 70 years old. While the oldest participant is 85 years old, the median age of participants is 72 in 80. Yıl Cumhuriyet Park, and 73 in Uğur Mumcu Park.



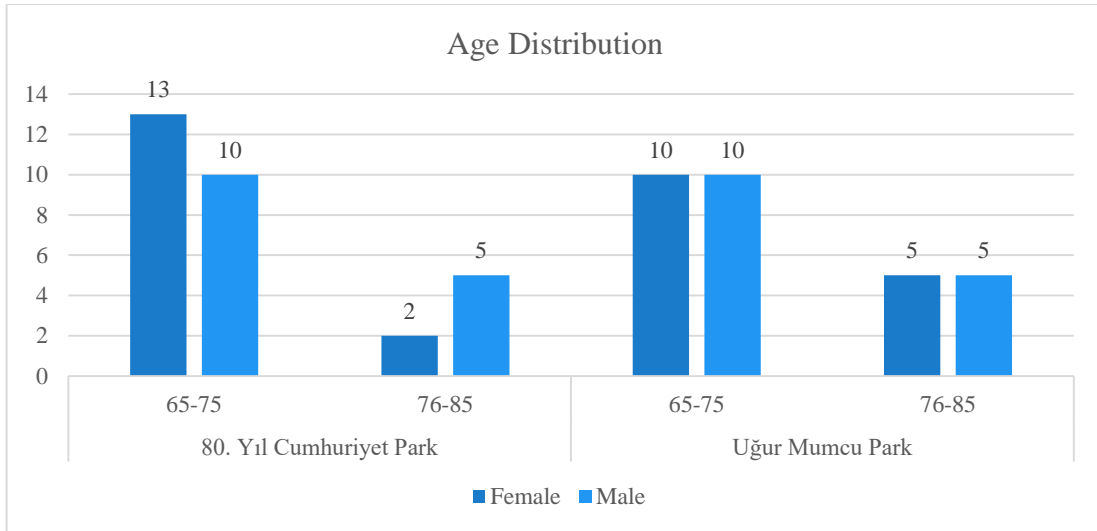


Figure 5.3. Age distribution of the study participants

### Education Level

All of the participants of the case study are educated, and at least graduated from secondary school. Average education level of the study participants is slightly greater than the average of Karşıyaka and Izmir (see page 63). One third of the participants (19 out of 60) have university or graduate degree, and the other one third of the participants (23 out of 60) are graduate from high school.

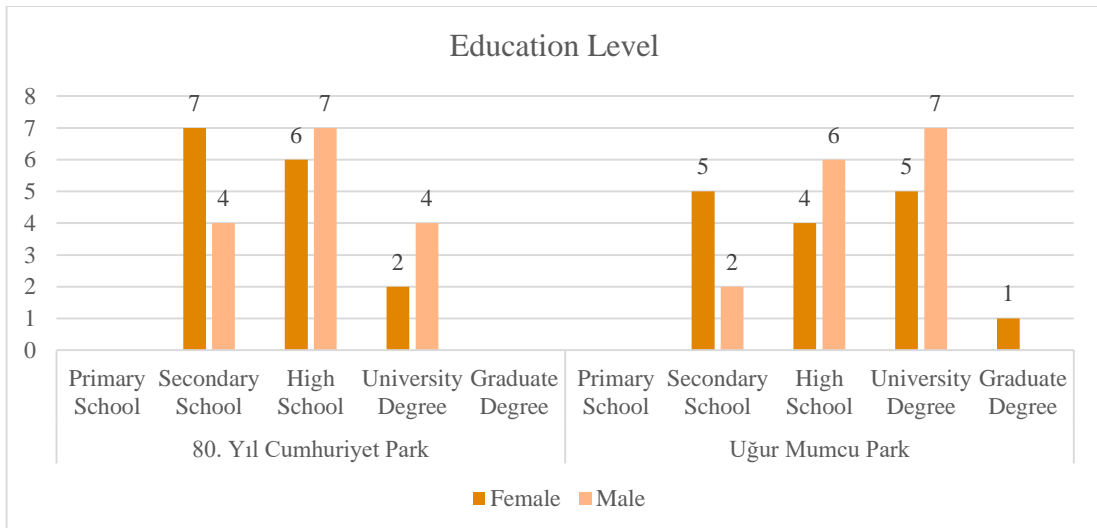


Figure 5.4. Education level of the participants according to their gender

## Self-Reported Health Conditions

Among all study participants, half of them report themselves to have at least one chronic health problem. Visual impairment and hearing difficulties as sensory problems are the most reported health problems (13 out of 60). It is followed by hypertension and diabetes as cardiovascular diseases (12 out of 60) and limited mobility (11 out of 60). 4 of the study participants use walking sticks, and one participant using wheelchair reported himself to need assistance in his visits of 80. Yıl Cuhmuriyet Park. Similar to the study of Hung & Crompton (2006), increase in the age appear to be related to health problems being a barrier to park use among the study participants, as 5 participants aged at 75 years old and above complain about especially limited mobility affecting their travel range and stay duration in the parks:

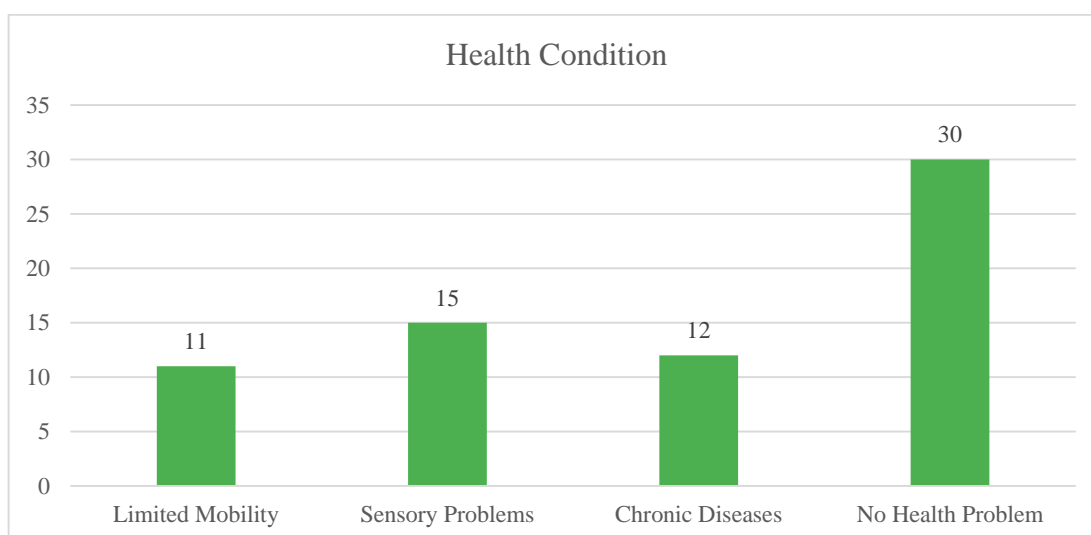


Figure 5.5. Self-reported health condition of the participants (multiple responses included)

*“It is hard to be outside when you are old. It used to walk to the Karşıyaka Çarşı to meet with my friends. But now I can barely walk to this park which is almost in front of my residence.”* (80. Yıl Cumhuriyet Park, 83, male)

*“I hate it when I bring my granddaughter to the park and she wants to stay longer but we have to go because I feel exhausted outside due to crowd.”* (80. Yıl Cumhuriyet Park, 82, male)

## **Working Status**

Among all participants, 5 out of 60 are occupied with a job. 4 of them described themselves not to be working because of an economic concern, rather, as a result of individual choice. None of them reported working to affect their park use duration and frequency. One participant tells that he is occupied with an exhausting job and visit parks to cope with work stress:

*“I work as a cleaning personal in a local restaurant. I do not complain because I need this job. But it is exhausting to deal with crowds. I often come to this park to rest my mind and spend some time alone.”* (80. Yıl Cumhuriyet Park, 66, male)

## **Home Characteristics**

In her study, Şenol (2019) finds that in Mavişehir neighbourhood in Karşıyaka that is full of gated communities with private gardens, a smaller number of older adults use parks compared to other neighbourhoods. I aimed to investigate if access to private green space alternatives affect the participants’ use of parks in Bahçelievler and Bostanlı neighbourhoods. According to responses, 5 out of 30 participants in 80. Yıl Cumhuriyet Park and 10 out of 30 participants in Uğur Mumcu Park those who have access to private gardens are less likely to perceive their private gardens as alternatives to parks, as these participants describe their private gardens not to provide opportunities for their physical activities and socialization purposes like the way they use neighbourhood parks:

*“Our building has a private garden with some trees and gazebos, we sometimes use it to hang out as neighbours. But I never spend time there by myself like the way I do in this park, what would be the point of being outside if you are not going to see other people?”* (Uğur Mumcu Park, 74, female)

*“We have private garden with a playground, some exercise equipments and benches. I do not even remember using any of them once, it is boring, I mean what would I watch if I, for instance, exercise there, cars at the parking lot? I prefer using this park*

*to exercise as it is full of trees and other people so I don't get bored.*" (80. Yıl Cumhuriyet Park, 66, female)

### **5.2.1. Participants' Purposes for the Park Use**

The sample neighbourhood parks of the case study are selected across the parks in Karşıyaka that provide opportunities for both leisure, physical and social activities via their park facilities. The results of the interviews indicate that among these opportunities, 'to be able to socialize' is the most mentioned park use purpose among older adults.

19 out of 60 participants report socialization as their main purpose for the park use. According to responses, participants enjoy spending time in neighbourhood parks with their friends, and they especially prefer gathering at park cafés. Participants describe that when they gather at home, they have to deal with catering and cleaning processes, and they perceive private cafés to be often crowded and expensive. Accordingly, these participants use these cafés in neighbourhood parks as affordable places where they can socialize. Moreover, these participants appreciate the opportunity to be in nature while they are using these cafés in neighbourhood parks:

*"We, as a group of high school friends hang out at least twice a week. Meeting location used to be a problem almost every time, as when we gather at home, it was a lot of work and disturbance for our husbands, and private cafes we expensive and too crowded. Accordingly, we started to gather at the café in this park. We enjoy hanging out here as the prices are cheap and the environment is pleasant.* (80. Yıl Cumhuriyet Park, 69, female)

*"When people in my music class hear that I live in Bostanlı, they respond like "Hey, you must be spending your retirement at fancy gourmet cafes there." There is no such thing, I am a retired teacher with limited income, even though I love being outside, I would never spend 7 – 8 liras for a cup of tea. Fortunately, we have this café in this park, I can have a cup of tea for a small price and enjoy the nature."* (Uğur Mumcu Park, 76, male)

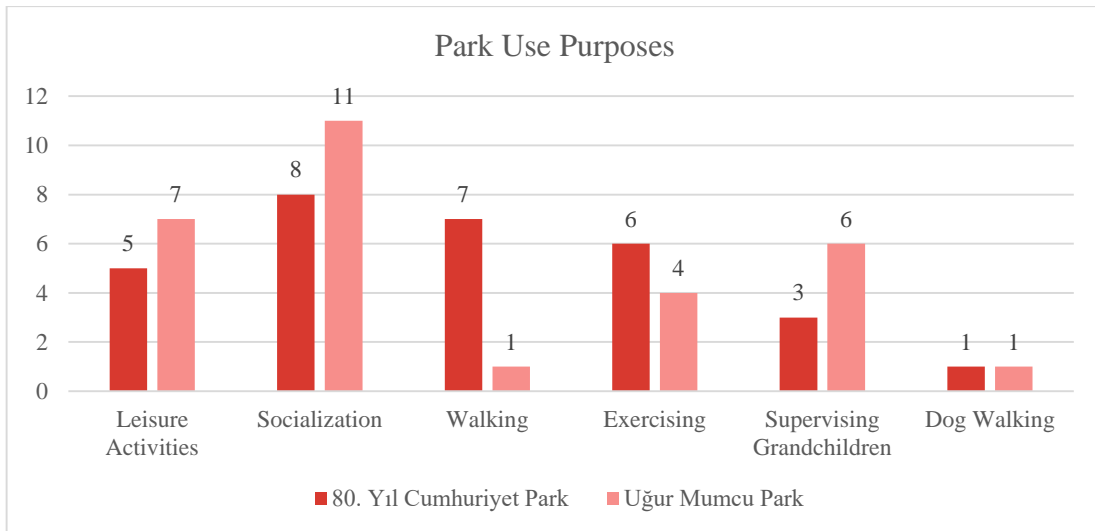


Figure 5.6. Park use purposes of the participants

Doing low-impact physical activities is another common park use purpose among the study participants. 10 out of 60 participants describe themselves to visit the sample parks to use the exercise equipment. In 80. Yıl Cumhuriyet Park, 7 out of 30 participants indicate walking as their main purposes of the park use, thanks to the existence of the walking loop there. These participants perceive walking as an easy and efficient way to maintain their physiological health. Even though there is no walking trail in Uğur Mumcu Park, one participant reports that she walks on the sidewalks around this park because she likes the park environment due to its high naturalness, and chooses to walk there instead of another park that is located 150 meters away, and provides a walking trail but has less natural features. The way older adults use neighbourhood parks to do physical activities in a naturally rich environment overlaps with the description of Aspinall et al. (2010) about the environmental characteristics of parks being an important contributor to the park use:

*“I do not even remember that if I ever skipped walking here before breakfast in 10 years. I believe that walking every day, even for like half an hour, can be the most important favour that older people can do for themselves. I am glad that we have this park with this walking trail.”* (80. Yıl Cumhuriyet Park, 80, male)

*“Retired people walk in this park so much that sometimes, especially in summer evenings, you need to be careful in order not to hit someone on the walking trail.”* (80. Yıl Cumhuriyet Park, 68, female)

The results of the interviews show that older adults enjoy using neighbourhood parks for their daily leisure activities (12 out of 60). Responses indicate that the need to ‘benefit from nature’ is an important motivation of the uses of neighbourhood parks by older adults. Apparently, as Bahçelievler and Bostanlı Neighbourhoods are both densely built settlements, older adults perceive visiting neighbourhood parks as an opportunity to escape from the stressors of the built environment such as traffic, and enjoy the nature. Older adults enjoy engaging with their daily leisure activities such as to read newspaper or book, drinking tea or coffee in the park environment where they can enjoy the nature and surrounded by other park users. This finding overlaps with the study of Sugiyama et al. (2009) indicating the importance of having ‘things to watch’ in the uses of parks by older adults:

*“This park is the only piece of land in this area where you can see some trees and hear sounds different than traffic noise.”* (80. Yıl Cumhuriyet Park, 82, female)

*“I visit this park almost every weekday. Sometimes my husband accompanies me, sometimes I come with a precious neighbour, for mercy's sake, at the very least I come here by myself, and it is just fine! I read my book, enjoy the great weather and a cup of tea... Sometimes I do not even notice how many hours I spend here so my husband has to call me so that we can have dinner.”* (Uğur Mumcu Park, 72, female)

Bringing their grandchildren to the playgrounds of neighbourhood parks is the park use of 9 out of 60 participants. Especially those participants in Uğur Mumcu Park perceive using the park with their grandchildren as an intergenerational activity that is beneficial for both, as while their grandchildren play, they can sit at the café and enjoy the park environment. However, the participants in 80. Yıl Cumhuriyet Park complain about insufficient numbers of and uncomfortable benches surrounding the playground:

*“This park is the only piece of land in this area where you can see some trees and hear sounds different than traffic noise.”* (80. Yıl Cumhuriyet Park, 70, female)

*“As both her parents work all day, school service brings our granddaughter to us when her school finishes at noon. She rests a bit at home, then we bring her to the*

*park. We sit at the café, enjoy the weather, watch the children play and hang out with other people while having a cup of tea.” (Uğur Mumcu Park, 72, male)*

According to interview results, the participants those are aged between 65 – 75 engage with all kinds of leisure, physical and social activities, the ones those who are older than 75 years old are more likely to only engage with stationary activities. Some of these participants perceive walking to parks as a physical activity, describing that it is better than not leaving their homes at all.

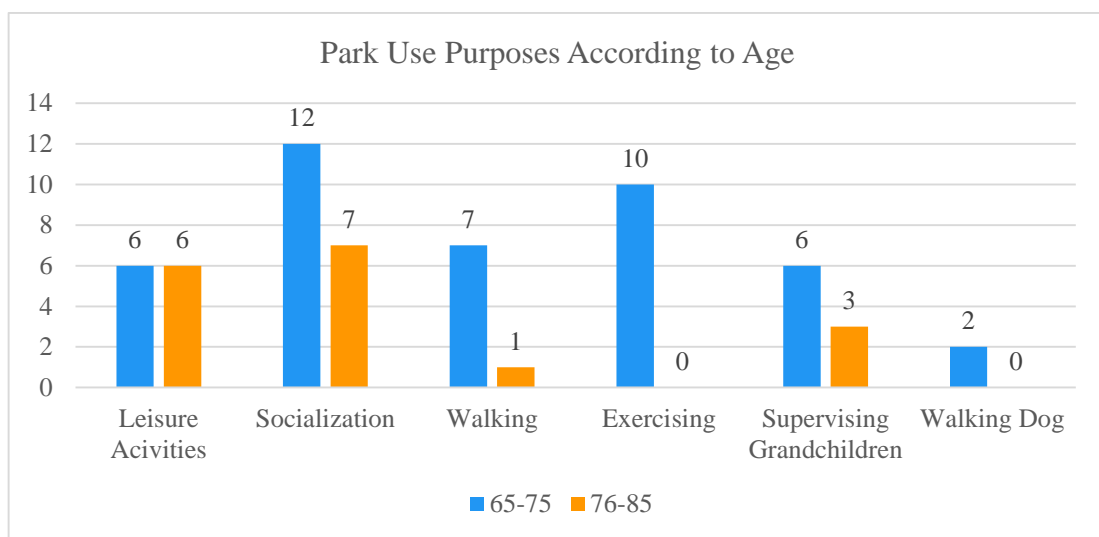


Figure 5.7. Park use purposes of the participants according to age

### 5.2.2. Participants’ Park Use Characteristics

According to Kang (2005), older adults are more likely to use parks as a part of their daily routines, as they often visit the same parks at the same time of the day, stay there for the same duration and engage with the same activities. The results of the interviews indicate similar park use characteristics to this assumption, as majority of the participants (52 out of 60) are frequent users of the parks and use neighbourhood parks with same park use characteristics.

## Park Use Frequency

According to interview results, one third of the participants (19 out of 60) are every day users, and the following one third of the participants (17 out of 60) use the parks 5 – 6 times a week.

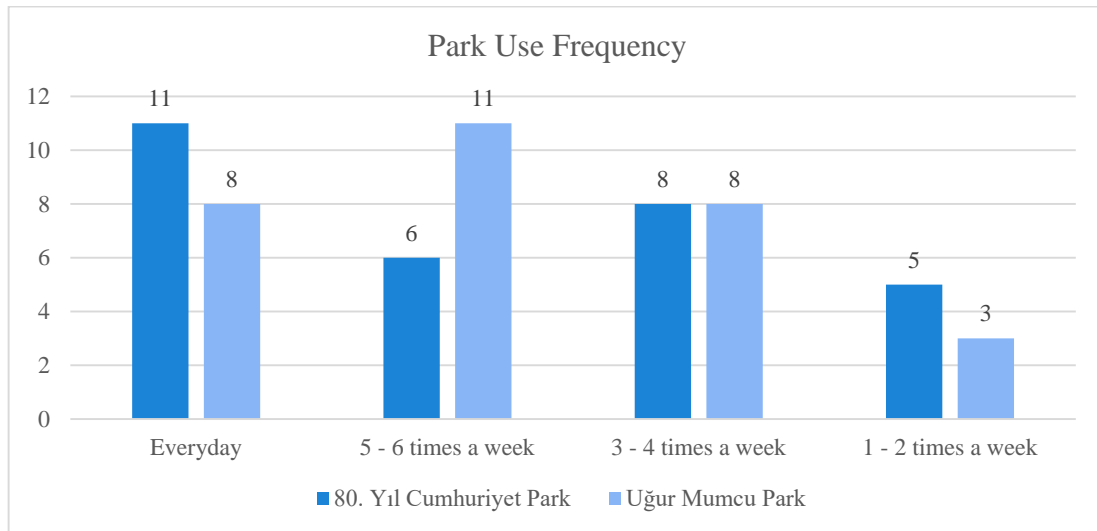


Figure 5.8. Park use frequency of the participants

According to the interview results, there is a significance between the park use purpose of older adults and their park use frequency. Pleson et al. (2014) indicate that older adults those who use parks for physical activities often visit these parks every day but stay less, compared to those who use parks for stationary activities. Older adults with socialization purposes commonly visit the parks less often but stay significantly longer. The responses of the participants indicate similar park use characteristics as 14 out of 19 every day users are those who use parks to exercise or walk. Interview results show that participants who use parks for 5 – 6 times a week are the ones those who use the parks for leisure activities are often in wife-and-husband composition. According to their responses, these participants enjoy engaging with their leisure activities such as to read newspapers in neighbourhood parks so that they can enjoy the park environment. The participants those who use the parks 3 – 4 and 1 – 2 times a week are more likely to be the ones meeting with their friends in the neighbourhood park cafés or bringing their grandchildren to play. Use of parks for these participants are often dependent to their meeting schedule with their friends and the school programme of their grandchildren.



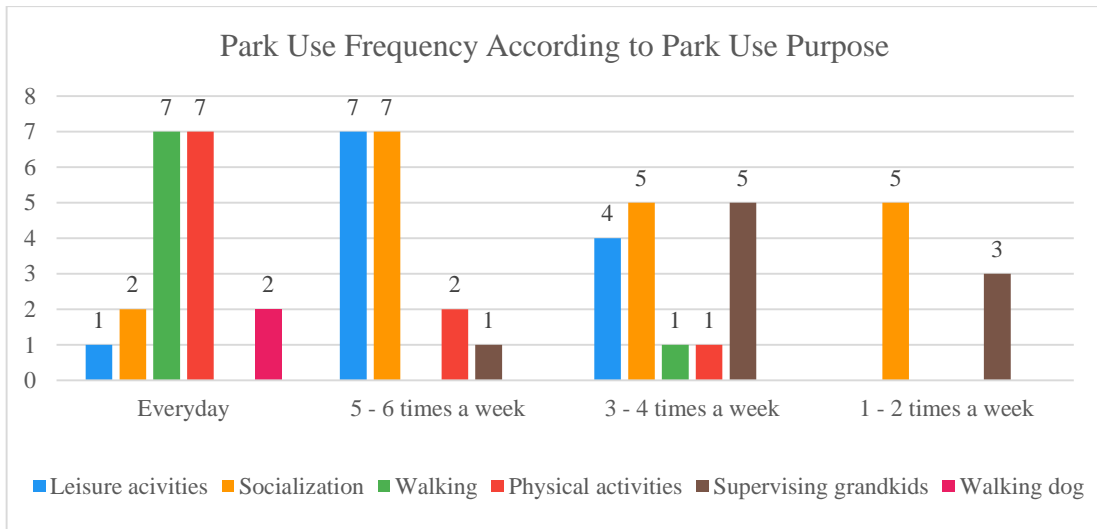


Figure 5.9. Park use frequency of the participants according to their park use purposes

### Park Use Duration

According to interview results, the participants spend approximately 1,5 hours in neighbourhood parks. It overlaps with the assumption of Loukaitou-Sideris et al. (2014) about older adults staying in parks for longer durations than other age groups.

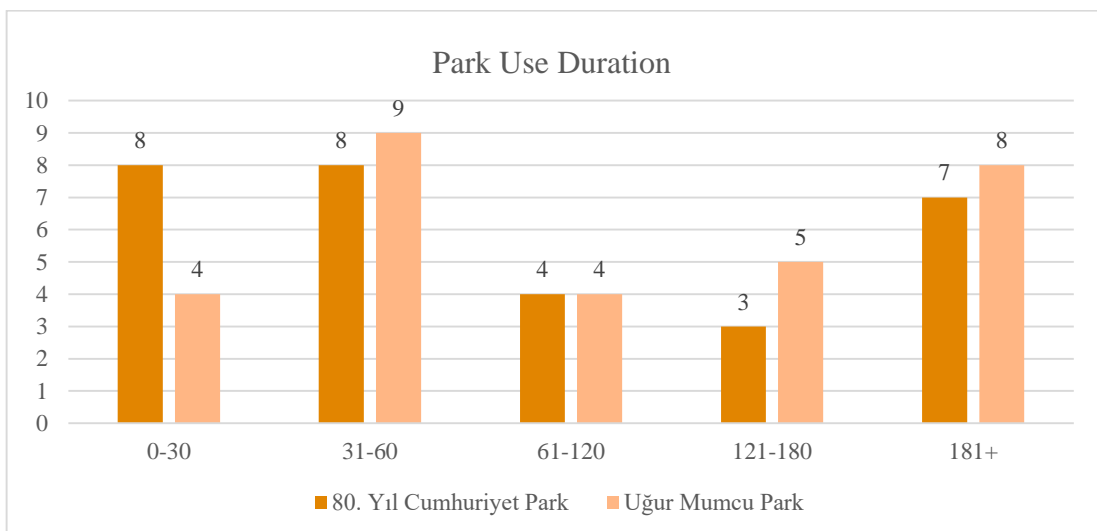


Figure 5.10. Park use duration of the participants

Half of the participants those who use parks less than an hour appear to be the ones those who engage with physical activities, supervise their grandchildren or walk their dogs. All of the participants with their grandchildren in 80. Yıl Cumhuriyet Park report that they would like to stay longer in this part but they cannot due to problems with

the uncomfortable benches surrounding the playground and their grandchildren getting bored quickly. Participants those who stay more than 2 hours in both parks are the ones those who use parks for leisure activities and socialization purposes. Parallel to the study of Orsega-Smith et al. (2004) indicating that older adults tend to use parks to cope with daily stressors and social isolation, the participants describe that they often get bored at home and want to see and interact with other people, and neighbourhood parks provide them a great opportunity for their purpose:

*“Instead of sitting at home and watching each other doing nothing, we [wife and husband] come to this park. Our son and grandson live abroad, so we can only see them few times a year. We are upset about missing the most precious moments of our grandson. We feel lonely at home, so we visit this park almost every day, spend most of our days at café resting, reading book, and watching children at our grandson’s age here playing to take solace of our grandson’s absence.” (Uğur Mumcu Park, 76, female)*

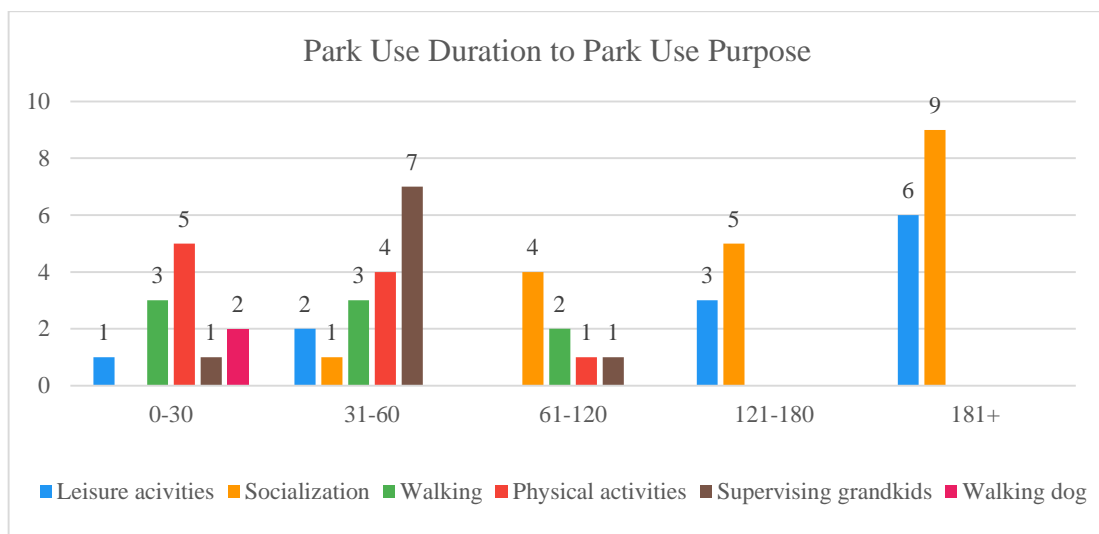


Figure 5.11. Park use duration of the participants according to their park use purposes

### Park Use Time Preferences

According to the interview results, both parks reach their maximum numbers of older adult park users in between 16:00 – 20:00. The fact that café as the most popular park facility in both parks starting to operate at 15:00 appear to be major determinant of the park use time preferences. Moreover, the participants describe that they often use the

parks after they complete their daily routines such as homecare or shopping, which often corresponds to post 15:00. According to responses, while older adults are less likely to use parks after 19:00 in winter, their timeframe for the park use expands up to midnight during summer.

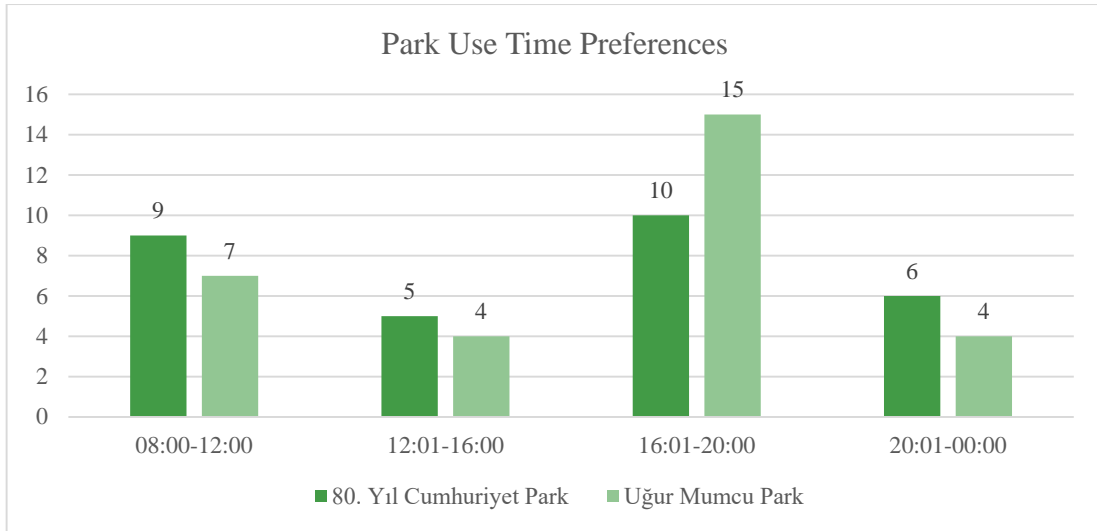


Figure 5.12. Park use time preferences of the participants

According to the responses, while physical activities of the participants in the parks often take place in between 08:00 – 12:00 as older adults value morning exercise and walking, their social activities in are more likely to occur in between 16:00 – 20:00 in winter, and 16:00 – 00:00 in summer. The operating hours of the park cafés (15:00 – 23:00) appear to be the common reason shaping the social activities of older adults in these parks:

*“In summer nights, everybody from 7 to 77 come together in this park. We sit at tea house and talk about old days, politics and other stuff until midnight, drink tea and coffee and of course crack packages of sunflowers, children play around. It happens to be a very chirp environment.”* (80. Yıl Cumhuriyet Park, 77, male)

*“I walk in this park very early hours of the day because this is a very crowded area and it is the only period of the day that you can enjoy the quietness.”* (80. Yıl Cumhuriyet Park, 80, male)

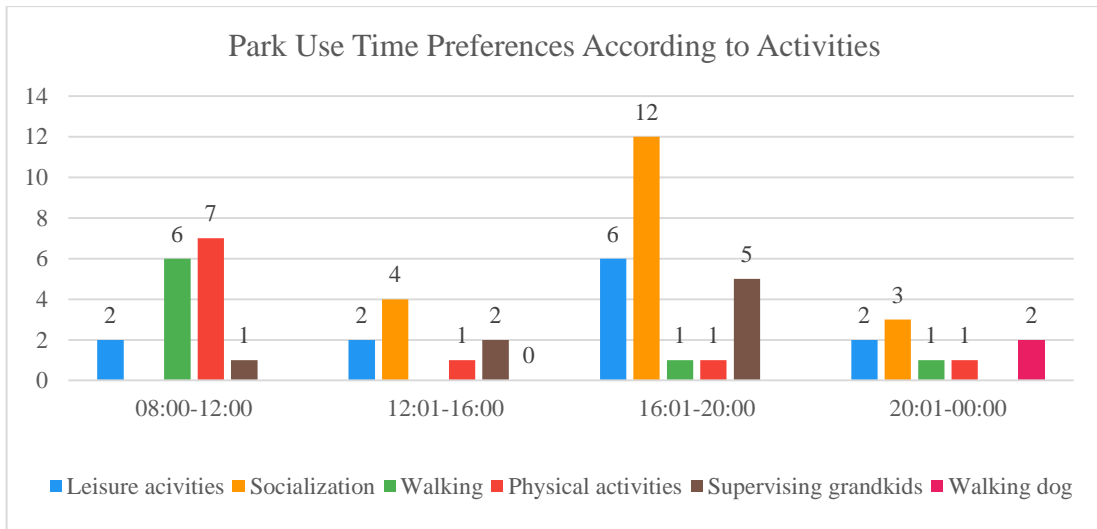


Figure 5.13. Park use time preferences of the participants according to their activities

### Companionship

According to responses, two third of the participants use parks in groups. These groups are based on different compositions such as wife-and-husband, group of friends or group of friends with grandchildren. In contrary to the findings of Pleson et al. (2014) about tendency of older adults to exercise in parks in groups of friends, participants of this study are more likely to do physical activities alone (13 out of 18). In Uğur Mumcu Park, as the playground is attached to the café, a composition of group of friends with grandchildren is seen in this park, as while their grandchildren play, these participants can socialize with their neighbours those who are with their grandchildren as well.

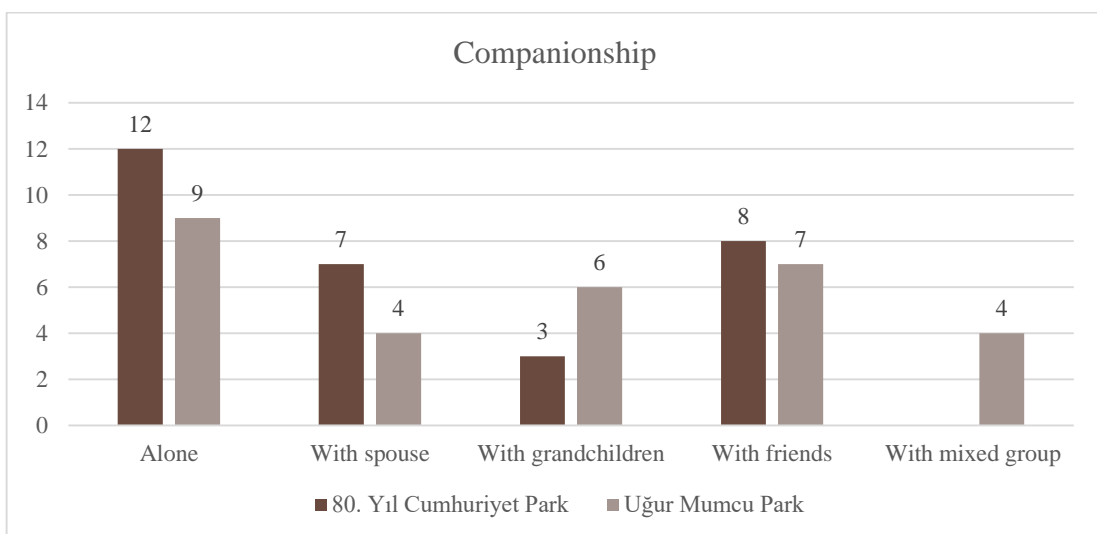


Figure 5.14. Companionship status of the participants

### 5.3. Summary

In Karşıyaka, park use purposes and park use characteristics of older adults those who use neighbourhood parks appear to take shape according to their daily routines and the characteristics of these parks. As 80. Yıl Cumhuriyet Park and Uğur Mumcu Park are selected across the neighbourhood parks in Karşıyaka with highest numbers and greatest variance of park facilities, older adults are provided lots of opportunities in these parks to engage with their daily leisure, physical and social activities. The way that the physical characteristics of the parks affecting the park use purposes and park use characteristics of older adults can be seen with differences in the land-use characteristics surrounding these parks and park facilities. For instance, as 80. Yıl Cumhuriyet Park is surrounded by shops and stores, older adults combine their park uses with daily shopping routines. It can also be observed that higher numbers of older adults use 80. Yıl Cumhuriyet Park to engage with physical activities as the park provides a walking loop which does not exist in Uğur Mumcu Park.

Park use characteristics of the participants indicate that they use parks frequently and systematically as a part of their daily routines, for instance, to do exercise in morning or have afternoon tea with their friends in the cafés of neighbourhood parks. In both parks, the operating hours of cafés appear to shape the park use time preferences of older adults. Park use time preferences of older adults change according to the season as well, and expand up to midnight during summer. While older adults those who use parks to walk, exercise or walk their dogs are more likely to use parks every day but stay there less, the ones using parks to gather with their friends spend significantly more time in the parks.

## CHAPTER 6

### HOW OLDER USERS EVALUATE THE AGE-FRIENDLINESS OF TWO PARKS IN KARŞIYAKA

This chapter aims to demonstrate the results of interviews with 60 park users at 65 years old and above in two relatively age-friendly neighbourhood parks in Karşıyaka: 80. Yıl Cumhuriyet Park in Bahçelievler Neighbourhood and Uğur Mumcu Park in Bostanlı Neighbourhood. In this chapter, the most significant factors that are expressed by the participants of the study to be affecting their uses of these neighbourhood parks are evaluated under 5 main topics. The first section relates to the characteristics of the neighbourhood environment, second section is about access to parks and the sections in between 3 and 5 are indicating the factors about the physical and social characteristics of the neighbourhood parks.

#### 6.1. Neighbourhood Characteristics and Park Use Preferences

Karşıyaka is one of the most well-known districts of not just Izmir, also Turkey, due to the strong **sense of community** of its residents to the district they live. Especially for to the perceptions of older adults those who spent great proportion of their lives there, living in Karşıyaka can be ‘something to be proud of’. This strong sense of attachment of residents of Karşıyaka to their community is often related to their greater satisfaction with the socio-cultural dynamics of the district. For instance, one of the participants describes Karşıyaka as: “*where a single woman can walk at the streets without being fearful even at the middle of the night*”. One other participant proudly pictures Karşıyaka as: “*where everybody smiles to each other when they encounter at the streets*”. These ‘stereotypes’ are important and commonly used by individuals in Turkey to describe their ‘perceived quality’ of the districts.

Socio-economic characteristics and cultural background of residents of a district is one of the strongest factors shaping its ‘**social dynamics**’ (Byrne & Wolch, 2009). Looking back to the historical evolution of the public life in Karşıyaka can be beneficial

to understand the origin of these social dynamics. Karşıyaka as a small rural settlement before 20<sup>th</sup> century, have begun to encounter migrations after the construction of Izmir – Aydın Railway that crosses across Karşıyaka, and the beginning of ferry services in late 1880's. As a result of increasing transportation options and growing interest for the natural richness of Karşıyaka, especially Levantines and affluent tradesmen started to construct majestic mansions with large gardens oriented to the Gulf of Izmir. After the proclamation of the Republic of Turkey, certain spatial examples of the public policies for the modernization of the country began to be seen in Karşıyaka with newly created public spaces: especially beaches, sea baths, music halls and tea gardens. Accordingly, in time, Karşıyaka became a district where the affluent people with different cultural and ethnical backgrounds lived together and rich public services are provided for all. Even though today, most of these mansions and public spaces are demolished, its historical background still relates to the socio-cultural dynamics of Karşıyaka (Erdoğan, 2013).

During the interviews, I observed that this strong sense of attachment of older adults in Karşıyaka relate to their answers to the questions involving their perceptions about living in the neighbourhoods of Karşıyaka, and in some cases, deter them from providing 'objective' responses. While these older adults are explaining some of their problems in the neighbourhoods they live, for instance, their complaints about recent changes in the public transportation systems, or lack of sufficient amounts of green spaces, they avoid making too much criticisms and conclude most of their complaints with statements such as: "*after all, it is great to live in Karşıyaka*".

I noticed that these positive perceptions of older adults about Karşıyaka, and accordingly about their neighbourhoods strongly relate to their uses of neighbourhood parks. According to responses, almost all of the participants (58 out of 60) are satisfied with living in their current neighbourhoods and would not consider living anywhere else. These older adults describe their neighbourhoods to provide "*quiet environments with respectful people*". Similar to the findings of Kweon et al. (1998), use of parks in their neighbourhoods contribute to the sense of attachment of Karşıyaka's older adults. The streets and neighbourhood parks of Karşıyaka provide older adults chances to find other people to talk and meet their needs for socialization. This need for interacting to other people is an important motivation among older adults to use neighbourhood parks:

*“I am glad to live in a neighbourhood that still have neighbourliness. Both of my children live in different cities, so life would be challenging for me if I did not have my neighbours as my best friends. We often use this park to hang out as we are too crowded to gather at home. Sometimes, we encounter other groups of people at our age and combine our tables, and tryst to gather again. It would not be a lie if I say that I have met dozens of people in this park.” (80. Yıl Cumhuriyet Park, 68, female)*

### **6.1.1. Pleasant Neighbour Relations as a Motivation to Park Use**

According to very positive responses of participants about being satisfied with living in their existing neighbourhoods, **‘neighbourliness’** have important contributions over the use of neighbourhood parks by older adults in Karşıyaka. **Spontaneous social encounters** at the streets or parks motivate older adults to go outdoors. For instance, the small talks with other people at the parks about their daily routines or the exchange of local news in front of a store with its owner positively relates to the perceptions of older adults about these public open spaces. As well as older adults’ direct social interactions, seeing other people around in joy, for instance, hearing the laughter of the children or seeing people smile and help to each other appear to be a psychological factor that puts older adults be in a better mood:

*“This is a completely elegant neighbourhood with its all aspects. Our streets are clean and safe. Everybody here has a certain level of education. Nobody disturbs to each other. I mean look, there is a mosque here, constructed recently. And there is a liquor store behind it. I see old people say greetings to the owner of the store when they exit the mosque after their prayers. I find it precious that everybody here are respectful and kind to each other.” (Uğur Mumcu Park, 76, female)*

On the other hand, perceiving these social encounters in neighbourhood public open spaces to be unpleasing can be a barrier to park use. As a crowded settlement like Karşıyaka, it is inevitable to avoid direct or indirect social encounters in public open spaces. During the interviews, only 2 out 60 participants described themselves to have negative perceptions about the social characteristics of their neighbourhoods. I tried to



understand the reasons of their negative perceptions and if these perceptions affect their park use. Apparently, a mismatch of chemistry with their neighbours affect these older adults' perceptions about their neighbourhoods, and parallel to the descriptions of Gold (1977) for the intrapersonal constraints as a park use, they use neighbourhood parks less compared to the ones in this study those who have the most positive perceptions about their neighbourhoods:

*“For people at our age, our grandchildren are above anything else. They are the reason I moved here 5 years ago from Manisa. However, I do not like this neighbourhood, there is no privacy, it is like a gossip heaven of old women, they sit at their balconies and wait for something scandalous to happen. My wife does not even have any relationship with any of the neighbours because their chemistries do not match. I do not care about other people or hanging out with neighbours after this age, but I guess neighbourliness is more important for women and this is why she does not, so accordingly, I do not enjoy living in this neighbourhood. (80. Yıl Cumhuriyet Park, 73, male)*

*“I cannot believe how that much of snob people managed to come together in this neighbourhood. Recently, I was swinging my grandson at the playground, then one of these old women who believe to rule everything brought her grandson and asked for us to leave the swing for them because accordingly he gets mad when he wants to swing but it is occupied. How dare could she asked me to retain my grandson so that hers can swing? Is her grandson more valuable than my grandson? I am sure she despised me because of my clothing. If it was not for my grandson, I would never use this park.” (Uğur Mumcu Park, 68, female)*

Some unique ways that the participants of this study use neighbourhood parks in Karşıyaka demonstrates how the **neighbourliness relationships** can influence the park use among older adults. Moreover, these uses show differences according to gender. According to Mills (2007), men have extended access to spaces for socializing such as ‘tea houses’, where especially non-working older men gather and spend their free time with playing card games, watching football matches on television or discussing politics. On the other hand, especially older women have less access to these kinds of places for socialization. Apparently, these older adults may perceive neighbourhood parks as places that they can have extended opportunities to socialize. One of the participants in Uğur

Mumcu Park describes that the times she gets bored in her home, wants to socialize but her friends are unavailable, she visits this park and spontaneously talks to people here, such as the park maintenance staff about vegetation care or the café personnel for some chit chats. Moreover, older adults feel more confident about meeting with new people in neighbourhood parks. Responses indicate that older adults in Karşıyaka's neighbourhood parks become familiar with the faces of the frequent users of these parks, and develop a sense of not being alone. For instance, one participant in 80. Yıl Cumhuriyet Park's café informed me about other frequent park users she knows, not exactly by names, but with portrayals such as: "the woman with red hair who looks like a movie star reading the same book for months" or "the woman who always barrows my lighter and complains about not being able to quit smoking". For these older adults, knowing that there will be other people that they are familiar within neighbourhood parks motivates them to visit parks for spontaneous socialization purposes:

*"When I leave my home and head to the park, I know that some of my neighbours will be there. We do not have to call each other every time to gather at the tea house. Among us, whoever has a free time just come there and wait for the others."* (80. Yıl Cumhuriyet Park, 65, male)

### **6.1.2. Surrounding Land-Use Characteristics Shaping Park Use**

Along the social characteristics, older adults in Karşıyaka have mostly positive perceptions about the land-use characteristics of their neighbourhoods, as a factor related to the physical characteristics of the neighbourhood environment.

Park surroundings of the two sample neighbourhood parks in this study have complete opposite **land-use characteristics**. While 80. Yıl Cumhuriyet Park is located in a busy environment and all surrounded by different kinds of shops and stores, Uğur Mumcu Park is located in a quiet environment and except for a mosque, surrounded by all residential buildings. The study of Parra et al. (2010) indicates that having shops and stores close to their homes can motivate older adults to be outside their homes. In this study, I find that in 80. Yıl Cumhuriyet Park, the existence of shops and stores that are adjacent to the park and also distributed across the neighbourhood contribute to the uses

of neighbourhood parks by older adults positively. At the same time, I noticed that the absence of mixed-uses adjacent to Uğur Mumcu Park do not have negative any effects over the park use. It appears that, participants in both neighbourhood parks are satisfied with the existing land-use characteristics of their neighbourhoods, as only 4 out of 30 participants have negative perceptions about the existence of mixed-uses adjacent to 80. Yıl Cumhuriyet Park, and only 3 out of 30 participants reported themselves to prefer having some shops and stores adjacent to Uğur Mumcu Park instead of all residential buildings. I observed that some of these positive perceptions of older adults are related to being adopted the existing conditions too much and decreased tendency to think about possible changes:

*“When you grow older, you begin not to imagine radical changes around you, because you are already experienced so many changes that you perceive to be great turning out bad. I imagine having some shops adjacent to this park, it could have been great like Balıkçı Park. However, I still would not want it, because I get so used to the way this park has been for years, and I think with its pros and cons, it should remain same” (Uğur Mumcu Park, 75, male)*

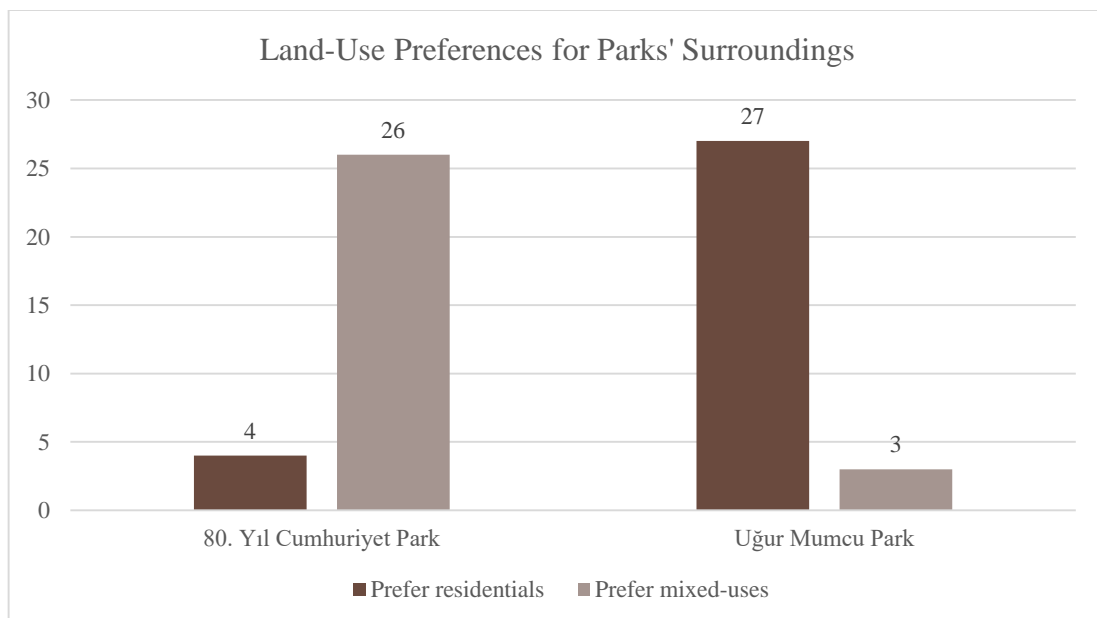


Figure 6.1. Participants’ preferences for adjacent land-uses of the parks

In 80. Yıl Cumhuriyet Park, the satisfaction of older adults with having mixed land-uses adjacent to the park is related to the contributions of these shops and stores to

the sense of comfort and sense of safety of older adults. According to World Health Organization (2007), in an age-friendly built environment, older adults are expected to have access to certain commercial units closer to their homes, such as grocery stores or pharmacies, and public service buildings such as religious facilities or health institutions to achieve their ‘aging in place’. Parallel to these recommendations, older adults with great access to these kinds of units close to their homes Bahçelievler Neighbourhood are satisfied for being able to compensate their daily shopping routines independently.

Responses indicate that the existence of various shops and stores adjacent to 80. Yıl Cumhuriyet Park contributes to older adults’ use of this park in three ways. First of all, older adults enjoy combining their daily shopping routines with their uses of parks. These older adults complete their shopping routines and stop by the park to rest for a while, have a cup of tea and enjoy the park environment. It is very common to see older adults with shopping bags in the café of the park, talking about the prices or discounts in the shops with other people in the park.



Figure 6.2. Land-use characteristics of the buildings adjacent to 80. Yıl Cumhuriyet Park

Second, these various shops and stores distributed among neighbourhood make the time older adults spend outdoors more pleasing. Responses indicate that older adults often stop by in front of certain shops and stores to observe their windows and look for the prices and discounts, have small talks with their owners, and for instance, if they are visiting the park with their grandchildren, to buy them some snacks.

As the third contribution, having good social relationships with the owners of these shops and stores comforts older adults, and make them feel safer while they are walking to and inside of the park. In her concept of 'eyes on the street', Jacobs (1961) explains that the feeling of being surrounded by other people decrease individuals' fear of exposing to crime. In 80. Yıl Cumhuriyet Park, existence of nearby shops and stores mostly open until midnight make older adults confident for knowing that they can count on the owners of these commercial units in case of an emergency. For instance, during the interviews, one of the participants told me about his grandson being threatened by burglars at the middle of the night, and owner of a 7/24 open grocery store noticed and helped him and saved him from getting rubbed. Apparently, older adults those who get used to be surrounded by shops and stores, and taking advantage of them are less likely to prefer living somewhere else without access to these kinds of shops and stores:

*"I love my neighbourhood. I live here for 23 years and I never considered moving out. One of my neighbours moved to a gated-community in Mavişehir last year. She often visits me and tells that how much she misses her life in this neighbourhood. Recently, she complained about being have to drive in order to reach the closest tailor and wasted half of her day for such a simple task. You see? It is not all about the quality of home. I mean this neighbourhood might be old, our buildings may not be fancy. But it is a neighbourhood that where everybody can count on each other. For example, if I get sick today, I can call the daughter of my dear friend who owns a pharmacy nearby, and she would send me medicine in no more than half an hour via her apprentice. Or if I buy too many things that I cannot carry by own from the grocery store, one of the workers would surely assist me to the way home."* (80. Yıl Cumhuriyet Park, 77, female)

On the other hand, few older adults in 80. Yıl Cumhuriyet Park (4 out of 30), have opposite perceptions about being surrounded by mixed-uses in their neighbourhood and the park. According to these participants, these shops and stores discomforts them due to attracting crowds, bringing outsiders to the neighbourhood and causing noise pollution. Functions of these shops and stores appear to have important effects on the perceptions of older adults as well:

*“I do not think that anyone could explain me the point of having 3 tobacco shops in a row. There are too many shops surrounding this park, I do not enjoy seeing them blocking the sidewalks, or teenagers buying alcohol and cigarettes from them and secretly consuming them in this park. Moreover, I hate waking up at the middle of the night due to loud sounds of their shutter closure.”* (80. Yıl Cumhuriyet Park, 73, male)

While majority of older adults in 80. Yıl Cumhuriyet Park are satisfied with the existence of mixed-uses adjacent to the park, older adults in Uğur Mumcu Park are also satisfied with the park being surrounded by residential units only as well. During my interviews, I noticed two strong factors that contribute to the satisfaction of these older adults with the lack of shops and stores adjacent to the park. First, even though none of the buildings adjacent to the park have shops or stores at their ground floors, the park itself provide a municipally owned small grocery store. Furthermore, there are various shops and stores in less than 300 meters walking distance to the park. Accordingly, older adults those who have access to this park also have access to these shops and stores that are not necessarily adjacent to the park, but close to it. As these older adults can already compensate their daily shopping routines independently, most of them do not prefer to have shops and stores adjacent the park as well. Some of these older adults express that combining their daily shopping routines and park uses is not something that they would prefer to enjoy:

*“Why would I want to visit a park carrying shopping bags with me? I find it annoying that people put their shopping bags on benches and prevent other people from sitting.”* (Uğur Mumcu Park, 74, female)

Second, older adults using Uğur Mumcu Park describe the quietness of the park as one of the strongest motivations for their uses of this park. Some of these older adults indicate that this park can remain quiet because there are no shops or stores around that could have been attracting crowds or brining traffic. This is why they are satisfied with the park being surrounded by only residential units:



*“One of the aspects of this park that I appreciate most is its quietness. There are no strangers of traffic around so that our grandchildren can play safely. I do not think that I would be the same if there were commercial units around.”* (Uğur Mumcu Park, 73, male)

Nevertheless, 3 participants indicate that they would prefer to see certain shops and stores adjacent to the park. While these participants do not necessarily prefer to be surrounded by mixed-uses all, they just express that existence of a few shops and stores may have contributed to the liveliness of the park:

*“I would prefer to have at least a few numbers of stores near the park such as a hairdresser, or a kindergarten for instance, would not it make the park more attractive as well? Imagine more children playing here, their parents watching them from park’s café.”* (Uğur Mumcu Park, 75, female)



Figure 6.3. Land-use characteristics of the buildings adjacent to Uğur Mumcu Park

## **6.2. Access to Green Spaces in Densely Built Neighbourhoods**

Access to neighbourhood parks, indicating the available amount of park acreage in a walking distance to individuals’ homes (refers to 300 meters for older adults) and

their ability to get to these parks comfortably and safe. In this study, the most important constraints to the use of neighbourhood parks by older adults appear to be related to the access to parks: insufficient amounts of park acreage in Karşıyaka and poor walkability of the streets.

Karşıyaka as a very **densely built settlement**, has one of the largest recreation areas of Izmir: Bostanlı Seashore Recreation Area with 98.605 m<sup>2</sup> green space (Sultani, 2019). Most parts of this recreation area have been re-designed in recent years according to the strategies of Izmir Metropolitan Municipality to represent the city's strong identity in relation to the sea. While the recreation area attracts great numbers of users coming from neighbouring districts to Karşıyaka as well, participants of this study do not use it frequently, instead, they prefer to use neighbourhood parks that are proximate to their homes. Responses indicate that older adults feel more comfortable using neighbourhood parks because they are more familiar with these parks and the other people using these parks. According to Glass & Balfour (2003), localized services and resources are more important for the everyday lives of older adults. This is why neighbourhood parks have more privileged importance for the 'aging in place' of older adults. For instance, one of the participants in Uğur Mumcu Park expresses that even though she lives in an equal distance to both this park and Bostanlı Recreation Area, she prefers to use Uğur Mumcu Park most times, because with its cosy and familiar environment, this park puts her in a better mood:

*"I do not enjoy going to Bostanlı Recreation Area because of the crowd. It becomes extremely crowded especially if the weather is good and makes it impossible to enjoy your time there. People there do not really know how to behave. They talk so loudly, do not control their children playing ball games, throw their garbage away. This is why I prefer to use neighbourhood parks instead, because they are not dominated by the people coming from other districts."* (Uğur Mumcu Park, 66, female)

Accordingly, older adults in Karşıyaka value neighbourhood parks as providing them great opportunities for their spontaneous actions such as to go for a walk and take fresh air, and their organized activities such as to exercise or socialize with their friends. However, not all older adults in Karşıyaka have '**equal**' access to parks, in terms of the available amount park acreage for them in a walking distance (300 meters). When I ask



older adults about if they have access to neighbourhood parks in 300 meters distance to their homes, most participants (20 out of 30) in 80. Yıl Cumhuriyet Park, and all of the 30 participants in Uğur Mumcu Park responded positive. On the other hand, especially participants in 80. Yıl Cumhuriyet Park describe that most parks in their neighbourhood cannot manage to meet their needs for leisure, physical and social activities, commonly due to insufficient park sizes and limited park facilities. Apparently, these parks are more likely to respond to the play needs of children, and cannot manage to attract older adults.



Figure 6.4. 80. Yıl Cumhuriyet Park as one of the limited green spaces in a densely built settlement

Older adults are often expected to use neighbourhood parks that are located less than 300 meters walking distance to their homes (Schipperijn et al., 2010). In this study, older adults in Karşıyaka exceptionally describe that if they do not perceive the closest parks to their homes to be ‘attractive’ enough, they tend to walk more than 300 meters to a ‘farther but more attractive’ park. For instance, one of the participants in 80. Yıl Cumhuriyet Park indicates that even though there is a small park adjacent to her home, she does not use it, instead, she walks 800 meters to visit 80. Yıl Cumhuriyet Park as it provides more opportunities for the activities she prefers to engage with (Figure 6.4.):

*“I moved to this neighbourhood in 1998. Except for the increase in traffic, almost nothing changed. It has always been full of buildings. We have this park to breathe, and*

*[Girne] Kültürpark, that's is. Even though there are small parks around, I would not use them, why would I? For instance, I live near Avni Akıl Park, which consist of a swing and slide, that's it. So, I walk here to take some fresh air and exercise.” (80. Yıl Cumhuriyet Park, 70, female)*

Apparently, the significantly positive picture of older adults' having access to at least one park in a walking distance changes when the available amount of park acreage in their neighbourhoods is taken into consideration. Perceptions of the participants about the sufficiency of available amount of park acreage in their neighbourhoods is slightly negative, especially in Bahçelievler Neighbourhood.



Figure 6.5. A small park with limited park facilities in Bahçelievler Neighbourhood

Bostanlı with its population of 31.708 residents is the second, and Bahçelievler with 26.641 residents is the fourth densest neighbourhood in Karşıyaka according to 2018 data (Turkish Statistical Institute, 2019). Both Bostanlı with 1,8 m<sup>2</sup>, and Bahçelievler with 0,8 m<sup>2</sup> neighbourhood park acreage per capita, fail to meet the Turkish standards about 'providing minimum 2 m<sup>2</sup> neighbourhood park acreage per capita', and significantly far away from the recommendations of World Health Organization (2010) for 'minimum 9 m<sup>2</sup> park acreage per capita' (Aksoy, 2001). In both neighbourhoods, most buildings do not provide private gardens. Considering the importance of older adults' need for green

spaces to achieve healthy aging, the poor access to sufficient amounts of park acreages can be a problem affecting their quality of life:

*“I used to live in Cologne before my retirement. Even though I love living in İzmir with its most aspects, sometimes I miss the greenness of German cities. My sons grew up climbing trees, wallowing on grasses in parks... Neighbourhood parks there were large enough for us to have picnics. But cannot see my granddaughter grow up like that as we barely have parks in our neighbourhood. I love my neighbourhood, its people, the vitality, but that does not change the fact that it is very poor in green spaces.”* (80. Yıl Cumhuriyet Park, 73, male)

*“People imagine that all of us in Bostanlı living in these fancy seashore buildings, walking every day at the recreation area, enjoying the sea. However, for people like us in inner areas, there are barely open spaces that we can breathe.”* (Uğur Mumcu Park, 74, female)

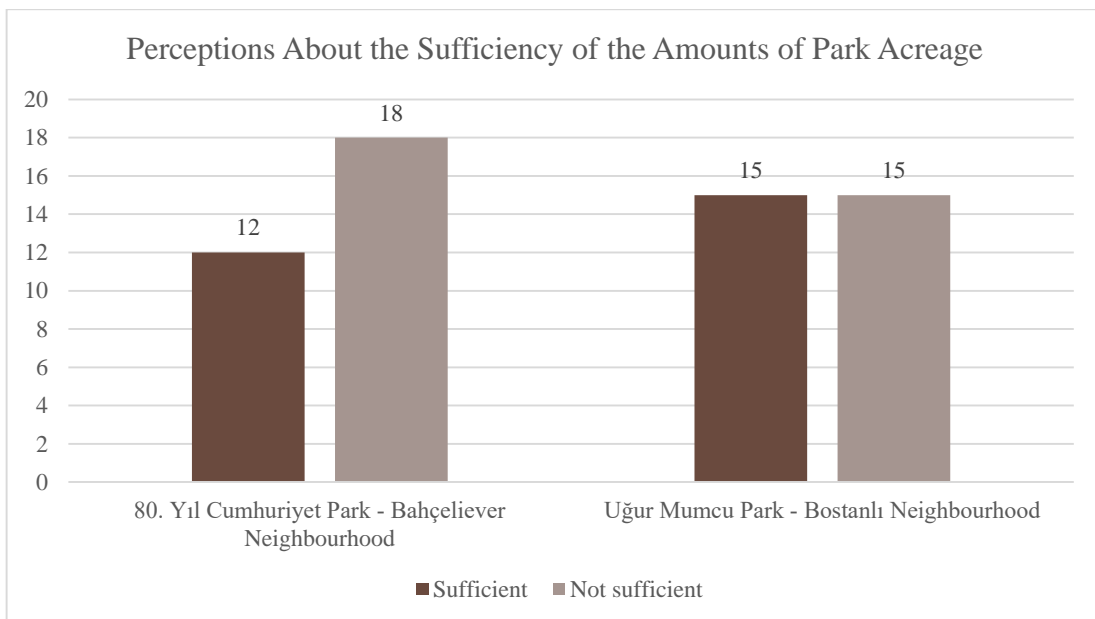


Figure 6.6. Participants’ perceptions about the sufficiency of the amount of park acreage in their neighbourhoods

When I analysed the responses of older adults in 80. Yıl Cumhuriyet Park those who are reportedly satisfied with the amount of park acreage in their neighbourhood, I noticed that the strong sense of attachment of these older adults to their neighbourhood deter them from considering the lack of sufficient amount of park acreage as a problem.

While these participants do not claim that they have access to sufficient amount of park acreage, they compare Bahçelievler Neighbourhood with other settlements and describe their neighbourhood to be ‘lesser evil’:

*“Have you ever seen the settlements behind the Anatolian Boulevard? They do not even have a single, small tree in their streets, not a piece of land that children can play. I cannot believe how these people live there. Less or more, at least we have spaces to breathe here.”* (80. Yıl Cumhuriyet Park, 70, male)

I observed that in Bostanlı Neighbourhood, most parks are clustered in certain areas, while some areas do not have any parks at all. Accordingly, while perceptions of older adults about the sufficiency of the amount of park acreage is positive for those who live near these clustered parks, the ones who live in areas without parks are more likely to have negative perceptions:

*“If I start walking here, I can reach to Şehitler Boulevard, Bostanlı Çarşısı or the seashore only by walking among the green spaces. It is a big advantage for people like us to walk who don’t drive anymore.”* (Uğur Mumcu Park, 77, male)

Each of these clustered parks have different park characteristics, for instance, if one of them provides a basketball court, the park adjacent to it provides a tennis court. So that, these parks complete each other and address the different needs and expectations of different user groups:

*“I like living here because when my grandson gets bored in a park, I can bring him one of the various parks nearby the next day.”* (Uğur Mumcu Park, 69, female)

### **6.2.1. Poor Walkability of the Streets as a Barrier to Park Use**

Among with the availability of sufficient amount of park acreage, walkability of the streets is another significant determinant of access to parks, and in this study, one of the strongest barriers to park use. As older adults are expected to get to neighbourhood

parks by walk, their uses of these parks are strongly affected by the walkability of the streets: in terms of the sidewalk quality and the protection from the traffic.

For more than half of the participants (33 out of 60), it takes **less than 5 minutes by walk** to get to the neighbourhood parks in Karşıyaka. The numbers of participants those who walk more than 10 minutes to get to the parks is three times higher in 80. Yıl Cumhuriyet Park. Responses indicate that this longer tendency to walk to this park of these participants is related to their perceptions about this park to being the largest and most attractive park in their neighbourhood, along with Girne Kültürpark. So, instead of using the closest parks that they perceive to be unattractive, these participants walk few more minutes to visit 80. Yıl Cumhuriyet Park instead:

*“When you want to take some fresh air and enjoy the outdoors, this park and Kültürpark are the only options in this area. These people living close to these parks are lucky, I have to walk 15 minutes to reach any of them. I consider my walk to these parks as an exercise so I do not complain, but of course if I had a park like this closer to my home, I would use it instead.”* (80. Yıl Cumhuriyet Park, 70, male)

Neighbourhood parks in this study have different **street characteristics** relative to each other. 80. Yıl Cumhuriyet Park is located at the edge of the intersection of two important arterials and surrounded with heavy traffic all the time. Uğur Mumcu Park is located in an inner area with very low levels of traffic. These differences in the streets affect the types of problems older adults encounter in their walkings to parks.

Majority of the participants (12 out of 60) appear to encounter problems while walking to the neighbourhood parks. Similar to the study of Türel et al. (2007), the most important problem affecting older adults' walking to neighbourhood parks in Karşıyaka is related to the poor sidewalk quality in both parks. Additionally, in 80. Yıl Cumhuriyet Park, participants complain about lack of protection from heavy traffic.



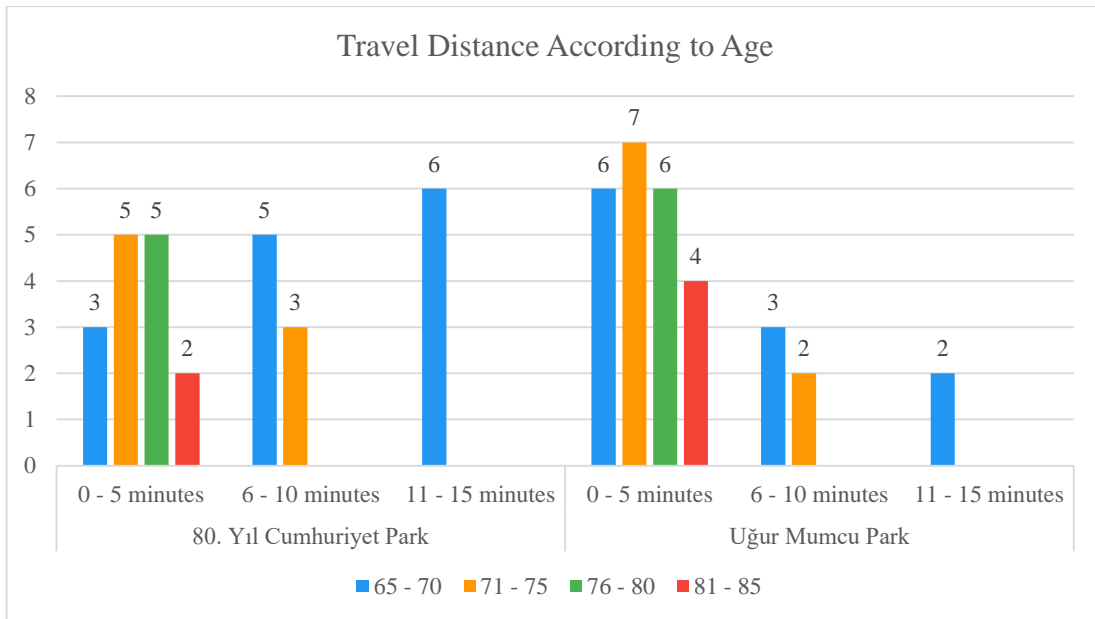


Figure 6.7. Travel distance of the participants according to age

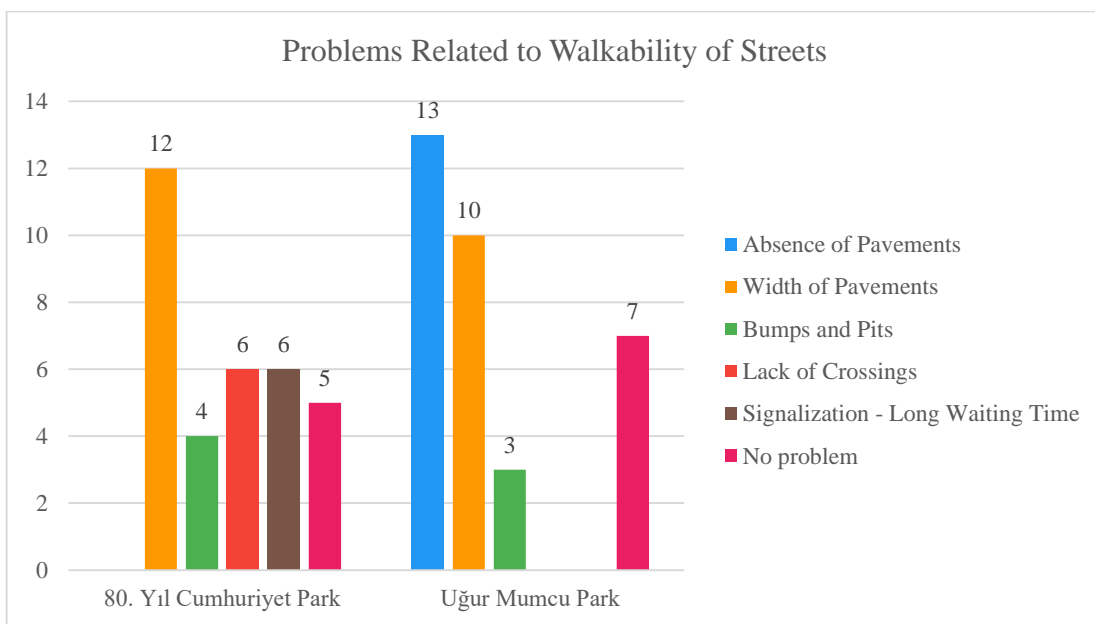


Figure 6.8. Participants' problems affecting their walking to the parks (multiple responses included)

**Sidewalk quality** as one of the strongest determinants of the walkability of the streets, affects the access of older adults to neighbourhood parks by walk in Karşıyaka negatively. According to universal design standards, sidewalks must be minimum 150 centimetres wide to allow comfortable and safe walking for all, and especially those with wheelchairs (Türel et al. 2007). However, I measured the width of sidewalks in 300 meters radius of neighbourhood parks of this study, and noticed that majority of these sidewalks are significantly less than 150 centimetres, even decrease to 30 centimetres at

some points. While sidewalks are already very narrow, participants report that they are also often obstructed by street trees, trash bins or cars. These participants complain about not being able to walk continuously using these sidewalks. As they often have to move down to streets to continue walking, they feel uncomfortable and unsafe:

*“No, you cannot call them sidewalks, they are something else. You have to walk on the street. Even the streets are too narrow, when two cars coming from different directions encounter at the middle of the street, and you are trying to walk, then good luck surviving.”* (80. Yıl Cumhuriyet Park, 65, female)



Figure 6.9. A sidewalk with insufficient width (50 centimeters) and obstructions in Bahçelievler Neighbourhood

Participants also complain about the bumps and pits at the streets and sidewalks. As older adults are more fragile to these kinds of physical constraints, these problems with the quality of the streets can put them in danger of falls and injuries:

*“The street in front of my home is like a war arena, it is full of bumps and pits, I consider myself lucky the times I manage to reach to the park by walk without falling and injuring myself.”* (80. Yıl Cumhuriyet Park, 76, female)

Uğur Mumcu Park, its adjacent buildings and streets were constructed in last 15 years, accordingly these streets are relatively wide, however, there is a problem of lack of sidewalks in this area. In my site observations, I thought that these streets may have been designed to be ‘shared streets’, indicating the streets that allow both car, bike and pedestrians’ movements, but pedestrians and bike users have the priority to use them. However, I could not find any traffic signs indicating these streets to be shared streets. Even though the traffic level surrounding this park is very low, older adults still report themselves to feel uncomfortable being have to walk at the middle of streets. As older adults are expected to encounter hearing difficulties, they worry about the risk of not noticing cars coming behind them:

*“It is weird that even though most of the streets are not narrow, they do not have sidewalks, or even if they have, they are often too narrow to walk. Luckily, there is almost no traffic so that we can walk on the streets, but it makes us uncomfortable, as we always feel uncomfortable like a car would come behind you and its driver would argue with you for not walking on the sidewalks those not exist.”* (Uğur Mumcu Park, 74, female)

In 80. Yıl Cumhuriyet Park, in addition to the problems related to the sidewalk quality, older adults are also disturbed due to the **heavy traffic** surrounding the park. When park users’ main walking routes to the park are examined, it is seen that the ones those who live in the buildings located at the west side of the park have to cross up to three traffic lights to get to the park. However, these older adults report that the traffic lights do not give adequate time for them to cross the streets, and they have to wait too long for the lights to turn green for the pedestrians. This can be an important problem triggering anxiety for older adults as they tell that they have to hurry while crossing the streets due to their fear of these lights turning red while they are still walking:

*“Even though I like this park very much, travelling to there is like a challenge. You have to wait for almost 3 minutes for the green light, then it gives you like 3 seconds to cross the entire boulevard, it is like a joke.”* (80. Yıl Cumhuriyet Park, 70, male)





Figure 6.10. A street adjacent to Uğur Mumcu Park without sidewalks

Additionally, the adjacent street at the south of the park (Figure 6.11.) is a main arterial, however, it does not provide **traffic lights or zebra crossings** that are oriented according to the main pedestrian movement to the park. According to participants, the only traffic light near the park at this street is oriented poorly to the southwest corner of the park, which appears to be designed to be main entrance of the park, however, most park users do not perceive this point as the main entrance of the park and want to enter the park from where the café exists. Accordingly, instead of walking to this traffic light and wait for it, older adults throw themselves to the street to cross. This can be another endangering factor for older adults as the traffic level here is heavy and there are lots of taxibusses that often ignore the traffic rules, stop and move suddenly without giving signal. Older adults also complain about these taxibusses creating a noise pollution as they often horn to attract some passengers and scare and disturb older adults:

*“It is almost 2020 and most of our transportation still depends on taxibusses. I respect those who follow the rules, but the majority of taxibus drivers are traffic jams, they see you trying to cross the street and pour on the speed not to allow you, and they disturb entire traffic just to take one passenger.” (80. Yıl Cumhuriyet Park, 83, male)*



Figure 6.11. Poor crossing quality and heavy traffic adjacent to 80. Yıl Cumhuriyet Park

According to Burton & Mitchell (2006), **‘attractiveness’ of the streets** can motivate or deter older adults to be outdoors. Street trees, architectural details, windows of the shops and stores, and seeing other people around at the streets walking or talking to each other are some of the attractiveness factors for the streets. Participants describe that while the streets leading to 80. Yıl Cumhuriyet Park are more likely to have these kinds of features: shops and stores, street trees and other people at the streets, some older adults using Uğur Mumcu Park complain about seeing nothing but buildings, cars and street trees at their walking routes to the park. Lack of these kinds of attractions along their way to neighbourhood parks can be a barrier to park use among older adults as a result of decreased motivation to walk to parks:

*“Walking on the streets of Bostanlı is somehow annoying, all you see is the typical beige coloured disturbing buildings. There is nobody on the streets, no children playing, no artisans in front of their shops, as there are no shops. There are not even sidewalks. There is a so-called urban transformation in this neighbourhood, but what is the point if you will not improve the infrastructure and the streets, and beautify the environment?”*  
(Uğur Mumcu Park, 65, male)





Figure 6.12. An ‘unattractive to walk’ street in Bostanlı Neighbourhood

### 6.3. Use of Neighbourhood Parks as an Opportunity to be in Nature

One of the significances of the neighbourhood parks in the built environment is related to the ecological benefits they provide via their natural features. As defined by Burgess et al. (1988) as ‘gateways to the natural world’, neighbourhood parks can be one of the limited opportunities to benefit from nature for the individuals living in a densely built settlement like Karşıyaka. The ways older adults use the neighbourhood parks in Karşıyaka demonstrate that they consider these parks as such ‘**escape points**’ when they are overwhelmed by the stressors of the built environment.

According to the descriptions of older adults, they perceive the neighbourhood parks Karşıyaka as the greenest spaces that they can reach to by walking. Similar to the study of Orsega-Smith et al. (2004), these older adults describe themselves to be ‘in a better mood’ when they use the parks. Accordingly, rich natural features of these parks contribute to their ‘**sense of attachment**’. When they interact with nature in the parks, older adults feel delighted by the trees and other vegetation. The colours, sound of the leaves or fresh smell of the soil are all addressing the senses of older adults and make them feel revived. Enjoying the nature in these parks contribute to the park use of older adults as well, as when they leave the parks in a better mood, they feel more motivated to visit them again. Older adults in Karşıyaka describe themselves to have decreased levels of tolerance to the stressors of the built environment as a result of aging, such as being

surrounded by buildings all the time, and increased tendency to be closer to the nature. This is why neighbourhood parks have a privileged value for them:

*“When you grow old, you notice that certain things that you never care about start to disturb you. For example, the building near mine is being repainted for a long time. It disturbs me to see all these construction staff and hear the noise of these machines all the time. So that, I escape to this park to clear my mind and enjoy the tranquillity of nature.”* (80. Yıl Cumhuriyet Park, 77, female)

*“I moved in to this neighbourhood 4 years ago. These trees we all smaller than. I witness them grow up. Now they are grown enough for my grandson to climb. When you grow old, you get feel more attached to the nature, I guess. I love every single tree in this park like my children.”* (Uğur Mumcu Park, 82, female)



Figure 6.13. Overall view of 80. Yıl Cumhuriyet Park  
(Source: “Mehmet C”, 2013)

According to older adults in 80. Yıl Cumhuriyet Park, the 4.000 m<sup>2</sup> woodland of 20 years old pine trees in this park gives it a **unique character** and stand it out among other neighbourhood parks. For instance, one of the participants living in an adjacent building to this park tells that she describes her home as: ‘the beige building near the mini-forest’ to the new people she meets:



*“This park has a particular value for me as it is not like the other neighbourhood parks those consist of a few small trees. It is like a mini-forest in our neighbourhood.”*  
(80. Yıl Cumhuriyet Park, 77, female)



Figure 6.14. Pine woodland in 80. Yıl Cumhuriyet Park

Parallel to the recommendation of Loukatiou-Sideris et al. (2014) for the **varied natural features** in age-friendly parks, older adults appreciate seeing flower bodies and bushes in both parks and a small ornamental pool in Uğur Mumcu Park. Apparently, these natural features provide aesthetic richness for older adults and increase their satisfaction in their uses of the parks by giving a clue about great maintenance of these parks:

*“Do not these flowers make you feel relieved as well? We used to have a problem with flowers and grasses growing pale in summer. Then, we contacted to the Municipality and they have begun to take a greater care of the vegetation in this park.”* (Uğur Mumcu Park, 73, male)

Another important contribution of natural features, especially mature trees in neighbourhood parks is to control the temperature and offer **protection from the sun**, and accordingly, contribute to the comfort of their users. Izmir as an Aegean City with Mediterranean climate, has very hot summers as the temperature can rise up to 45°C.

Considering the limited tolerance of older adults for exposing to sun directly for longer durations, it is significant for older adults that neighbourhood parks provide sufficient numbers of mature trees to create shadings and provide protection from sun. Similar to the study of Arnberger et al. (2017), older adults in Karşıyaka use neighbourhood parks in summer to cope with the heat periods.



Figure 6.15. Natural features of Uğur Mumcu Park

Apparently, older adults consider these parks to be cooler than their homes in summer. As both neighbourhoods are very densely built settlements and often mostly attached buildings of these settlements do not allow wind to go through the inner areas, it becomes a challenge to cool down their homes in heat periods for most individuals. During the interviews, older adults indicate that they do not want to use air-conditioners to cool their homes down due to their concerns for the increasing electricity bills and the risk of getting sick. Moreover, the great weather in summer makes them feel motivated to be outdoors. Accordingly, they increasingly use these parks in summer to cope with heat periods and enjoy the lively environment:

*“Even at the middle of the noon, you can still comfortably spend time in this park. These trees mostly block the sun and perceptibly decrease the temperature. It is a great opportunity for older people like us to be able to enjoy the vividness of summer in this park*



*instead of being stuck at home and waiting for sunset to be able to go outdoors.” (80. Yıl Cumhuriyet Park, 66, female)*

*“My home exposes to direct sunlight the whole day. I cannot tolerate too much heat, and you know how the summers are in Izmir. I cannot run the air conditioner because it is old and pollutes the air, also my husband gets mad if it increases the electricity bill. So that I come to this park survive in hot summer days. I feel like the temperature is a few degrees lower here.” (Uğur Mumcu Park, 77, female)*



Figure 6.16. Mature trees providing shading in 80. Yıl Cumhuriyet Park

Participants specifically mention about the neighbourhood parks reaching their **maximum use in summer evenings**. They describe that during long summer nights, they often cannot manage to evaluate their time at home due to their homes still being hot at the evenings, and other factors such as having nothing to watch on television. On the other hand, neighbourhood parks provide them great opportunities to spend these long summer evenings in a naturally-rich environment where the weather is cooler. They can socialize with their neighbours, eat ice-creams with their grandchildren, play card games and engage with many other ‘traditional summer night activities’ in these parks:

*“I used to own a summer house in Foça. Every summer night, me and my wife went to famous ice-cream shop, then sat on a bench and observed the people around, it*

*used to very pleasing. The recent summer was the first one that I do not have this house anymore. One night, we got extremely uncomfortable at home because there was nothing to watch on TV and it was so hot, so we throw ourselves to this park after the dinner, and unexpectedly loved it. The environment gave us similar vibes, children playing around, old men playing board games. I guess we made it a summer tradition to visit this park every evening.” (80. Yıl Cumhuriyet Park, 66, male)*

## **6.4. Park Facilities and Park Use Preferences**

Older adults often use neighbourhood parks for their daily routines, such as to read newspapers or to exercise. Loukatiou-Sideris et al. (2014) indicate that age-friendly parks should provide park facilities that gather older adults around certain focuses and promote social interactions, and also provide opportunities for low-impact activities. In this study, cafés in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park appear to be the park facilities that undertake this role of gathering older adults together and supporting their leisure and social activities. Also, exercise equipment in both parks, and walking loop in 80. Yıl Cumhuriyet Park are the park facilities that are highly utilized by older adults to engage with physical activities.

### **6.4.1. Cafés in Neighbourhood Parks as ‘Third Places’ for Older Adults**

During my interviews with older adults in the cafés of neighbourhood parks (31 out of 60), they express their satisfaction with the existence of these cafés in the parks. According to the perceptions of these older adults these cafés allow them to bring some of their **daily leisure activities** to neighbourhood parks, so that instead of engaging with these activities in their homes, they enjoy, for instance, solving the newspaper puzzles or knitting in a naturally-rich environment full of other people. One of the participants in Uğur Mumcu Park explains his satisfaction with reading newspapers every noon in this park café, instead of his home as: “being able to discuss the news momentary with other older people in the park”. Similar to the study of Aspinall et al. (2010) the existence of cafés in neighbourhood parks is one of the strongest motivations to park use for these older adults:



*“I know that parks are great, we need them, especially children need them. But honestly, I would not this park if there was not a tea house. I mean now I can sit here and solve puzzle, if the café was not there, which table would I put my newspaper? It would be different if I was younger and I had child at play-ages for example, so that I would visit this park to bring them at all. But for people like me who have no obligations, we need a reason to visit parks.” (80. Yıl Cumhuriyet Park, 70, male)*

Apparently, instead of spending great amount of their lives in their homes, older adults in Karşıyaka enjoy being outdoors and surrounded by other people, so that they do not feel lonely and satisfied with taking an active part in society:

*“My daughter often complains about being have to deal with lots of people at work and describes that he would like to be my place so that he could stay at home the whole day. But things change when you grow old, I guess. I love seeing other people around, otherwise, I feel lonely. I enjoy spending time at this park café because I am surrounded by other people here, I like listening to their conversations, watching their children playing. My daughter calls me as a ‘stalker’.” (Uğur Mumcu Park, 74, female)*



Figure 6.17. Café of Uğur Mumcu Park

The way older adults in Karşıyaka utilize the cafés of 80. Yıl Cumhuriyet Park and Uğur Mumcu Park preserves similarities with the concept of Oldenburg (1989) for ‘**third places**’: where people gather in a place that is as comfortable as their homes but they do not have the obligations of being a ‘host’. First of all, these cafés respond to the spontaneous decisions to be outdoors without necessarily having exact purposes. They just enjoy leaving their homes to take fresh air, enjoy the weather, have a cup of tea and observe the park environment without being have to worry about walking too much, the prices, their clothing:

*“When this café was constructed here, like 2 years ago I guess, I believed that it would not work, because Girne Boulevard already offered lots of fancy cafés, why would anyone wanted to sit here? But I was wrong, people loved it! Even we [wife and husband] started coming to this park almost every day for the first time since we moved in this neighbourhood. I believe that this park became a heaven for retired people like us, I mean look around, dozens of older people are hanging out with their neighbours here like it is garden of a family building in a small Anatolian city.” (80. Yıl Cumhuriyet Park, 75, male)*

For the participants of this study, cafés in the neighbourhood parks they use have an important role in their **socialization purposes**. Apparently, especially for those with larger network of friends, it can be a problem to dedicate a meeting place every time. Hanging out in private cafés can be perceived to be problematic for some older adults, because of the crowd, the prices, not being able to sit without ordering something. On the other hand, in these cafés in neighbourhood parks, people can sit without being have to order something and the prices are relatively lower. Accordingly, these older adults feel more comfortable in these cafés compared to the private cafés. For instance, one of the participants describes that she could not be able to spend time outdoors with his wife before the café in 80. Yıl Cumhuriyet Park begun to operate because his wife was very concerned about the **prices**:

*“I am a tea person. When I sit somewhere and if I am going to stay there long, I cannot leave without drinking at least 3 glasses of tea. Now imagine me going to a café*

*with my husband and ordering 3 glasses of tea each of them costing 5 Turkish Lira. He would bite my head off for hours, and ruin the whole day. Fortunately, we have this tea house so that I can spend my entire day here, enjoying ordering as many teas as I want, without being concerned about the prices.”* (80. Yıl Cumhuriyet Park, 68, female)

Another factor that older adults are very satisfied with these cafés is feeling as comfortable as their homes, because in these cafés, they can spend as much as time they want without being disturbed by the café personnel to order something. Especially for older adults those who visit parks in large group of friends, this are great advantages that support their **sense of comfort**:

*“We [group of friends] used to meet at cafés of Bostanlı almost every weekday. However, especially after the tramway started operating, all of the places became more and more crowded. We began to feel uncomfortable, because when we sit together and start talking, we do not stop for long hours. However, we often felt like customers who could not find a place to sit, were all keeping their eyes on waiting for us leave the place. I live here for 20 years, but this park is not that old of course, it should be like 12 – 13 years old, however, I never considered it as a meeting place, because I was afraid that my friends might consider it to be boring. But I finally managed to suggest meeting here. The first time they came here, they loved it! Now we meet at this park every weekday, and hang out as much as we want. Nobody nor nothing disturbs us here. The environment is peaceful. It is so nice to be surrounded with trees, hearing the laughter of children, seeing decent people around.”* (Uğur Mumcu Park, 68, female)

Another way that older adults’ perceptions about these cafés in neighbourhood parks show similarities to Oldenburg (1989) ‘s ‘third places’ concept is the opportunities for **spontaneously developed social interactions**. Even the older adults who does not even know each other can suddenly start having conversations about random topics in these cafés. For instance, during my interviews, I observed one older man was limping while walking, and an older man in another table called him: “Hey, you should see my doctor!”, then one of them took his tea and sit the other one’s table and they started to talk about their health conditions, and at the end, they exchanged their phone numbers.

One of the participants in 80. Yıl Cumhuriyet Park explains that when he gets bored in his home, he can spontaneously visit this park café, because he knows that he will more likely to see some of the people he can socialize with there:

*“When I leave my home and head to the park, I know that some of my friends will be there. We do not have to call each other every time to gather at the tea house. Among us, whoever has a free time just come there and wait for the others.”* (80. Yıl Cumhuriyet Park, 65, male)



Figure 6.18. Café of 80. Yıl Cumhuriyet Park

Cafés in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park Karşıyaka appear to provide contributions to the **neighbourliness relationships** of the neighbourhood parks they are located within. During my interviews, I encounter a birthday celebration in the café of 80. Yıl Cumhuriyet Park, as both cafés allow these kinds of informal events to take place, and noticed how these people celebrating the birthday and other people in the café started to socialize; older adults who does not even know the birthday child started clapping him while he was blowing the candles, than his parents called people sitting at near tables to come and take some of their treats. One of the participants in Uğur Mumcu

Park describes their use of the park café to organize their ‘Gold Days<sup>4</sup>’, which is one of the most common neighbourliness activities among older women in Turkey:

*“We [group of friends] host their Gold Day once a week in this park. By Gold Day, I do not mean the old-fashioned way. We just come together here, one of us brings dessert, one of us bring pastry, one of us deal with tea and coffee. It is way more comfortable than hosting it in our homes, we do not need to deal with all the stuff like cleaning, preparation, washing dishes, and of course the most important part, kicking our husbands out of home.”* (Uğur Mumcu Park, 74, female)

In contrary to the positive perceptions about the existence of cafés in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park, three participants stay against these cafés and have **negative perceptions** about them. According to these participants, neighbourhood parks are not supposed to provide **paid-services**. For their perceptions, there is no need to ‘sacrifice’ the lands of parks to construct cafés, as while there are dozens of private alternatives for people to eat or drink something, but very limited opportunities for those want to rest and enjoy the nature. Moreover, they express that even though the prices of these cafés are relatively cheaper, they still may not be affordable for some, and these people may feel ‘excluded’ in these neighbourhood parks with café. This perception can be considered in relation to the statement of Cohen (2014) for the existence of cafés in parks as a ‘gentrification’ issue. One of these participants with negative perceptions about park cafés in 80. Yıl Cumhuriyet Park specifically complains about the Municipality’s removal of some of the exercise equipment in the park to open up space for the café:

*“Why we even have a café in this park? I mean possibly every were else is full of cafés, shisha cafés. I guess even if I convert my apartment to a café then it will be full of customers. It was two years ago I guess that the Municipality removed some of the exercise equipment here and constructed this café that looks nothing like but a shanty there. A municipality is supposed to encourage its citizens to exercise, do sports, stay*

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<sup>4</sup> Gold Day is a traditional gathering activity of women in Turkey. Group of friends regularly come together at home of a different person from the group each time. Host prepare desserts, pastries, tea, and deal with preparation and cleaning. At the end of the day, guests gift the host a gold. In last years, a modern version of Gold Day became popular that women do not necessarily gather at home or exchange gold.

*healthy. Is not it like to remove exercise equipment and construct a café instead where people eat these unhealthy fries and sandwiches is the exact opposite of this?” (80. Yıl Cumhuriyet Park, 67, female)*

#### **6.4.2. Physically Activity Opportunities in Neighbourhood Parks**

World Health Organization (2010a) recognizes the increasing physical inactivity with increasing age as one of the most important mortality factors among older adults. Accordingly, older adults need to engage with low-impact physical activities to maintain and improve their physiological health. However, not all older adults can afford or enjoy going to places such as gyms to exercise. Here, neighbourhood parks can be important places where older adults can walk or exercise using the park facilities such as exercise equipment or walking trails. Apparently, older adults in Karşıyaka use neighbourhood parks with these park facilities to engage with low-impact physical activities. During my site observations, I noticed that the walking loop in 80. Yıl Cumhuriyet Park is one of the most utilized park facilities by older adults. Participants indicate that this **walking loop** encourage them to walk in a naturally-rich environment, and provides one of the limited opportunities for older adults to walk as a low-impact physical exercise:

*“If I am not mistaken, there are only two walking trails in this region, the one in this park and the one in Girne Kültürpark. This is a great opportunity for people like me those who cannot do heavy exercises, but at least wants to walk to stay healthy.” (80. Yıl Cumhuriyet Park, 72, male)*

*“Unless you take a bus and go to seashore, walking loop in this park is the only opportunity for low-tempo walking. I see that it really encourages older people like me to walk. Regardless of the time, you can always see older people walking here, some enjoys walking at the morning, some walks at the middle of noon to benefit from the sunlight, in summer, some older people walk at the night to get tired and sleep more comfortably.” (80. Yıl Cumhuriyet Park, 66, female)*





Figure 6.19. Walking loop in 80. Yıl Cumhuriyet Park

According to the descriptions of the participants, their biggest motivation to use walking loop is to enjoy the park environment while walking. Apparently, older adults in 80. Yıl Cumhuriyet Park perceive walking there as an opportunity to take advantage of being in touch with the nature, and feel motivated to walk when they see other people using the walking loop as well. However, these participants report some problems with the part that the walking loop is attached to the café. Accordingly, these participants tend to be uncomfortable due to noticing that some of the people sitting in the café staring at them, and also due to cigarette smokes of café users those who smoke:

*“The walking trail is here for almost 20 years and it was always pleasing to walk in this park. However, the Municipality recently constructed this café and it changed everything. Now, I cannot walk comfortably during the times café operates because I expose to the smoke of café users’ cigarettes. I mean, I walk here to maintain my health, not to be a passive smoker.”* (80. Yıl Cumhuriyet Park, 68, female)

Especially in 80. Yıl Cumhuriyet Park, exercise equipment are as highly utilized as the walking loop. I noticed that all of the participants those who walk also use these exercise equipment as well. The only problem that participants using exercise equipment in this park is related to the cobblestone flooring. These participants indicate that they would prefer to have a tartan flooring instead so that they could be less fearful about the

risk of injuring in case of a falling. However, during my observations, I noticed that less numbers of older adults use exercise equipment in Uğur Mumcu Park. When I talked to the participants those who exercise in this park, they complained about the insufficient numbers and types of exercise equipment:

*“I know lots of neighbourhood parks that are smaller than this have many more exercise equipment. Exercise movements you can do in this park are very limited, and especially for people like me those who exercise every day, these movements get boring at some point, this is why I started to exercise on the lawn area to be able to expand my exercise movements.”* (Uğur Mumcu Park, 70, female)



Figure 6.20. Exercise equipment in Uğur Mumcu Park

### **6.4.3. Uncomfortable Benches Affecting Length of Stay in Parks**

Neighbourhood parks are one of the most important public open spaces that enables intergenerational activities of older adults with their grandchildren. However, decreasing interest of children to play outdoors and insufficiency of the playgrounds of parks to attract children affect older adults those who want to use neighbourhood parks with their grandchildren. Older adults in the neighbourhood parks of Karşıyaka report



some affecting their intergenerational activities there and except for improvements to support their uses of these parks.

In both neighbourhood parks, participants complain about the **comfort of the benches** all across these parks, but especially the ones surrounding the playgrounds. These benches that are made of iron material that gets too cold in winter and too hot in summer, and lack of armrests, are not perceived by older adults to meet their anatomical needs. Especially older adults those who supervise their grandchildren to play in 80. Yıl Cumhuriyet park complain about insufficient numbers of benches that are oriented to the playground. Uncomfortable benches can be a problem affecting the park use duration of older adults as they cannot tolerate sitting in uncomfortable conditions for too long:

*“These benches may be perceived as comfortable by people like... The ones in prisons? They are like the worst possible design choices are willingly brought together to make people uncomfortable. I made two petitions to the Municipality to replace the benches in this park, they told me that they will take care of, but they did not.”* (80. Yıl Cumhuriyet Park, 72, male)



Figure 6.21. Uncomfortable benches with iron material and striped structure

Another problem that older adults those who supervise their grandchildren in the playgrounds is the **lack of shading** for the benches surrounding these playgrounds. These

older adults describe that they cannot engage with their leisure activities such as to read newspapers or knit while sitting at the benches surrounding the playgrounds:

*“I know it is important for children and older people like us to take vitamin D under the sun, but you know how hot Izmir can get in summer, sometimes children cannot even play at the playground sometimes because it warms too much. I wish there were some trees surrounding the playground area to make shadow so that we can sit more comfortably at these benches as well.”* (80. Yıl Cumhuriyet Park, 65, female)

During my interviews, older adults describe how much do they enjoy seeing their grandchildren playing outdoors. However, they complain about their grandchildren often getting bored playing in the parks, because their playgrounds cannot manage to attract these children. Older adults indicate that they expect these playgrounds to be renovated to be designed in a way that can attract their grandchildren, so that these older adults can spend more time in neighbourhood parks with their grandchildren:

*“I used to spend so much time with my oldest grandson in these times children did not have smartphones. Now I can barely see my youngest grandson’s face because he is too busy watching videos. I imagine bringing him to this park and watch him playing in joy. However, he suddenly starts shouting to go home. Maybe if this playground was more attractive, we would want to play more so that we could spend more time together in the park.”* (Uğur Mumcu Park, 67, female)

Older adults in the neighbourhood parks of Karşıyaka also complain about the material choices at the playground. They specifically report the rubber material ground of playgrounds to be unhealthy for their grandchildren for not allowing them to interact with the nature like the children in the playgrounds which still have sand floorings, and absorbing the sun and getting warm too much:

*“People used to complain about the sand flooring at playgrounds due to children getting into mess, so that all of the municipalities removed them and applied these rubber*

*floorings. This material may be soft, but it is unhealthy, you cannot imagine how warm it gets in summer and smells like burnt plastic. They look ugly as well, look at these colours, black and dark brown, what a great choice for children! I wish they bring back the sand flooring to all playgrounds.” (Uğur Mumcu Park, 72, female)*



Figure 6.22. Uncomfortable and inadequate benches in the playground of 80. Yıl Cumhuriyet Park

## **6.5. Users with ‘Unwanted Behaviours’ Affecting Park Perceptions**

Social characteristics of neighbourhood parks strongly affect the perceptions of older adults about their comfort and safety. Older adults expect neighbourhood parks to be well-maintained as they perceive problems such as pollution as ‘signs of vandalism’ and may feel fearful in these parks (Hung & Crompton, 2006). Maintenance and security of parks are achieved via both formal (parks’ cleaning and security staff) and informal control (park users’ behaviours) mechanisms (Hansen, 2006). The participants in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park indicate that some ‘nuisance’ problems occur due to some user groups with unwanted behaviours: those who pollute the park, smoke, or stare at exercising and walking park users.

Participants describe that especially in summer, both parks become so crowded that the cleaning staff cannot catch up to keep the parks clean. Apparently, while there are sufficient numbers of trash bins, some park users still throw their garbage away and

especially those who use cafés left their tables full of garbage. Participants specifically complain about tables and the ground of cafés being full of cigarette butts and sunflower seeds in summer due to the increased numbers of park users. According to the responses, most older adults believe that this problem with pollution in the parks is less likely to be related to a lack of formal maintenance, instead, due to ignorant behaviour of some park users:

*“Of course, nobody expects you to take your dish, go to the kitchen and wash it. But at least you can do the bare minimum to help the personnel keep the café clean. Sometimes the place become too crowded that the personnel cannot deal with all of the tables. Would you get tired if you collect your dishes and put it on a tray so that personnel can collect it for once? Even if you hire 10 more personnel, this café would still remain messy unless you educate these people to behave properly.”* (80. Yıl Cumhuriyet Park, 72, male)

*“As there are so many tables here people think that nobody would notice them if they throw their garbage away. I recently warned two men who throw their cigarette butt away even though there was an ashtray on his table. He told me that the floor was already dirty and its problem of the café’s cleaning personnel. This is like a joke. However, I will continue warning these people as they only understand of this kind of language.”* (80. Yıl Cumhuriyet Park, 67, male)

Another pollution problem appears to occur in the restrooms of the parks. When I talked to the manager of the café in 80. Yıl Cumhuriyet Park, he told me that they used the restroom used to be remain open for all of the park users, but in time, they observed that some park users left the restroom polluted all the time, moreover, some park users stole toilet papers and soaps many times. Accordingly, they decided to keep the restroom locked all the time and only allow the users of the café to use the restroom by borrowing the key from the café personnel. Restroom in Uğur Mumcu Park operates the same way as well. Some of the participants complain about restrooms being locked all time. They describe that as these parks are public spaces, restrooms should be accessible for all. On the other hand, this precaution of keeping toilets locked seem not to solve the pollution problem:

*“I cannot understand how people manage to pollute restrooms that much, and even block the toilets. I am sure, or at least I hope they do not leave their toilets in their homes like this. These people throw toilet papers to everywhere except for the trash bin. How can you solve such problem? Can you put cameras in toilets? Maybe it should be paid, so that less people would use it.”* (80. Yıl Cumhuriyet Park, 76, male)

*“I can understand that they want less people to use the restroom so they would have less cleaning job, but this is a public space and I should not be a customer of the café to be able to use the restroom. I feel uncomfortable for asking for the key to use the restroom all the time. If people leave the restroom polluted, this is a big shame for them, but keeping a public restroom locked cannot be a solution.”* (Uğur Mumcu Park, 72, female)

In both parks, a conflict occurs between older adults and smoking park users. Participants describe that one of the biggest reasons they use these parks is to enjoy the nature and take fresh air, and exposing to the cigarette smoke appear to be an important barrier for their purposes. According to these participants, people those who smoke can smoke wherever they want expect for parks as they are few of the limited opportunities where people can take fresh air. Some of the participants describe that even though they smoke as well, they try to avoid smoking as much as possible in the parks and in case they smoke, they choose the tables in café or benches that are not surrounded by other people. Especially for the park users those who exercise or bring their grandchildren to play, this conflict with smoking park users appear to be an important problem affecting their park use experiences:

*“I cannot believe how these people bringing their children to the playground smoke in front of all these children. I mean I am a smoker as well so that I do not judge them for smoking, but I have the self-control not to smoke at least near the playground. Even when I sit at the café, when I want to smoke, I stand up, move away from other people and smoke without disturbing other people. This is all about respect.”* (80. Yıl Cumhuriyet Park, 72, male)



Participants complain about various other ‘unwanted behaviours’ of other park users. I observed that as these older adults are frequent users of the parks, they develop a strong sense of attachment to these parks and these kinds of problems that disturb them more accordingly. These participants express that as parks are constructed and managed by the taxes of all citizens, park users should be more careful about taking advantage of them properly:

*“Municipality puts this drinking water fountain so that when people using this park get thirsty, they can use it. However, some people consider it as an unlimited free drinking water source. Do not they understand that it is the same water that flows through their kitchens’ sinks? Once I saw I woman trying to full a 5 lt bottle.”* (Uğur Mumcu Park, 82, female)

The participants those who use exercise equipment and walking loop in 80. Yıl Cumhuriyet Park complain about park users not following the rules and try to use these facilities for different inappropriate purposes. During the site observations, I noticed two children getting bored at the playground trying to play with exercise equipment. I also observed some people walking in the wrong direction on the walking loop or walking too slow with talking to their phones and disturb those users who want to walk with higher tempos. These kinds of inappropriate uses of some park facilities appear to lead nuisance problems for older adults as well:

*“Like there are not enough people exercising, children often come here and act like these are toys. I cannot believe how their parents allow their children coming here and disturbing other people. Of course they are children and they want to play, but they can injure themselves.”* (80. Yıl Cumhuriyet Park, 68, female)

Another nuisance problem that the participants using the walking loop in 80. Yıl report is about the part that the walking loop gets attached to the café. These participants complain about being uncomfortable due to feeling like and also in some cases, noticing some of the park users in café staring at them while they walk. Apparently, older adults want to focus on their walking and enjoy the park environment, however, while they are

walking on the part that the walking loop attached to the café, the atmosphere they enjoy disappears to the crowds at the café:

*“I often use the walking trail in the morning and it is okay. But sometimes I need to shift my walking routine to afternoon, and it is not that pleasing. I feel uncomfortable because every time, I notice some men at the café staring at me. Once, I was sitting at the tea house and I heard 3 men pointing out and making fun of an old woman using the walking trail, they drove me mad.”* (80. Yıl Cumhuriyet Park, 66, female)

Even though none of the participants in both parks report problems about fear of crime, those older adults in 80. Yıl Cumhuriyet Park are more likely to be using the park ‘cautiously’ during the night and the times there are less people around. Apparently, this park used to encounter serious problems about safety until 2017, as the woodland area of the park used to attract people those who ingest thinner or use marijuana at night. Then park users and park’s manager reported this safety problem to the officials, then the Governorship of Karşıyaka attended 4 security guards to watch the park and keep those people away. As a result of their efforts, these people gave up on trying to use this park for these kinds of unwanted purposes. During the interviews, I noticed that this previous bad reputation of the park still affects the perceptions of older adults about safety:

*“I do not think I would visit this park at night. It is not because something bad may happen, there are security guards everywhere at night and the park is illuminated well, but you know, you can never be fully safe as an old woman.”* (80. Yıl Cumhuriyet Park, 66, female)

The final nuisance problem that the participants report is about the park users those who walk their dogs. Similar to the studies of Willemsse (2010) and Aspinall et al. (2010), these participants complain about some people not taking care after the fouls of their dogs and walking their dogs without leashes. While participants describe that they are not completely against of having dogs in the boundaries of the parks, as they express that there are lots of stray dogs in these parks and they are completely fine with it. These stray dogs are fed by the people living nearby and also drinking water taps are provided

by the Municipality in the parks. Apparently, the participants feel comfortable with the existence of stray dogs in these parks as they know that these stray dogs are fed well and controlled by the Municipality. However, some of the dogs with owners are reportedly behaving aggressive and barking all the time and make other park users uncomfortable. Participants specifically complain about the fact that even though there are signs in these parks for the dog walkers indicating not to remove the leashes of their dogs, some dog owners ignore these rules and let off them:

*“These people believe that they are the most civilized ones. But they do not even condescend to collect their dogs’ fouls. Are they willingly doing this? There is some kind of dog park in two steps. Why do not these people use it?” (Uğur Mumcu Park, 82, female)*

*“Once, I was sitting at the tea house. Then I saw a teenager with some of these dangerous dogs. He removed dog’s leash so that it can play. Suddenly the dog started running to the playground. All of the parents ran and took their children. However, dog reached to a child and tried to grab his arm. It seemed like it wanted to play, it’s owner told the same as well, but child scared so much, so do her mother.” (Uğur Mumcu Park, 70, female)*

Unlike the study of Aspinall (2010), older adults in the neighbourhood parks of Karşıyaka appear to enjoy the existence of teenagers in the parks. Participants describe themselves to feel alive and energetic when they see some teenagers around spending time with their friends. As there are lots of older adults in these parks those who have grandchildren in their youth ages, they prefer to see teenagers in green spaces socializing or doing sports, instead of being stuck at their homes in front of computers or spending time in places such as shisha cafés:

*“More teenagers should be spending time in parks. I feel very happy for those teenagers who spend time in parks with their friends to play basketball or other games, this is very very important for their physiological health and also social development. I would not care if they make noise, they are teenagers, they have energy and the same right with all of us to use the parks. Besides, it would be better than seeing old people*



*talking about politics or making gossip all the time.*” (80. Yıl Cumhuriyet Park, 75, female)

*“Encouraging our teenagers to use places such as parks to do sports is the only way for us to keep them away from bad habits. Too bad that teenagers do not spend time in parks as they are tired of hearing these old people telling them to be quiet or behave well all the time.”* (Uğur Mumcu Park, 70, female)

## **6.6. Summary**

In this chapter, spatial experiences and perceptions of older adults in two relatively age-friendly neighbourhood parks in Karşıyaka, Izmir: 80. Yıl Cumhuriyet Park and Uğur Mumcu Park are evaluated according to interviews with 60 park users at 65 years old and above.

According to the interviews, the most important factors that motivate older adults to use neighbourhood parks in Karşıyaka are the opportunity to enjoy the nature in these parks and being able to meet their needs for socialization. For these purposes, existence of dense and varied vegetation in these parks that contribute to these parks’ naturalness, and existence of park cafés are the most significant physical characteristics of the parks. Considering the strong sense of community of older adults in Karşıyaka, they appear to perceive these parks as places that are similar to the concept of Oldenburg (1989) for the ‘third places’, where they can feel as comfortable as their home, while taking advantage of being outside. Older adults take their newspapers or books and read them in the cafés of the parks so that they can enjoy the park environment: the great weather and activities of other park users as well.

Use of neighbourhood parks appear to provide older adults an opportunity to be outside their homes, socialize with other people they encounter in their way to the parks and also with other people at their age in these parks. In addition to these spontaneously developed social encounters, greater proportion of older adults use neighbourhood parks in Karşıyaka to gather with their friends, or bring their grandchildren to play.

As well as using neighbourhood parks for daily leisure activities and socialization purposes, older adults in Karşıyaka appear to be use these parks to maintain and improve

their physiological health by walking or exercising. The exercise equipment in both parks and the walking loop in 80. Yıl Cumhuriyet Park are highly utilized by older adults.

Besides the mostly positive perceptions of older adults about the characteristics of neighbourhood parks in Karşıyaka, participants report two common problems affecting their uses of these parks. The first problem is related to the poor walkability of the streets surrounding the parks due to insufficient width of pavements and lack of protection from the traffic. Considering that older adults often have mobility problems due to decreased physiological strength and hearing difficulties, these problems with the street quality is an important problem affecting older adults' access to parks and putting them in danger of incidents while they are walking.

Another common problem in both parks is related to the 'unwanted behaviours' of some user groups. These park users, for instance, those who pollute the parks or do not follow the rules for using exercise equipment or walk their dogs without leashes create a conflict between themselves and older adults those who are disturbed by their behaviour.

## CHAPTER 7

### CONCLUSION & RECOMMENDATIONS

This study aimed to evaluate the physical and social factors about neighbourhood parks and their park surroundings affecting the uses of these parks by older adults. After its review of the urban design literature to identify these factors by analysing the studies involving older adults and their uses of parks, this study evaluates its findings about the factors affecting the park use of older adults in the case study of Karşıyaka (Izmir), based on site observations and user interviews with 60 park users at 65 years old and above in two relatively ‘age-friendly’ neighbourhood parks to evaluate how do these socio-spatial factors of parks affect the spatial experiences and perceptions of these older adults in their uses of neighbourhood parks. The results of this study indicate that use of neighbourhood parks among older adults is seriously affected by the physical constraints of the built environment: poor walkability of streets in the near environments of the parks; existence of great number of and diverse natural features and different types of park facilities that provide opportunities for their tendency to engage with their daily leisure, physical and social activities outdoors; and the perceived pleasantness of social encounters with the other users of these parks. The findings of these study are evaluated under three topics:

The findings of this study indicate that the most significant factor related to the physical and social characteristics of the neighbourhood environments over the use of neighbourhood parks by older adults in Karşıyaka is the very strong sense of attachment of older adults living in Karşıyaka to their community. This very strong attachment of its residents to their community is commonly related to the socio-cultural dynamics of the settlement, where ‘neighbourliness’ is perceived to be very important by especially older adults. Having strong social ties with their neighbours appears to be a great motivation for older adults to use neighbourhood parks. Parallel to the study of Bedimo-Rung et al. (2005) indicating the importance of neighbourhood parks for improving the social ties between neighbours, older adults in Karşıyaka often use neighbourhood parks to have opportunities for spontaneously developed social interactions with other people at their way to these parks and other park users. During their walks, older adults enjoy having ‘pleasant’ social encounters with other people at the streets, for instance, older adults at

ground floors watching the streets from their balconies or owners of the local shops and stores waiting in front of their workplaces.

In terms of physical characteristics of the neighbourhood environment, land-use characteristics surrounding parks appear to shape the perceptions of older adults about their sense of comfort and safety. Descriptions of Parra et al. (2010) for mixed land-uses nearby their homes providing a reason for older adults to be outdoors, seems to be valid for older adults those who use 80. Yıl Cumhuriyet Park. Accordingly, having shops and stores along their walking routes and adjacent to parks motivates older adults to go for walks and often to neighbourhood parks. Existence of certain kinds of shops and stores, particularly grocery stores and pharmacies give older adults a chance to combine their daily shopping routines and park uses. It is a common type of park use for older adults those live close to 80. Yıl Cumhuriyet Park to complete their shopping and stop by this park to have a cup of coffee and rest, and pretty much fits with the recommendations of the World Health Organization (2007) for ‘different land-uses working together’ in age-friendly built environments.

The interview results of the study indicate that access to neighbourhood parks in Karşıyaka is problematic for older adults due to two main problems: insufficient amount of park acreage in the neighbourhoods and poor walkability of the streets. First, while, parallel to the recommendations of The European Commission (2000), most participants (40 out of 60) in this study have access to neighbourhood parks in less than 300 meters walking distance to their homes, the amounts of park acreage that are available for their use is insufficient. Apparently, older adults consider limited park size as a problem because of limited park facilities and lack of other park users, and instead of using these ‘closest but small parks’, they tend to walk more (up to 800 meters) to use relatively more attractive parks. Similar to the study of Türel et al. (2007) that takes place in Bornova (Izmir), one of the biggest physical constraints to park use of older adults in Karşıyaka appear to be related to the poor walkability of the streets as well. Considering their limited mobility, older adults expect to get to parks by walk convenient and safe. However, most sidewalks in Karşıyaka are already too narrow (decrease to 30 centimetres at some points, while the barrier-free design standards recommends minimum 150 centimetres), and obstructed by street trees or trash bins, older adults cannot walk continuously to neighbourhood parks using sidewalks. As they often have to walk at the middle of the streets, they feel fearful due to the risk of not noticing cars coming behind them.

Additionally, lack of protection from traffic surrounding 80. Yıl Cumhuriyet Park, due to lack of zebra crossings and too long waiting times at the traffic lights lead to fatigue in older adults while they are walking to the park and in some cases, discourage them from visiting the park when they do not feel to have the energy to physically and mentally deal with the heavy traffic.

Responses of the study participants indicate that the main motivation of older adults to use neighbourhood parks in Karşıyaka is to engage with some of their leisure, physical and social activities in outdoor environments where they can enjoy the nature and be surrounded by other people. Using neighbourhood parks to compensate some of their daily routines, such as to read newspapers or gather with the friends provide some health benefits for older adults. Similar to the study of Orsega-Smith et al. (2004) older adults those who spend time in neighbourhood parks in Karşıyaka report themselves to be in a better mood after their visits. The biggest factor about the physical characteristics of neighbourhood parks here is the great numbers of and diverse natural features that are provided by these parks. Apparently, in a densely built settlement like Karşıyaka, some of the stressors of the built environment, for instance, feeling overwhelmed due to being surrounded by buildings all the time or exposing to the visual and noise pollution of the heavy traffic, make older adults tend to ‘escape’ to nature and revive themselves. Here, neighbourhood parks as one of the limited opportunities for older adults to be in touch with nature has a particular importance for the wellness of older adults.

Another important role of natural features in 80. Yıl Cumhuriyet Park and Uğur Mumcu Park is to provide protection from the sun and reduce the temperature. Izmir as an Aegean city with Mediterranean climate, have very hot summers that the temperature can rise up to 45<sup>0</sup>C during heat periods. Similar to the study of Arnberger (2017), older adults consider the use of neighbourhood parks as an opportunity to cope with the heats and enjoy the vivid environments of neighbourhood parks. Accordingly, mature trees in neighbourhood parks make older adults perceive parks to be cooler than their homes in heat periods. Especially during the summer evenings, 80. Yıl Cumhuriyet Park and Uğur Mumcu Park reach to their maximum numbers of users. Older adults those who cannot find anything in their homes to spend time in long summer evenings use neighbourhood to socialize with other people, talk about old days or play card games.

Existence of great numbers of and varied park facilities in neighbourhood parks of Karşıyaka that support different types of activities of older adults appear to be a great

motivation for them to park use. Similar to the findings of Aspinall et al. (2010), in both of 80. Yıl Cumhuriyet Park and Uğur Mumcu Park, existence of café seems to be the most valued park facility by older adults. The way older adults perceive and utilize these park cafés preserves similarities with the concept of ‘third places’ of Oldenburg (1989). Apparently, older adults feel as comfortable as their homes in these cafés, at the same time, enjoy being outdoors. These park cafés provide more flexible use opportunities for older adults compared to private cafés, they allow people to sit without being have to order anything, their prices are relatively affordable and neighbours can organize some informal events in there. Older adults use these cafés to bring some of their ‘private’ activities to ‘public’ in neighbourhood parks, for instance, organizing birthday parties for their grandchildren or older women organizing traditional Gold Days with their friends.

While the common purpose of use of neighbourhood parks by older adults in Karşıyaka is to engage with leisure and social activities, great numbers of participants in this study (18 out of 60) are using parks to exercise or walk. Parallel to the findings of Chow et al. (2016) and Pleason et al. (2014) existence of park facilities that support low-impact physical activities: exercise equipment and walking trails, motive older adults to be physically active in neighbourhood parks of Karşıyaka.

Following these positive factors about the physical and social characteristics of neighbourhood parks that motivate older adults to park use, older adults perceive some problems about these parks affecting their uses negatively. According to the results of interviews, the most significant problem that older adults encounter during their uses of neighbourhood parks in Karşıyaka is related to some nuisance problems that are mostly caused by certain unapproved behaviours of other park users. Similar to the findings of Türel et al. (2007), older adults complain about the pollution in neighbourhood parks of Karşıyaka. While the common reason of this pollution in these parks is not necessarily due to lack of formal maintenance, instead, it is due to ignorant behaviours of other park users those who throw their garbage away, especially, similar to the study of Sugiyama et al. (2009), park users those who do not take care after their dogs. Pollution in parks is an important problem for older adults as they often perceive, specifically broken bottles or broken park facilities as ‘signs of vandalism’ and feel fearful in neighbourhood parks. Older adults in both 80. Yıl Cumhuriyet Park and Uğur Mumcu Park complain about restrooms being locked all the time and only be accessible by borrowing keys from the café personnel because otherwise, some park users pollute and damage these restrooms.

Another problem that older adults face in neighbourhood parks of Karşıyaka is related to the uncomfortable benches. These typical benches that are used in most parks of Karşıyaka, with stripped design and iron material are not suitable for the anatomy of older adults and because of feeling uncomfortable, older adults cannot sit on benches for longer durations. Similar to the study of Chen et al. (2016), older adults also consider the numbers of benches, especially surrounding playgrounds to be insufficient.

While as mentioned before, older adults sitting in cafés of neighbourhood parks are satisfied from the protection from the sun, the ones those who sit near playgrounds to supervise their grandchildren complain about the lack of shading, especially in 80. Yıl Cumhuriyet Park. These older adults cannot engage with their leisure activities such as to knit while watching for their grandchildren because exposing directly to the sun makes them uncomfortable. This result indicates that in a hot region like Izmir, protection from the sun can be an important motivation to park use among older adults, and a barrier to park use in case of its insufficiency.

After evaluating the strongest motivations and constraints to park use of older adults in Karşıyaka according to user interviews, this study makes recommendations for potential urban design interventions based on the urban design examples of age-friendly parks to improve age-friendliness of these parks.

While the biggest constraint of older adults' access to neighbourhood parks by walk in Karşıyaka is related to the insufficient pavement width, most streets in Karşıyaka are already too narrow and it is not possible for these streets to widen the sidewalks and allow the car traffic at the same time. As a solution here, according to the traffic flow, some of these streets connecting to the parks can be converted to be one-way streets and to be shared-streets. In these shared streets, cars are allowed but pedestrians and bike users have the primary right to use the streets. By this intervention, it would be forbidden for cars to horn to pedestrians to make them hurry, and older adults can walk more comfortably and safer to parks.

For the problem of long waiting times at the traffic lights in 80. Yıl Cumhuriyet Park, a similar application for the one in Singapore (see page 43) that allow older adults to tap their identity cards to gain more time to cross the streets can be considered for older adults those who are at 65 years old and above with '65 Yaş Kart' (the transportation card of older adults to allow them using the public transportation free of charge), to use their transportation cards to gain more time.



Finally, for the lack of protection from traffic in the adjacent roads of 80. Yıl Cumhuriyet Park, ‘traffic calming’ can be considered for especially slowing down the taxibus (dolmuş) drivers, and there must be a visible zebra crossing orienting where the café is located as most older adults enter the park from here.

To overcome with the nuisance problem of park users not taking care after the fouls of their dogs, small areas with fences can be dedicated in these parks (as examples of this already exist in some parks of Karşıyaka) for the dog owners. For the nuisance problem of non-smoking users about exposing to cigarette smoke, non-smoking signs must be provided especially in the areas of playground and exercise equipment and the walking trail in 80. Yıl Cumhuriyet Park, as according to ‘Law 4207’, it is forbidden to smoke in open spaces with these functions, however, it is less likely to be controlled and accordingly, most people are unaware of this ban.

To increase the physical comfort of older adults using neighbourhood parks of Karşıyaka, typical benches in stripped form with iron material (see page 122) must be replaced with new benches made of heat-resistant, natural materials. Especially around playground areas, here should be moveable seating units with lightweight materials so that older adults can customize their seating positions according to their focuses or the position of sun. Additionally, to increase the physical comfort and safety of older adults using exercise equipment in neighbourhood parks, these equipment can be replaced with geriatric equipment with protection from falls (as explained in Chapter 4).

Considering strong neighbourliness relationships of older adults in Karşıyaka, formal public events can be organized in neighbourhood parks, such as the local food market in Preussenpark (see page 56), as especially the land under pine trees in 80. Yıl Cumhuriyet Park is very suitable for these kinds of uses. While these kinds of events are organized in Karşıyaka in Bostanlı Recreation Area, evaluating neighbourhood parks for public events as well can be beneficial for older adults to support their aging in place.

For the final recommendation, as the existence of great numbers of and diverse natural features in the neighbourhood parks of Karşıyaka is one of the more important motivations of older adults to park use, gardening opportunities can be provided in these parks as the one in Carbide Park (see page 57) as an activity that can be considered to be at the intersection of leisure, physical and social activities of older adults.

As one of the limited researches about age-friendly parks in Turkey, this study aimed to evaluate the effects of the socio-spatial factors about neighbourhood parks on

the uses of these parks by older adults. In its case study in two relatively 'age-friendly' neighbourhood parks in Karşıyaka, this study finds that older adults in Karşıyaka have a great tendency to use neighbourhood parks. While there are certain factors about these parks, such as their natural features or the pleasant social interactions occurring there, motivating older adults to use neighbourhood parks in Karşıyaka; they encounter certain constraints in their uses of these parks, such as the poor walkability of the streets. To eliminate these problems, increase motivation factors for the park users and encourage more older adults to use neighbourhood parks of Karşıyaka and accordingly, the findings and recommendations of this study can be beneficial for improving the age-friendliness of neighbourhood parks in Karşıyaka.

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## APPENDIX A

### ATTRIBUTES OF NEIGHBORHOOD PARKS IN KARŞIYAKA

Table A.1. Attributes of 148 neighbourhood parks in Karşıyaka  
(Source: Municipality of Karşıyaka, 2016)

Park Name	Neighbourhood Name	Park Facilities	Park Size
Atatürk Park	Aksoy	Playground	1.445 m <sup>2</sup>
Gokhan Nil Park	Aksoy	Playground, basketball field	890 m <sup>2</sup>
Güngör Dilmen Park	Aksoy	Playground, exercise equipments	1.035 m <sup>2</sup>
Samin Kocagöz Park	Aksoy	Playground, exercise equipments	1.335 m <sup>2</sup>
İnsan Hakları Park	Aksoy	Playground, ornamental pool	11.000 m <sup>2</sup>
Tahir Bor Park	Alaybey	Playground	3.600 m <sup>2</sup>
Mehmet Ali Kasalı Park	Atakent	-	755 m <sup>2</sup>
Ali Fuat İçsel	Atakent	Playground	900 m <sup>2</sup>
Şehit Ahmet Öner Park	Atakent	Playground, basketball field	2.620 m <sup>2</sup>
İzzettin Çalışlar Park	Atakent	Playground, exercise equipments, basketball field	3.420 m <sup>2</sup>
Lale Park	Atakent	Playground, football field,	2.200 m <sup>2</sup>
Bahar	Bahariye	Playground, exercise equipments	980 m <sup>2</sup>
Zübeyde Hanım Park	Bahariye	Playground, exercise equipments, ornamental pool, cafe	7.300 m <sup>2</sup>
1851/8 Park	Bahçelievler	Exercise equipments	935 m <sup>2</sup>
Ahmet Bozkurt Park	Bahçelievler	Exercise equipments	1.240 m <sup>2</sup>
1851/16 Park	Bahçelievler	Playground	750 m <sup>2</sup>
Avni Anıl Park	Bahçelievler	Playground	750 m <sup>2</sup>
Bersan Doğanekin	Bahçelievler	Playground	2.070 m <sup>2</sup>
Ercan Gül Park	Bahçelievler	Playground	1.190 m <sup>2</sup>
Gonca Park	Bahçelievler	Playground	820 m <sup>2</sup>

(cont. on next page)

**Table A.1. (cont.)**

Gül Park	Bahçelievler	Playground	1.100 m <sup>2</sup>
Şht. Polis Zübeyir Durgay	Bahçelievler	Playground	550 m <sup>2</sup>
Kaya Bekat Park	Bahçelievler	Playground, basketball field	1.080 m <sup>2</sup>
Bnb. Zekal Kavur Park Park	Bahçelievler	Playground, exercise equipments	1.620 m <sup>2</sup>
80. Yıl Cumhuriyet Park	Bahçelievler	Playground, exercise equipments, walking trail, cafe	10.000 m <sup>2</sup>
Nimet Oğuz Park	Bahriye Üçok	Playground	390 m <sup>2</sup>
6345 Sokak Park	Bostanlı	-	570 m <sup>2</sup>
Mehmet Senal Ertekin Park	Bostanlı	-	1.500 m <sup>2</sup>
Remzi İyigün Park	Bostanlı	-	750 m <sup>2</sup>
Şht. Kur. Bnb. Recep Güngör Park	Bostanlı	-	7.610 m <sup>2</sup>
Ufuk Sarıca Park	Bostanlı	-	2.410 m <sup>2</sup>
Adnan Saygun Park	Bostanlı	Ornamental pool	3.000 m <sup>2</sup>
Balıkçı Park	Bostanlı	Ornamental pool	2.000 m <sup>2</sup>
1814 Sokak Park	Bostanlı	Playground	3.000 m <sup>2</sup>
Ali Hikmet Ayerdem Park	Bostanlı	Playground	7.055 m <sup>2</sup>
Cengiz Topel Park	Bostanlı	Playground	5.110 m <sup>2</sup>
İbrahim Koç Park	Bostanlı	Playground	500 m <sup>2</sup>
Öztürk Park	Bostanlı	Playground	885 m <sup>2</sup>
Sadi Hoşses Park	Bostanlı	Playground	3.650 m <sup>2</sup>
6347 Sokak Park	Bostanlı	Playground, basketball field	1.730 m <sup>2</sup>
Bağcı Park	Bostanlı	Playground, basketball field	3.200 m <sup>2</sup>
Mehmet Karadayı Park	Bostanlı	Playground, basketball field	1.735 m <sup>2</sup>
İlhami Yılmaz Park	Bostanlı	Playground, exercise equipments	3.300 m <sup>2</sup>
Dinçer Sezgin Park	Bostanlı	Playground, exercise equipments, basketball field	2.500 m <sup>2</sup>
Uğur Mumcu Park	Bostanlı	Playground, exercise equipments, tennis court, ornamental pool, cafe, grocery	8.330 m <sup>2</sup>

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**Table A.1. (cont.)**

6712/4 Park	Cumhuriyet	Exercise equipments	2.385 m <sup>2</sup>
6712/4 Sokak Park	Cumhuriyet	Playground	1.500 m <sup>2</sup>
Akasya Park	Cumhuriyet	Playground	600 m <sup>2</sup>
Şht. Ayhan Çınar Park	Cumhuriyet	Playground	1.250 m <sup>2</sup>
6708/1 Park	Cumhuriyet	Playground, basketball field, football field	2.310 m <sup>2</sup>
6710 Park	Cumhuriyet	Playground, exercise equipments	2.500 m <sup>2</sup>
Sevgi Park	Cumhuriyet	Playground, exercise equipments	2.500 m <sup>2</sup>
Şantiye Durağı Park	Cumhuriyet	Playground, exercise equipments	5.000 m <sup>2</sup>
Hüseyin Tokatlı Park	Cumhuriyet	Playground, exercise equipments, basketball field	4.000 m <sup>2</sup>
Erol Baş Park	Dedebaşı	Exercise equipments, basketball field	1.200 m <sup>2</sup>
6111 Sokak Park	Dedebaşı	Exercise equipments, walking trail	1.840 m <sup>2</sup>
6100 Sokak Park	Dedebaşı	Playground	1.050 m <sup>2</sup>
6108 Sokak Park	Dedebaşı	Playground	450 m <sup>2</sup>
Barış Ersunar Park	Dedebaşı	Playground	1.355 m <sup>2</sup>
Gençlik Park	Dedebaşı	Playground	1.450 m <sup>2</sup>
Şht. Polis Sabahattin Taşkiran Park	Dedebaşı	Playground	1.505 m <sup>2</sup>
Turan Arınç Park	Dedebaşı	Playground, basketball field	750 m <sup>2</sup>
Doğankan Güngör Park	Demirköprü	Exercise equipments	3.660 m <sup>2</sup>
Adem Aydoğan	Demirköprü	Playground	1.500 m <sup>2</sup>
Karanfil Park	Demirköprü	Playground	1.025 m <sup>2</sup>
Yasemin Park	Demirköprü	Playground	740 m <sup>2</sup>
Yücel İzmirli Park	Demirköprü	Playground	1.055 m <sup>2</sup>
Demirali Durgut Park	Demirköprü	Playground, exercise equipments, ornamental pool, women's solidarity center	3.240 m <sup>2</sup>
Osman Bey	Donanmacı	Playground	1.760 m <sup>2</sup>
Zafer Alatay Park	Donanmacı	Playground	750 m <sup>2</sup>
6182 Sokak Park	Fikri Altay	Basketball field	2.500 m <sup>2</sup>
Mandalin	Fikri Altay	Playground	980 m <sup>2</sup>

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**Table A.1. (cont.)**

Fikri Altay Park	Fikri Altay	Playground, exercise equipments, football field	2.630 m <sup>2</sup>
6005/1 Sokak Park	Goncalar	Playground	500 m <sup>2</sup>
6007/13 Sokak Park	Goncalar	Playground	1.120 m <sup>2</sup>
6039 Sokak Park	Goncalar	Playground	375 m <sup>2</sup>
Nejdet Issı Park	Goncalar	Playground	4.470 m <sup>2</sup>
Pelin Park	Goncalar	Playground	945 m <sup>2</sup>
Yakup Boğa Park	Goncalar	Playground, exercise equipments	2.500 m <sup>2</sup>
6076 Park	İmbatlı	Playground	505 m <sup>2</sup>
İmbatlı Park Park	İmbatlı	Playground, exercise equipments	900 m <sup>2</sup>
Tevfik Sakıpağa Park	İmbatlı	Playground, exercise equipments	1.705 m <sup>2</sup>
6070 Park	İmbatlı	Playground, exercise equipments, ornamental pool	600 m <sup>2</sup>
K.K.T.C. Girne Park	İmbatlı	Playground, exercise equipments, ornamental pool	5.970 m <sup>2</sup>
Soyak Park	İnönü	Playground	3.600 m <sup>2</sup>
Yamaç Park	İnönü	Playground, exercise equipments	1.200 m <sup>2</sup>
Doğa Park	İnönü	Playground, football field	5.450 m <sup>2</sup>
Meyve Bahçesi Park	Latife Hanım	Exercise equipments, walking trail	5.755 m <sup>2</sup>
Engelliler Park	Mavişehir	Playground	1.600 m <sup>2</sup>
Özer Kırca Park	Mavişehir	Playground, exercise equipments, basketball field	3.540 m <sup>2</sup>
6794/5 Park	Mustafa Kemal	Exercise equipments	1.745 m <sup>2</sup>
6753/19 Park	Mustafa Kemal	Playground, basketball field	2.525 m <sup>2</sup>
6755 Park	Mustafa Kemal	Playground, exercise equipments	3.205 m <sup>2</sup>
Mehmet Işıkal Park	Mustafa Kemal	Playground, exercise equipments	2.650 m <sup>2</sup>
Şht. Hv. Plt. Ütğm. Türker Aydın Park	Mustafa Kemal	Playground, exercise equipments, basketball field	5.025 m <sup>2</sup>

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**Table A.1. (cont.)**

Barış Şehitleri Genç Fidanlar Park	Mustafa Kemal	Playground, exercise equipments, volleyball court, basketball court, café	8.490 m <sup>2</sup>
Nergis Park	Nergis	Playground, exercise equipments, cafe	3.500 m <sup>2</sup>
7536/2 Park	Örnekköy	Basketball	960 m <sup>2</sup>
7445 Park	Örnekköy	Exercise equipments	865 m <sup>2</sup>
7532 Park	Örnekköy	Exercise equipments	2.450 m <sup>2</sup>
7549 Park	Örnekköy	Exercise equipments	442 m <sup>2</sup>
Oktay Karakulak Park Park	Örnekköy	Exercise equipments	4.355 m <sup>2</sup>
Güler Utka Park	Örnekköy	Playground	2.800 m <sup>2</sup>
Örnekköy Son Durak Karşısı Park	Örnekköy	Playground	7.635 m <sup>2</sup>
İzci Park	Örnekköy	Playground, basketball field	6.825 m <sup>2</sup>
Turgut Özakman Park	Örnekköy	Playground, exercise equipments	13.500 m <sup>2</sup>
6300 Sokak Park	Şemikler	Basketball field, football field	1.680 m <sup>2</sup>
6194 Park	Şemikler	Exercise equipments	400 m <sup>2</sup>
6276/1 Sokak Park	Şemikler	Exercise equipments	1.950 m <sup>2</sup>
6221/9 Sokak Park	Şemikler	Playground	905 m <sup>2</sup>
6244 Sokak Park	Şemikler	Playground	515 m <sup>2</sup>
6265 Park	Şemikler	Playground	275 m <sup>2</sup>
6287 Sokak Park	Şemikler	Playground, basketball field	875 m <sup>2</sup>
6316/5 Sokak Park	Şemikler	Playground, exercise equipments	3.430 m <sup>2</sup>
Menekşe Park	Şemikler	Playground, exercise equipments, basketball field	1.180 m <sup>2</sup>
Doktor Sadık Ahmet Park	Şemikler	Playground, exercise equipments, walking trail	2.120 m <sup>2</sup>
Mimoza Park	Şemikler	Playground, exercise equipments, walking trail	2.465 m <sup>2</sup>
Zümrüt Park	Şemikler	Playground, exercise equipments, walking trail, basketball court, football field	5.400 m <sup>2</sup>

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**Table A.1. (cont.)**

Sadrettin İşçimenler Park	Tersane	Playground	1.175 m <sup>2</sup>
Barış Selçuk Park	Tersane	Playground, exercise equipments	1.090 m <sup>2</sup>
Uğur Demirkan Park	Yalı	Basketball field	1.450 m <sup>2</sup>
Bekir Coşkun Pako Park	Yalı	Basketball field, tennis court	4.720 m <sup>2</sup>
Kardeşlik Park	Yalı	Exercise equipments	4.990 m <sup>2</sup>
Şht Adem Gürdağ Park	Yalı	Exercise equipments	1.300 m <sup>2</sup>
Tansaş Park	Yalı	Exercise equipments, basketball field	7.190 m <sup>2</sup>
6501/1 Sokak	Yalı	Exercise equipments, walking trail	700 m <sup>2</sup>
6476/4 Sokak Park	Yalı	Playground	1.170 m <sup>2</sup>
Avukat Kasım Sönmez Park	Yalı	Playground	1.600 m <sup>2</sup>
Duru Park	Yalı	Playground	2.300 m <sup>2</sup>
Ekrem Bülgün Park	Yalı	Playground	2.360 m <sup>2</sup>
Haydar Aliyev Park	Yalı	Playground	3.310 m <sup>2</sup>
Sedat Kahraman Park	Yalı	Playground	1.425 m <sup>2</sup>
Tufan Aksoy Park	Yalı	Playground	3.080 m <sup>2</sup>
Fahrünnisa Kadıbeşegil Park	Yalı	Playground, basketball field	1.365 m <sup>2</sup>
Şht. Polis Samet Kırçalı Park	Yalı	Playground, basketball field	2.355 m <sup>2</sup>
Tahir Türetken Park	Yalı	Playground, basketball field, football field	6.890 m <sup>2</sup>
Manolya Park	Yalı	Playground, exercise equipments	2.510 m <sup>2</sup>
Tuncel Kurtiz Park	Yalı	Playground, exercise equipments	2.615 m <sup>2</sup>
İlyas Müşkül Park	Yalı	Playground, exercise equipments, basketball field	4.000 m <sup>2</sup>
7449/1 Park	Zübeyde Hanım	Playground	1.925 m <sup>2</sup>
Gürkan Ertaç Park	Zübeyde Hanım	Playground	2.700 m <sup>2</sup>
Martı Park	Zübeyde Hanım	Playground	1.400 m <sup>2</sup>
Özgür Soylu Park	Zübeyde Hanım	Playground, basketball field	3.510 m <sup>2</sup>
Tülay Aktaş Park	Zübeyde Hanım	Playground, basketball field	6.190 m <sup>2</sup>

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**Table A.1. (cont.)**

Gamze Akbař Park	Zübeyde Hanım	Playground, exercise equipments	1.710 m <sup>2</sup>
Tahsin Vergin Park	Zübeyde Hanım	Playground, exercise equipments, basketball court	8.545 m <sup>2</sup>
Temizocak Park	Zübeyde Hanım	Playground, exercise equipments, basketball court	3.390 m <sup>2</sup>
řht. Nuri Yesugay Park	Zübeyde Hanım	Playground, exercise equipments, walking trail, basketball court	10.150 m <sup>2</sup>