THE EFFECT OF ACCESSIBILITY OF THE NEIGHBORHOOD FACILITIES ON THE ACTIVE AGING OF OLDER WOMEN: A COMPARATIVE STUDY FROM ANKARA

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ABSTRACT

THE EFFECT OF ACCESSIBILITY OF THE NEIGHBORHOOD FACILITIES ON THE ACTIVE AGING OF OLDER WOMEN: A COMPARATIVE STUDY FROM ANKARA

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Aging begins with the birth of a child and ends with the death of an individual. After the maturation process is completed, the physical capacities of humans begin to decrease. Accordingly, aging refers to a process in which life functions decrease. As health systems develop, peoples' expectancy to live longer increase. In particular, women live longer than men. At the same time, the population of the elderly is increasing in the world. Regardless of the development level of a country, old age is now becoming an essential issue that the whole world has to deal with. For this reason, it becomes very important for people to be healthy and active as they age. Being healthy and active is even more important for older women since they are more likely to experience barriers (like financial issues or spatial inequalities) that may hinder their outdoor physical activity on the one hand, and to be motivated to engage with the public realm on the other (e.g., because of their domestic shopping and grandchild monitoring responsibilities). The built environment is highly effect on mobility, independence and quality of life. It either makes it easier or more difficult for older person to lead a healthy life. Therefore, the physical characteristics

of the neighborhood affect the accessibility of older persons, and accordingly, the levels of active aging may change. For this reason, this thesis aims to find the role of accessibility in the active aging of older women who use the physical environment in neighborhoods, specifically the opportunities and places offered by the neighborhood. Two neighborhoods of the Çankaya district in Ankara were selected. These are the İşçi Blokları Neighborhood and the Çukurambar Neighborhood. The physical environment of these two neighborhoods was analyzed and photographed. In addition, a total 24 women aged 65 and older in both neighborhoods were in-depth interviewed. The participants were asked questions about the barriers they encounter when accessing to public open spaces, whether these barriers are related to their health/aging, and whether they find the open spaces in their neighborhoods sufficient in their active aging. Results show that there are different problems in accessibility in both neighborhoods. In addition, participants' desire to age in their neighborhoods was similar for both neighborhoods. This result was found by unpaired t-test. This means that different accessibility problems in both neighborhoods affect active aging of women at the same level.

Keywords: Active aging, Accessibility, Older Women, Neighborhood, Public Spaces

ÖZ

MAHALLENİN SUNDUĞU İMKANLARIN ERİŞİLEBİLİRLİĞİNİN YAŞLI KADINLARIN AKTİF YAŞLANMASINA ETKİSİ: ANKARA'DAN KARŞILAŞTIRMALI BİR ARAŞTIRMA

Uysal, Ebru
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Yaşlanma insanların doğumuyla başlayıp ölümüyle sonuçlanır. Bireylerin olgunlaşma süreci tamamlandıktan sonra fizyolojik kapasitelerinin azaldığı ve buna bağlı olarak da yaşam fonksiyonlarının aksadığı bir süreci ifade eder. Günümüzde sağlık sistemleri geliştikçe insanların yaşam süresi artmaktadır. Özellikle kadınlar erkeklere göre daha uzun yaşamaktadır. Bununla beraber gelişmişlik seviyesinden bağımsız olarak dünyanın pek çok ülkesinde yaşlı nüfusu giderek artış göstermektedir. Bir ülkenin gelişmişlik düzeyi ne olursa olsun, yaşlılık artık tüm dünyanın uğraşması gereken temel bir sorun haline gelmektedir. Bu nedenle insanların yaşlandıkça sağlıklı ve aktif olmaları oldukça önemli hale gelmektedir. Sağlıklı ve aktif olmak, yaşlı kadınlar için daha da önemlidir, çünkü bir yandan açık havadaki fiziksel aktivitelerini engelleyebilecek sorunlar ile (örneğin finansal sorunlar, mekansal eşitsizlikler vs.) karşılaşma olasılıkları erkeklere göre daha yüksektir. Ancak diğer yandan ise kamusal alanla ilişki kurmak için motive olma olasılıkları da daha yüksektir (örneğin, pazara gitme, torun bakma sorumluluğu vs). Yapılı çevre hareketlilik, bağımsızlık ve yaşam kalitesi üzerinde oldukça etkilidir.

Bireylerin sağlıklı bir yaşam sürdürmesini ya kolaylaştırır ya da zorlaştırır. Yani mahallenin fiziksel özellikleri yaşlıların erişilebilirliğini etkilemekte ve buna bağlı olarak aktif yaşlanma düzeyleri değişebilmektedir. Bu sebepten bu tez, mahallelerdeki fiziksel ortamı, daha spesifik olarak mahallenin sunduğu imkanları ve yerleri kullanan yaşlı kadınların aktif yaşlanmalarında erişilebilirliğin rolüne bakmayı amaçlamaktadır. Ankara'da Çankaya ilçesine bağlı iki mahalle seçildi. Bunlar İşçi Blokları Mahallesi ve Çukurambar Mahallesi'dir. Bu iki mahallenin fiziksel ortamı analiz edilmiş ve fotoğraflanmıştır. Ayrıca her iki mahallede de 65 yaş ve üzeri toplam 24 kadınla derinlemesine görüşme yapılmıştır. Katılımcılara kamusal açık alanlara erişimde karşılaştıkları engeller, bu engellerin sağlıkları/yaşlanmaları ile ilgili olup olmadığı ve aktif yaşlanmalarında mahallelerindeki açık alanları yeterli bulup bulmadıkları sorulmuştur. Sonuçlar gösteriyor ki her iki mahallede de erişilebilirlikte farklı sorunlar mevcuttur. Buna ek olarak, katılımcıların kendi mahallelerinde yaşlanma istekleri her iki mahalle için benzer çıkmıştır. Bu sonuç unpaired t-test ile bulunmuştur. Bu demek oluyor ki her iki mahallede de farklı erişilebilirlik sorunları kadınların aktif yaşlanmalarını aynı düzeyde etkilemektedir.

Anahtar Kelimeler: Aktif yaşlanma, Erişilebilirlik, Yaşlı Kadınlar, Mahalle, Kamusal Alanlar

To my beloved family

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TABLE OF CONTENTS

ABSTRACT v

ÖZ vii

ACKNOWLEDGMENTS x

TABLE OF CONTENTS xi

LIST OF TABLES xiv

LIST OF FIGURES xv

LIST OF ABBREVIATIONS xviii

CHAPTERS

1 INTRODUCTION 1

1.1 Problem Definition 1

1.2 Aim of the Study and Research Questions 4

1.3 Gaps in Literature 5

1.4 Configuration of the Thesis 6

2 LITERATURE REVIEW 7

2.1 The Demographic Revolution 7

2.2 Problems Brought by Demographic Changes 10

2.2.1 Aging and the Planning of the Built Environment 11

2.3 Active Ageing: A Framework for Age-friendly Cities 17

2.3.1 A Set of Principles Guided by the Active Aging Policy Framework 20

2.3.2 Determinants of Active Ageing 21

2.3.3 Age-Friendly Cities and Communities (AFCC) 26

2.3.4 Neighborhood-based Desing Factors of Active Ageing 28
2.4 The Evolution of State Strategies and Policies Aimed at Addressing Active Ageing Issues in the World 30
2.4.1 Studies, Strategies and Policies in Developed Countries 31
2.4.2 Studies, Strategies and Policies Related to Turkey 50
2.5 Concluding Remarks 58
3 METHOD 61
3.1 Research Design 61
3.2 The Context of the Study 62
3.2.1 Selection of the Neighborhoods 64
3.3 Selection of the Participants 74
3.4 Data Collection 76
3.5 Data Analysis 79
4 RESULT 81
4.1 General Characteristics of the Survey Participants 81
4.1.1 Health Problems and Time Spent Outside 82
4.2 The Role of the Accessibility of Neighborhood Facilities in Promoting the Active Aging of Older Women 84
4.2.1. Use of Places Outside the Homes in the Neighborhood: Place Types, Need of an Assistance to Commute and Walking Attitudes 84
4.2.2. Urban Areas that are Rarely Visited in Their Neighborhoods and The Participants Expectations Regarding the Accessibility of Neighborhood Facilities 93
4.3 Opportunities and Barriers to the Accessibility of Neighborhood Facilities 95

4.3.1 Conditions of the Physical Environment 95

4.3.2 The Dangers Posed by the Physical Environments on the Older Women's Health 113

4.3.3 Levels of Willing to Age in The Neighborhood 114

5 CONCLUSION 119

5.1 A Brief Summary of the Study 119

5.2 A Discussion of the Findings With Regard to the Existing Literature 121

5.3 Limitation of the Study 128

5.4 Implications of the Study for Planning and Future Research 129

REFERENCES 131

APPENDICES

A. Investigation of the Effect of Accessibility of Neighborhood Facilities on Active Aging 147

LIST OF TABLES

TABLES

Table 2.1: Instrument Used for Each of The WHO's Active Ageing Model Determinant 39
Table 2.2: Definition of Variables 40
Table 2.3: Key Dimensions Contributing to Being an Age-Friendly City 41
Table 4.1: Educational Status 81
Table 4.2: Employment status 82
Table 4.3: Health situation 82
Table 4.4: Time spent in areas outside of their homes in the neighborhood (in hours) 83
Table 4.5: The places participants use in Çukurambar neighborhood, whether someone accompanies them to access to these places and the mode of transport they use to commute 88
Table 4.6: The places participants use in İşçi Blokları neighborhood, whether someone accompanies them to access to these places and the mode of transport they use to commute 90
Table 4.7: The general proportions of the answers given by the participants 95
Table 4.8: Table of criteria for whether or not they want to age 114
Table 4.9: Desire for aging in the neighborhoods of older women 115
Table 5.1: The relationship between accessibility in built environment and the reasons for willing to age in their neighborhoods 126

LIST OF FIGURES

FIGURES

Figure 2.1: Population Aged 65 and Over by Size Threshold (2 Million): 2008 – 2040 (Source: U.S. Census Bureau, International Data Base, on June, 2014.) 9
Figure 2.2: Investment in and Return on Investment in Ageing Populations (Source: World Economic Forum's Global Agenda Council on Ageing, 2013)..... 14
Figure 2.3: Determinants of Active Ageing (Source: WHO) 23
Figure 2.4: Active Ageing Index (Source: WHO) 34
Figure 2.5: Weights assigned to individual indicators and domains (Source: WHO) 35
Figure 2.6: Gender differences in the experience of active aging, in 28 EU members States based on 2014 overall AAI and its four domains (Source: Walker A. & Zaidi A., 2019) 37
Figure 2.7: Percentage distribution of population in selected age groups (Source: United Nation 2017a) 52
Figure 2.8: 2014 AAI EU Average and Turkey Comparison (Source: UNECE, 2016). 56
Figure 2.9:The Socio-ecological Conceptual Situation of This Study (produced by author) 59
Figure 3.1. Map of Turkey (Source: https://ontheworldmap.com/turkey/city/ankara/ankara-location-on-the-turkey-map.html) 62
Figure 3.2: Yücel-Uybadin Plan (Source: Ankara Metropolitan Municipality, 2023 Capital Ankara Master Plan Report) 63
Figure 3.3: 1990 Ankara Master Plan (Source: Ankara Metropolitan Municipality, 2023 Capital Ankara Master Plan Report) 64
Figure 3.4: Locations of neighborhoods on the map prepared by Uğurlar and Eceral 66
Figure 3.5: Noise level of Çukurambar neighborhood 67

Figure 3.6: Noise level of İşçi Blokları neighborhood 67
Figure 3.7: Green areas in two neighborhood 68
Figure 3.8: 1425. Street, Çukurambar Neighborhood 70
Figure 3.9: Slopes in Çukurambar neighborhood 71
Figure 3.10: Center of İşçi Blokları Neighborhood 73
Figure 3.11: Situations at the intersection of both neighborhoods 74
Figure 4.1: Areas used by the participants in Çukurambar as a percentage 85
Figure 4.2: Selection of Urban Facilities in Çukurambar 85
Figure 4.3: Areas used by the participants İn İşçi blokları as a percentage 86
Figure 4.4: Selection of Urban Facilities in İşçi Blokları 87
Figure 4.5: Transportation preference in both neighborhoods 92
Figure 4.6: Sufficiency of Street Lightings 97
Figure 4.7: İşçi Blokları Neighborhood, 1523. Street 98
Figure 4.8: İşçi Blokları Neighborhood, 1471. Street 98
Figure 4.9: Environmental Cleanliness 99
Figure 4.10: Environmental pollution in İşçi Blokları Neighborhood 99
Figure 4.11: Accessibility of bus stops 100
Figure 4.12: Adequacy of accessible green spaces and recreational areas 101
Figure 4.13: Green fields near the apartments 101
Figure 4.14: Adequacy of benches 102
Figure 4.15: The pollution of the bench in Uğur Mumcu park 103
Figure 4.16: Existence of walkable street 104
Figure 4.17: Some problems on the street in İşçi Blokları Neighborhood 105
Figure 4.18: Sufficiency of walking paths 106
Figure 4.19: 100. Yıl Park 106
Figure 4.20: Safety of walking paths 107
Figure 4.21: Width and height of the sidewalks 108
Figure 4.22: Sidewalk in Çukurambar Neighborhood, 1466. Street 108
Figure 4.23: Some sidewalk problems in İşçi Blokları Neighborhood 109
Figure 4.24: İşçi Blokları Neighborhood, Hasan Celal Güzel Street 110

Figure 4.25: Çukurambar Neighborhood, 1431. Street..... 110
Figure 4.26: Accessible Pedestrian Crossing..... 111
Figure 4.27: Existence of Urban Areas for Activities..... 112
Figure 4.28: Çansera (Uğur Mumcu) Park 113
Figure 4.29: Percentage of desire to age in both neighborhoods..... 116

LIST OF ABBREVIATIONS

ABBREVIATIONS

AAI	Active Aging Index
AFCC	Age-friendly Cities and Communities
METU	Middle East Technical University
TUIK	Türkiye İstatistik Kurumu (TURKSTAT)
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

In this chapter, first, the problem is mentioned and the aim of the study and the main question is passed. Then, gaps in the literature are mentioned. Finally, the structure of the article is discussed.

1.1 Problem Definition

According to the Report of the Special Committee on Aging (2018), the world population has been aging rapidly because of prolonged life expectancy and decreased fertility and mortality. In parallel with this, rapidly transforming urban areas are starting to create an unsafe environment for the elderly in the city. Since cities are not planned in accordance with elderly, areas where they spend time are limited to their home and immediate surroundings. There is a great deal of literature investigating the negative outcomes of aging. Studies found that older persons are more prone to problems of social isolation, depression and decreased physical activity (WHO, 2002). Psychological disorder is more common as a result of the decrease in social and economic resources and loss of family and friends with aging. For this reason, the existence of well-arranged public spaces for the elderly who have a tendency towards social isolation during the aging process will be an important factor in bringing the elderly living alone in the city into social life in society (Öztürk & Turan, 2017). In response to these problems and the aging population in the world, there has been a growing interest in concepts like active aging, healthy aging, successful aging and sustainable aging. Following the 2002 World Assembly on Ageing, the World Health Organization (WHO) brought the definition of active aging to the agenda. The concept is defined as the process of optimizing health, participation and safety opportunities to strengthen an older person's quality of life. It is stated that the rights, needs, interests

and capacities of older persons should serve as the foundation for the policies and services associated with older persons' health, participation and safety.

According to WHO (2002), the active aging is about the participation of the elderly in economic, social, physical and cultural activities in their daily lives. The state of active aging is determined by the economic, social, environmental, individual, behavioral and societal conditions. Regardless of age, more and more people want a higher standard of living. As the population of cities increases with the expectation of a high standard of living, economic, social and environmental welfare is gradually decreasing. In cities, these factors are among the factors that affect the life of the elderly. The most important thing that these factors affect is accessibility.

The expansion of living spaces in cities, and the increase in population and economic mobility make the need for individuals to accessibility more important. Urban transport is important for a livable society and sustainable aging in place. Both urban transportation and pedestrian road connection in neighborhood are necessary to ensure the social life arrangements and the ergonomic design of the city that includes the others (elderly, disabled, child, pregnant) (Kalınkara & Arpacı, 2015).

The design of the built environment and the physical inactivity of people are interrelated. One of the primary risk factors for health is physical inactivity. According to statistics, it causes one million fatalities annually, approximately 10% of all deaths (Lee et al., 2012). Environmental factors that make people's daily life more sedentary are the primary causes of physical inactivity. For example, an increase in the distance traveled due to actions such as going to work, shopping, and participating in leisure activities appears as an obstacle to cycling and walking (Racioppi et al., 2005). On the other hand, physical activities are preferred in neighborhoods where land uses mix, an effective street connection, and more green and open spaces for recreation (Atkinson et al., 2005). Additionally, individuals' willingness to use their living space for physical activity is influenced by the neighborhood's attractiveness, particularly in terms of aesthetic qualities and perceived safety and security (Loukaitou-Sideris, 2006 & Humpel et al., 2002). However, the Covid-19 pandemic has made physical inactivity more prevalent. Numerous physical activities have been abandoned due to

the epidemic. It has become difficult for everyone to engage in basic activities like walking in a neighborhood park (Ding et al., 2016).

The aging individual encounters several problems such as changes in family structure, loneliness, loss of status, social adaptation problems, age discrimination, intergenerational conflict and social exclusion (Uyanık & Başyiğit, 2018). Physical (muscle loss, etc.) and financial losses and changing habits that occur with aging reduce the individual's use of public spaces and cause them to participate less in society (Öztürk & Turan, 2017). These limit the social lives of the elderly (Uyanık & Başyiğit, 2018). Several studies have shown that women are more disadvantaged than men (see Title 2.2.1.1). If it is necessary to give an example of one of these studies, according to a study done by Naah, Njong, and Kimengsi (2020), it was seen that gender had a positive relationship with active aging, and it was found that active aging scores of men were higher than women. Studies show that women are more likely to experience barriers (like financial issues or spatial inequalities) that may hinder their outdoor physical activity (see, e.g., United Nation, 2010; WHO, 2000). On the other hand, existing evidence implies that older women are more likely to be motivated to engage with the public realm, for example, because of their domestic shopping and grandchild monitoring responsibilities (Thomson & Minkler, 2001). Additionally, just two years after Covid-19 began, the epidemic has widened the gender welfare gap, according to the World Economic Forum. This shows that women will continue to age more negatively than males until structural adjustments are made (Global Gender Gap Report, 2021).

There are both national and local studies on the concept of aging. Different inputs were used in each of these studies (see Chapter 2). For example, the general purpose of the Active Aging Index, which was created as a result of the work of the United Nations Economic Commission for Europe, is to identify areas where the potential of older persons can be supported through different policies and programs. In this way, which country is behind in which subjects and which aspects will develop accordingly is understandable. Nevertheless, although there are studies based on provinces and districts worldwide, there are still not enough studies on the elderly, especially older women, and outdoor accessibility based on neighborhoods. In other words, increasing

the diversity of land use, increasing the street connections of different facilities such as shopping, health centers and parks, and eliminating problems such as lighting, security and wayfinding related to accessibility have been developed as suggestions for creating more age-friendly environments. However, empirical studies have yet to be conducted on whether all these solutions promote the active aging process.

1.2 Aim of the Study and Research Questions

This thesis aims to address the gaps in knowledge and research by focusing on the outdoor accessibility problem of the elderly population in the neighborhoods of Turkey. In this context, the thesis asks the following main research question:

> *What is the role of neighborhood planning and design, more specifically the accessibility of neighborhood facilities, in encouraging older women to an active aging process*?"

Related to this question, the author questioned about the opportunities and barriers to older women's accessibility to land uses and open spaces in the neighborhoods they live in. Sub- research questions were asked about: wayfining opportunities/issues in the neighborhood, pedestrian safety and comfort, and the sufficiency of facilities like recreation areas in the neighborhood.

By answering these questions, it is aimed to make contributions to research and urban planning practice. In short, the role of accessibility in the active aging of older women who use areas that are outside of their homes in the neighborhood will be examined. The built environment affects the accessibility of older women, and accordingly, the levels of active aging may change. For this reason, how the built environment should be suitable for older women and how it will enable them to age more actively will be discussed in this study.

1.3 Gaps in Literature

Both women and men face age discrimination as they age. In addition, women experience aging and its effects differently than men. Inequalities and gender-based discrimination which are caused by gendered stereotypes ingrained in cultural and social conventions are exacerbated at increased age (United Nation, 2010). The co-occurrence of age discrimination and gender discrimination has an aggravating effect on discrimination and inequality. Sexist maners do not go away with age. Instead, it combines with related assumptions such as vulnerability and dependence on others (Mahler, 2021). In addition, overall women rate their well-being and physical health lower than men do, a gap that increases for older people (Steinmayr et al., 2020).

According to the active aging index of European countries made with 2014 data, it was found that the active aging index score averages of women were lower than that of men (Çuhadar, 2019). In addition to all these, according to Erbil's (2022) research, older men age more actively than older women.

Considering the gender differences in social roles and opportunities, a gender approach is required to implement active aging policies, which are considered strategies for population aging (WHO, 2002; Centro Internacional de Longevidade (ILC) Brasil, 2015). The lack of studies on the effect of accessibility on active aging in women is also seen today.

As a result, there are research deficiencies in terms of neighborhood and gender in terms of accessibility affecting active aging. Studies on active aging are insufficient in city planning, especially in developing countries like Turkey. In addition, studies in Turkey focus on district or country-based examples instead of the neighborhood (e.g., Cantekin, 2020; Çiçek et al., 2021). Since urban spaces are constantly changing with globalization, it is much more important to carry out neighborhood-based studies to examine accessibility from a physical perspective. Because it is not known to what extent these new different spaces affect life, it is necessary to analyze these changes on a large scale for the elderly. This study will examine the effect of the accessibility

of physical environment elements that affect the active aging of women on a neighborhood basis, comparatively between two neighborhoods.

1.4 Configuration of the Thesis

In the 2 chapter of the thesis, the autor reviews the literature on active aging from a planner's perspective. There are five subheadings in this section. Demographic revolution, problems that arise with demographic revolution, active aging, studies and strategies addressing aging problems and active aging concept in the world and concluding remarks are the titles of the second part.

In the 3 chapter, the method of the study is presented. It aims to inform about research design, site selection, participant selection, and data collection and analysis methods.

The chapter 4, the author presents the findings of the study. This chapter is organized into three sections. The first section provides information about the characteristics of the survey participants. While the second section is about the role of the accessibility of neighborhood facilities in promoting the active aging of older women, the last section is about the opportunities and barriers to the accessibility of these facilities.

The thesis ends with a conclusion chapter. It is emphasized how the research objectives were achieved and how it contributed to all parties involved in the research. In this chapter, the author also discusses the results in relation to the existing literature. After a discussion of the limitations of the study, the chapter concludes with implications of the study for planning policy and future research.

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CHAPTER 2

LITERATURE REVIEW

This chapter includes literature research for the readers to help them to understand the relationship between active ageing and neighborhood planning design. The chapter is organized under five main sections. The first section is about a brief introduction to the problem. It focuses on the demographic revolution. In the second section, the problems brought by the demographic change were mentioned. The third section introduces the concept of active ageing as a response to the problems mentioned in the previous sections of the thesis. Because this thesis is about the effect of active ageing on urban planning, a definition of the term 'active ageing' and 'neighborhood planning design and its determining factors' are provided. In the fourth section, studies conducted abroad and in Turkey on active ageing problems are discussed. In addition, since the factors of active ageing in urban planning are not exactly the same in the studies examined, each of them has been examined in this fourth section. The final section, concluding remarks, provides a summary of all the sections. By referring to the literature reviewed, a conceptual model will also be presented in this final section to guide the author in the design of the method of the study.

2.1 The Demographic Revolution

A population is a group of people of the same species living in a particular place. Members of a population often depend on the same resources. They are subject to similar environmental constraints and depend on the presence of other members for their survival (Tuff & Tarsi, 2012). Demography is also the study of population

characteristics. It explains how these characteristics evolved over time. Demography can also include aspects that affect population growth or decline. However, population size, density, age structure, fecundity (birth rates), mortality (death rates), and gender ratio are some of the most important criteria in demographics (Dodge, 2006).

Chronological age is considered important to define the onset of old age. Determining the course of life is often dependent on chronological age (going to school, getting a driver's license, retiring, etc.). However, aging is not a phenomenon that can only be determined by chronological age. It is also determined by physical, biological, mental, cultural, and social conditions. In other words, the fact that an individual is 65 years old does not mean that he is in the same situation as others mentally and physically (Özmete, 2016). In addition to that, The United Nations considers individuals aged 60 and older to be elderly. However, many developed countries accept the age of 65 as a reference for the onset of old age, especially in order to benefit from the social security system. Thus, there is no definite consensus on the definition of the concept of "elderly" and the onset of old age throughout the world; this concept has different meanings in different societies (Özmete, 2016). For this reason, it becomes difficult to tell the age when old age begins in the life period process of individuals. Because in developed countries, life expectancy at birth was 45-50 years in the 1900s. It has increased to an average age of 80 today (UNFPA, 2012).

In the International Population Report, which is prepared by Kinsella and He (2009), it is stated that the average age of the world has increased at an unpredictable level and that social and demographic changes have taken place accordingly. In this report, it is mentioned that the 65 and older age group made up 7 percent of the world's population and reached 506 million in 2008. In addition, it is announced that this rate is expected to increase to 14 percent and reach 1.3 billion in 2040. The report predicted that the world's elderly population will increase by 870 million on average every month in a year. While the number of countries with a population of at least 2

million aged 65 and older was 26 in 1990, it was seen that this number reached 38 countries in 2008. The report's expectation for the year 2040 is that there will be at least 2 million elderly population in 72 countries (Figure 2.1). In other words, one of the most remarkable demographic challenges of the twenty-first century is population aging, which can be described as a growth in the number of older persons in society. The fact that this process will continue to be essential for the remainder of the century is a much more important issue (Ministry of Family and Social Policies, 2013).

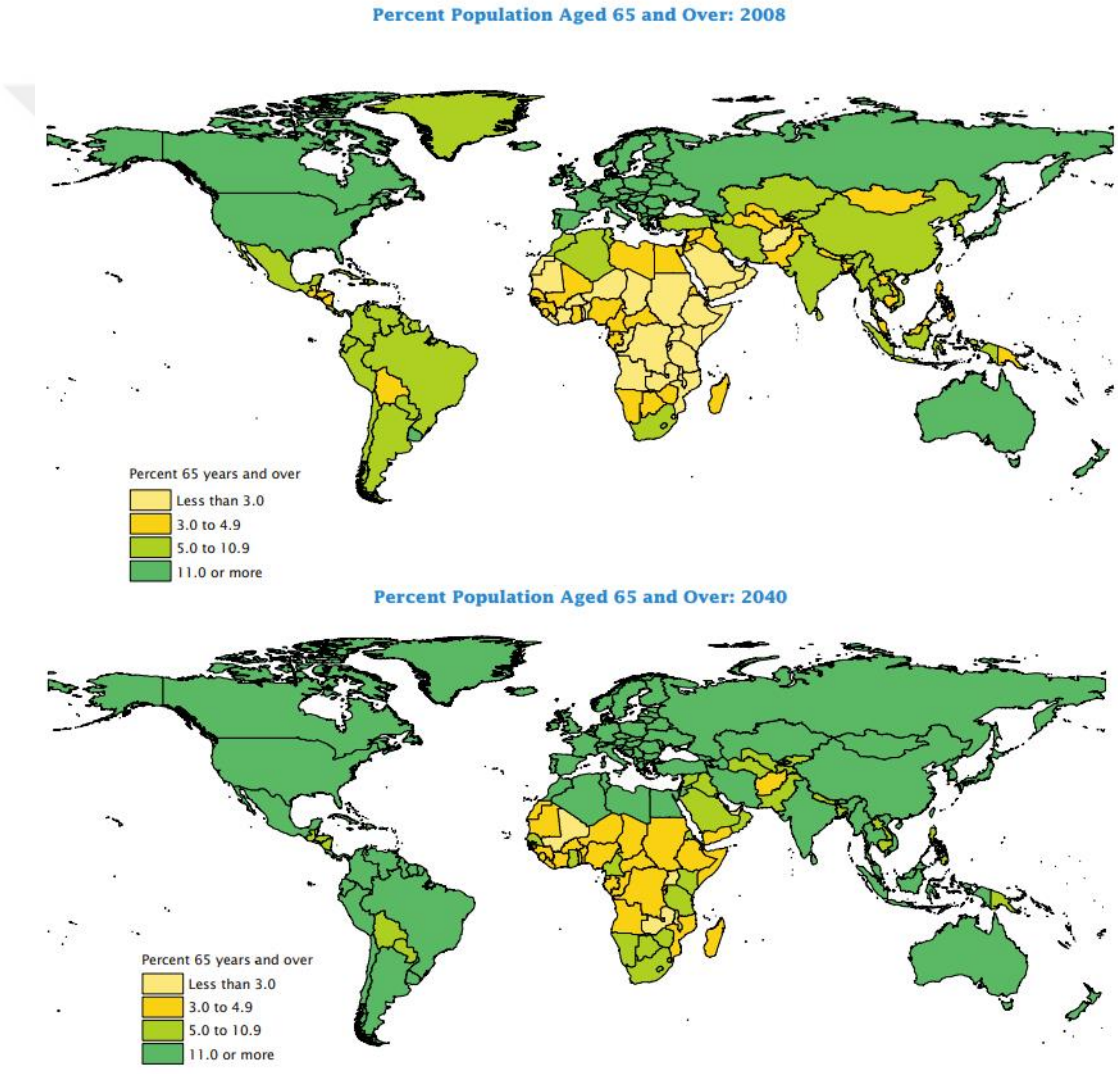


Figure 2.1: Population Aged 65 and Over by Size Threshold (2 Million): 2008 – 2040 (Source: U.S. Census Bureau, International Data Base, on June, 2014.)

In addition to the increase in the elderly population, among the most important effects of this transformation are the decrease in birth rates and the prolongation of life expectancy at birth and at age 60. This situation increases the importance of studies to increase the number of years to be lived in good health (Özmete, 2016). In fact, longevity is an increase in the number of years that can be lived in good health. At this juncture, healthy and active aging themes emerge as a comprehensive and universal approach (Özmete, 2016).

2.2 Problems Brought by Demographic Changes

Older people who have lost family members and friends drift into loneliness and social isolation. So they start to have a smaller social network. Social isolation and loneliness in old age are linked to declines in both physical and mental well-being (Erbil, 2022). In addition, the possibility for older persons to experience preventable poor health outcomes, poverty, neglect and abuse is increased when they are not properly included in human development plans. Concurrent risks for society and families include a burden of dependency, unsustainable expenses for health, and diminished productivity. No country is completely ready for longevity. However, the challenge is greater for less developed countries, where most older people live, their numbers are growing rapidly, and the social determinants of poor health are even more pronounced (ILC, 2015).

In the United Nations World Health Organization World Report on Aging and Health, it is stated that current public health approaches towards the aging society are ineffective, and the health status and well-being of the elderly do not progress in direct proportion to the increased longevity. Health inequalities are widely observed among the elderly. In addition, a direct relationship is defined between the level of development of countries and health; generally, in developed countries, the health status of the society is considered as a natural consequence of socioeconomic development. However, existing health systems are not adequate to fulfil the needs

of the elderly population in most countries, including high-income countries (Özmete, 2016).

Long-term care models are also both insufficient and unsustainable. In addition, the physical and social environment contains many barriers and deterrents in terms of both health and participation (Özmete, 2016). The following section aims to introduce what these barriers and deterrents are.

2.2.1 Aging and the Planning of the Built Environment

One of the essential changes shaping the 21st century is the aging population (Erol, 2015, s.96). It is almost clear that, in the not-too-distant future, practically all countries will face the challenge of population aging at various times, densities, and paces (Sarıipek, 2017).

The growing population of older men and women, with their collective experience and abilities, is a valuable resource for the economy and society as a whole. In other words, the participation of the elderly in society is becoming increasingly important to offset the decline in the proportion of young people (ILC, 2015). According to Active Ageing: A Policy Framework (2002), while older people are a valuable resource that makes an important contribution to our societies, they are often overlooked because old age can come to mind as individuals who are in need of care, poor social relations, unable to get used to innovations quickly, unhappy, restless and lonely. These negative evaluations can cause their lives to be negatively affected (Ak, 2016). This situation reduces the quality of life of the older person. About 20% of persons over the age of 70 and 50% of those over the age of 85 state that they have problems with daily tasks like showering, dressing, using the restroom, eating themselves, and getting from a chair to a bed (Disability in Old Age, 2004). In addition, taking action on aging and health is also important for sustainable development. Today, life expectancy is getting longer and the elderly population in society is increasing. In order to build interconnected, peaceful, fair and safe

societies, it should take this demographic transition into account during development and ensure that the elderly contribute to the process while taking action (WHO, 2015).

Due to the changes in their capacities, the elderly may also encounter difficulties in their cities and neighborhoods. They begin to have difficulty doing some movements. For example, it is more difficult to walk on the sidewalks, get on public transport, do things in banks and similar institutions, shop in the bazaar, put things in wardrobes, bend over and get up. The elderly can arrange their living space in line with their own needs, but cannot interfere with public spaces (İçli, 2017).

The quality of the environment reveals the daily activities of the elderly, the way they spend their free time and the degree of their participation in social life. The narrowing of the movement area as a result of physical and economic inadequacies increases the importance of the conditions of their surrounding environment. Their surrounding environment not only allows the elderly to carry out their daily activities and establish social relationships but also increases their satisfaction with their neighborhoods and city in general (Kalınkara, 2017).

With the population aging, the problem of the city's inability to meet the needs and wishes of the elderly has emerged (Beard & Petitot, 2010, p. 428). There are still many barriers to access in cities. Despite technological developments, many commercial and public buildings are not accessible to the elderly (Kalınkara, 2017). In other words, there are many ergonomic design-related problems that prevent the transportation of the elderly and disabled in the built environment. Level differences on the ground, steep stairs, poorly maintained sidewalks, insufficient street signs and lighting, poorly designed parks and insufficient public toilets can be counted among these (Carvalho et al., 2012 & Kalınkara, 2017). In addition, adverse conditions such as urban obsolescence, physical deficiencies and high crime rates can cause chronic stress and fear in the elderly (Kalınkara, 2017).

Insufficient benches are another important barrier. The lack of benches is a different problem, especially in neighborhoods with slopes (Joseph et al., 2007). People complain about the scarcity of benches. In addition, women with no shopping areas near their homes said they needed help with some housework (Bjornsdottir, 2012). Furthermore, the inadequacy of sheltered walkways is also a barrier (Hovbrandt et al., 2007).

As mentioned previously, active aging, defined by the World Health Organization, refers to a process in which safety and participation can be ensured for the elderly population while giving importance to health. Thus, cities encouraging active aging are the places where access to health services is easy, living standards are increased for the elderly and green areas, walking paths and safe road crossings are available. In addition, it represents cities with a safe environment where transportation is easily accessible for the elderly, and it represents cities with age-friendly buildings. Furthermore, social participation is very important in age-friendly cities. What the city can do about the elderly is to strengthen social network connections, increase the sense of responsibility of active participation with various opportunities, and combat loneliness and isolation feelings. For this, safe pedestrian paths and suitable walking paths with adequate traffic lights must be found. In addition, it is necessary to increase the participation of the elderly in public with safe and plenty of green areas and to make them active actors who can benefit from their knowledge and experience (Erol, 2015: 96).

Aging can accelerate with the effect of unhealthy behaviors. Physical activity and eating good nutrition are essential for people's health and well-being as they age. Failure to do so is considered one of the unhealthy behaviors. However, the opportunities offered to individuals by the environment and the control individuals have over their own lives also determine the aging process. These opportunities arise from the obstacles or incentives that affect the behavior of the individual and the social and physical environment in which they live that directly affects their health. This is one of the important struggle areas in policy-making for many countries and

unfortunately, the social and health investments to be made for this old age period can also be seen as a burden. However, the return of these investments in systems that starting from the individual and extending to the society is important (WHO, 2015) (Figure 2.2).

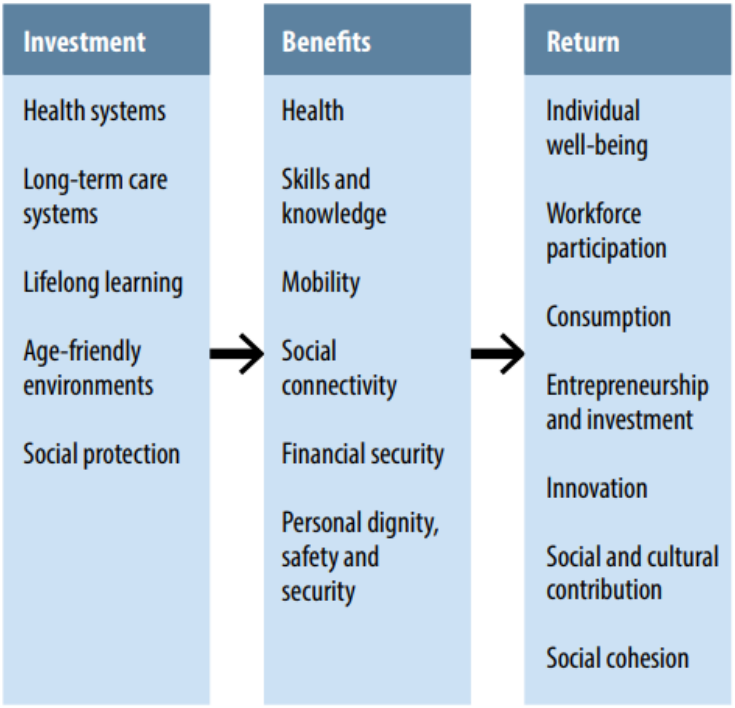


Figure 2.2: Investment in and Return on Investment in Ageing Populations
(Source: World Economic Forum's Global Agenda Council on Ageing, 2013)

Older people can participate in community events even if they have any disability. This process can increase their contribution to their families, peers, and communities. The first issues to be addressed here are preventing unexpected and premature deaths in the later stages of life, individuals with chronic diseases not experiencing disability due to their diseases, individuals enjoying life in their advanced ages and elderly individuals participating in social, political, and economic activities of the society (Aslan, 2016).

As in Japan, various courses in order to develop professional skills, and on-the-job training programs as in Germany, their competencies can be increased and their

participation in the workforce can be ensured (Eser & Küçük, 2021). At this point, the concept of active aging, which supports both healthy aging and managing the life of the elderly, should be understood with all its dimensions (Özmete, 2016).

2.2.1.1 A Disadvantage of Older Women in Active and Healthy Aging

In addition to the socioeconomic conditions, other factors, such as gender relations and ethnicity, which contribute to persistent inequality over the course of a person's life and in old age, also influence experiences of active aging (Calasanti, 2004). Almost everywhere in the modern world, women outlive males. (Austad, 2006; Barford et al., 2006). In practically every population, at older ages, women outnumber males. In the world, women made up 55.7 percent of those who were 65 or older in 2022. By 2050, their percentage is expected to fall to 54.5 percent (United Nations Department of Economic and Social Affairs, 2022). Even when the mortality rate is high, a woman's survival advantage is high (Zarulli et al. 2018).

Although women live longer, they experience less well-being, protection, and security in old age because of various factors, such as being more likely to work in the informal sector, having low educational status, having lower incomes, and having more chronic and disabling illnesses (United Nations Population Fund, 2012; United Nations, 2010; Cobos, 2008).

In addition to that, there are gender differences in the health status of the elderly. Women, on average, have a longer life expectancy than men, while healthy life years are lower than men (Corsi et al., 2010). Gender inequalities in mental health grow as people get older. According to Calvó-Perxas et al. (2016), older women experience more pain and depression than older males do. According to other studies, discrimination against women in society such as discrimination in the workplace, or the likelihood that women may experience domestic violence affects the disparity in depression levels (World Health Organization, 2000).

Furthermore, older women experience the successful aging process differently than men due to the changing family structure, retirement, economic income, social relations, the status of being widowed, and changes in physiological and psychological health. According to Pinquart and Sörensen's (2001) study, which reviewed gender differences in old age from the perspective of subjective well-being, the rate of disease is higher in women than in men. This indicates a possible disadvantage in terms of health. Older women are more likely to be widowed than older men because they live longer (Dannefer, 2003; Stein & Moritz, 1999). All these changes cause older women to feel less secure as they get older. These data show that the aging processes of women are affected by gender characteristics (Çelebi, 2021).

Naah, Njong, and Kimengsi (2020) examined the determinants of active and healthy aging. According to the findings of their study, it was seen that gender had a positive relationship with active aging, and it was found that the active aging scores of men were higher than women. Different research findings mention the gender-based nature of aging in the gerontology literature and reveal that active aging is gender-based in favor of men (Calasanti, 2012; Knodel & Ofstedal, 2003). This shows that women have to deal with the problems caused by aging more than men (Erbil, 2022).

In addition, the COVID-19 pandemic has further exacerbated the impact of discrimination on older people, especially older women. According to the World Economic Forum, just two years after its onset, the epidemic has enhanced the gender welfare gap. This indicates that unless structural adjustments are made, women will continue to age more disadvantageously than men (Global Gender Gap Report, 2021). Although the COVID-19 pandemic has brought attention to the need for social and economic policy adaptation to secure the protection of older people's rights, the gender dimension of aging has remained nonequal reflected in policy discussions and decision-making. Some campaigns have not explicitly stated the concerns, needs, and actions of older people during the pandemic (United Nation, 2021).

Effective tools are provided by international human rights and policy frameworks for the promotion and defense of women's rights. In particular, the Convention on the Elimination of all Forms of Discrimination against Women preserves women's rights throughout their lives. At the regional scale, the 2015 Inter-American Convention on Protecting the Human Rights of Older Persons and the 2016 Protocol to the African Charter on Human and Peoples' Rights on the Rights of Older Persons also provide older women with specific protections. However, due to the lack of a comprehensive legally enforceable document, the COVID-19 pandemic's impact on older people, especially older women, has highlighted the human rights protection gaps for this age group globally (Mahler, 2021). One of the main reasons why older people, and especially older women, are neglected in policy decisions is the existence of such gaps in the international human rights framework (UN Advocacy Brief on Older Women, 2022).

Shortly, when the literature is examined, it is seen that men age better than women is more dominant. It is thought that this difference in favor of men is mainly due to socioeconomic differences and women's difficulties in accessing necessary services (United Nations Division for the Advancement of Women Department of Economic and Social Affairs, 2002).

Given the gender differences in social roles, experiences, and opportunities, a gender approach is required to implement active aging policies, which is considered an essential strategy for responding to population aging (WHO, 2002; Centro Internacional de Longevidade (ILC) Brasil, 2015).

2.3 Active Ageing: A Framework for Age-friendly Cities

In recent years, life expectancy at birth and the age of 60 has increased with the spread of health technologies, improvement of health services, and access to health services, especially in developed countries. For this reason, concepts that look at

aging from different aspects, such as active and successful aging, have started to be discussed by WHO (Özmete, 2016).

In addition, with the aging of societies, many questions arose, such as how individuals will maintain independent and active as they get older, how to strengthen health and social protection systems, how to increase the quality of life of individuals in extended life. In this context, aging was recognized as a European policy issue when the European Commission established an observatory in the early 1990s to examine the impact of national policies on aging. Subsequently, the recognition of 1 October as World Elderly Day and 1999 as the Year of the Elderly is important in underlining the importance of the topic. In this context, the policy document named Towards a Europe for All Ages, which the European Commission put forward, mentioned the reduction of the population in working age (1999: 5). Increasing the employment rate, improving social protection policies, reversing early retirement trends, supporting research on health policies and elderly care, and developing policies against workplace discrimination and social exclusion in Europe are solutions to these challenges (Foster & Walker, 2015, s.86). Similarly, WHO (2002) recommends civil societies, governments, and international organizations to implement active aging policies and programs that improve older peoples' participation, health, and safety (Çuhadar, 2020).

In order to engage global cities to make their societies more age-friendly, the World Health Organization (WHO) published a Policy Framework on Active Ageing in 2002. Active aging aims to increase the expectancy of healthy life and quality of life as they age, including the disabled, frail, and in need of care (WHO, 2002).

The reflections of active aging in urban planning are seen especially in the USA, where the elderly population is increasing. In the late 1990s, the term active aging was adopted by the World Health Organization. The World Health Organization defines active aging as the process of optimising possibilities for security, participation, and health to improve people's quality of life as they age. Active ageing

are valid to both individuals and groups. It enables people to participate in society in accordance with their needs, desires, and abilities and to realize their potential for physical, social, and mental well-being throughout their lives while providing them with enough protection, security, and care when they need it (WHO, 2002, s.12).

It is possible to find the origin of active aging in the Disengagement/Activity Theory, which was developed in the USA in the early 1960s in response to the idea that people lose their ties with society as they get older (Foster & Walker, 2015: 84). According to the activity theory developed by Cumming and Henry in 1961, the activities or roles of people inevitably decrease as they age (Collins, 2014: 1; Foster and Walker, 2015: 84; Manuel de Sao Jose et al., 2017: 49). The active aging approach is based on the idea that people become passive, especially with the onset of the retirement period, and that passivity is an undesirable and negative development that isolates people from society and fuels the feeling of uselessness. According to the activity theory, the person must remain active in post-retirement life so that old age does not turn into the most unhappy life stage. Because the only condition for a happy and peaceful old age is to stay active (Tufan, 2016: 147). The active aging approach, in this context, alters its strategic planning from a needs-based approach, which presumes that older people have passive targets, to a rights-based approach, which recognizes that people have the right to equal opportunities and treatment in all aspects of life as they age (WHO, 2002).

Healthy aging is a component of active aging. It can also be used similarly to the concept of successful aging. Active aging and healthy aging are key components of successful aging, which is a comprehensive approach. Successful elders are those who, compared to their peers, have little to no loss of function and maintain their connection with life. Successful aging depends on a number of factors, including participating in exercises, eating a healthy and balanced diet, keeping strong social ties, traveling, and leading an active lifestyle. As it is understood, successful aging includes active aging (Özmete, 2016).

Scientifically, the idea of active aging is highly tied to successful, healthy, and productive aging (Fernandez-Ballesteros et al., 2013). Based on this common point, it is possible to say that active aging emerges as a concept that reflects the importance of psychological, psycho-social and health factors to encourage adaptation to aging (Çuhadar, 2020).

2.3.1 A Set of Principles Guided by the Active Aging Policy Framework

A set of guiding principles to guide policy action is assumed by an active aging policy framework. The principles listed below combine those presented by WHO and others (European Commission, 2012; Walker, 2002; Walker & Maltby, 2012; International Council on Active Aging, 2015).

1) Participation in the workforce or physical activity is not the only type of activity. In addition to volunteering and civic activities, being active also includes meaningful participation in social, cultural, spiritual, and family life (ILC, 2015).

2) Active aging is valid for people of all ages, including older persons who are healthy and high-functioning, as well as older adults who are fragile, disabled, and in need of care (ILC, 2015).

3) The purposes of active aging are restorative, preventive, and calming measures. Active aging aims to address demands throughout the range of personal capacity and resources. As vital as extending health and function are ensuring the quality of life for people who cannot regain health and function (ILC, 2015).

4) Active aging promotes interdependence as well as individual liberty and independence (ILC, 2015).

5) Active Ageing encourages inter-generational solidarity. This means equitable resource allocation between age groups. It also fosters concern for each generation's long-term welfare and the opportunities for intergenerational encounters and support (ILC, 2015).

6) Active aging combines opportunities for bottom-up participation with top-down policy action to promote and support health, lifelong learning, participation, and security (ILC, 2015).

7) Active Aging is rights-based rather than needs-based. As people develop, mature, and age, they have the right to equitable opportunity and treatment in all aspects of life. It respects diversity. In addition, it adheres to all UN-promulgated human rights conventions, agreements, and principles, with paying particular attention to the rights of people who encounter inequity and exclusion all of their lives. It especially acknowledges the human rights and the United Nations Principles for Older Persons of independence, participation, dignity, care, and self-fulfillment (ILC, 2015).

8) Active aging encourages individuals to accept personal liability for seizing opportunities made available by recognized rights. It is conscious of the crucial need to avoid placing blame on those who have been excluded from society and have missed out on possibilities for lifelong learning, participation, and healthy decision-making (ILC, 2015).

The dynamic, lifetime interplay of risk and protection within the person and within the environment is known as active aging. At the same time, each determinant also affects Active Aging on its own (ILC, 2015).

2.3.2 Determinants of Active Ageing

The aging of a person is determined by many factors such as physical, psychological, social, economic and educational status, not chronological age. In other words, the aging process is a multidimensional process in which environmental factors determined socially, socio-culturally and economically are also effective. Changes in family, education, urbanization, per capita income and labor force affect the aging of the population, especially the individual, by forming these environmental factors (Hablemitoğlu & Özmete, 2010; Çuhadar, 2020).

This means that the word “active” in this definition is used not only to be physically active but also to continue to participate in social, economic, cultural, spiritual and civil affairs (Mendes, 2013: 174). Additionally, measures to keep older people healthy and active are a necessity, not a luxury, in all nations, but especially in developing countries (WHO, 2002).

Active aging depends on various factors, influences or determinants surrounding individuals, families and nations. A comprehensive understanding of these determinants helps design effective policies and programs. More research is required to define and specify each determinant's function in the active aging process, as well as the interactions between variables (WHO, 2002).

In other words, even if research on many of the determinants grows, our knowledge of how these determinants interact over the life course is still limited. Although more data is coming from middle-income countries, particularly from the Survey of Ageing and Adult Health conducted by WHO, most research on the determinants of active aging is undertaken in North America and Europe (ILC, 2015).

WHO released a set of Determinants of Active Ageing in 2002 to describe the determinants that specify whether or not a person ages actively over their lifetime (Figure 2.3). These include health and social services, behavioural determinants, personal determinants, social determinants, economic determinants and physical environment.



Figure 2.3: Determinants of Active Ageing (Source: WHO)

Over the life course, culture and gender can be considered as overarching and intersecting determinants that shape both the individual and their surroundings. Personal determinants and behaviors are unique to the person (ILC, 2015).

Culture means that a society's common meanings that developed historically and are expressed in customs, creative expression, language, rituals, and expectations for both individual and group behavior. Culture shapes every aspect of life, from what people eat to what people wear. It identifies the roles of men and women, along with ideas about the value of people of different ages, social classes, and other cultural backgrounds (ILC, 2005).

Culture is also an important factor in whether living with the younger generation is the preferred way of life. For example, it is known that several generations live together in most Asian countries. From this point of view, culture and traditions should be considered while policy making (WHO, 2002).

Based on this study, the factors of neighborhood design (land uses, public open spaces, and micro-scale urban design features) on accessibility is examined in encouraging older women to an active aging process. In the following sections of the thesis, personal, economic, social and physical determinants is explained in detail because of their influential role in affecting the methods of the study.

2.3.2.1 Personal Determinants

Genetics and psychological factors form personal determinants (WHO, 2002). How a person ages is significantly influenced by genetics. Aging is a genetically determined biological process (Kirkwood, 1996). Furthermore, psychological traits like intelligence and cognitive ability (like solving issues and coping with change and loss) are strong indicators of active aging and longevity (Smits et al., 1999).

Gender is also one of the personal determinants. The World Health Statistics Report includes that women are not equal to men in most aspects, such as education, income, food etc (WHO, 2002: 39). From this point of view, it is known that gender factor are determining factor in active aging, and it is stated that these two factors have an intersecting effect (Çuhadar, 2020).

2.3.2.2 Economic Determinants

Topics of income, social protection, and working form economic determinants (WHO, 2002). Financial capital affects health, security, and continuing opportunities for active attendance (ILC, 2015). Employment has a significant effect on one's financial preparedness in old age. Later in life, access to long-term, high-quality care is particularly crucial. However, many older adults, particularly women, do not have adequate incomes. This has a significant impact on their ability to get nutritious foods, healthcare and adequate housing (WHO, 2002).

2.3.2.3 Social Determinats

Social determinants include social support, education and literacy, and violence and abuse (WHO, 2002). The social environment argues that social support, education, and lifelong learning opportunities are key factors that increase health, participation and safety as aging. Lack of social support is linked to an increase in mortality, disease, and psychological discomfort, as well as a decline in overall health and well-being (Çuhadar, 2020). In addition, personal networks, which are comprised of family and friends, exert strong influences that increase or weaken resilience throughout life (ILC, 2015).

Furhermore, despite living longer than men, women are more likely to exposure domestic violence and face discrimination in access to education, work, health care, and social security benefits (WHO, 2002).

2.3.2.4 Physical Determinants

Physical environment includes secure housing, recreational areas, clean water, clean air and secure foods (WHO, 2002). Furthermore, the present health crisis (Covid-19 and the resulting increase in immobility) has recently sparked interest in environmental design and its potential improvement to health (Cellucci & Di Sivo, 2021).

The built environment and well-designed outdoor areas can improve long-term health and well-being, reduce the risk of falls, encourage physical exercise, and lessen social isolation. This is because less user-friendly environments are perceived by older people, especially those with vision and mobility problems, as places at increased risk of falling. Such environments can increase fears about the occurrence of crime and traffic. These reasons can reinforce feelings of loneliness by making going out less attractive (Cairncross, 2016). According to data from the I'DGO (Inclusive Design for Getting Outdoors) research program, older person living in

areas where it is easy and enjoyable to spend time outside are more likely to be physically active to enjoy their lives.

Parks and other outdoor areas offer opportunities for social interaction in addition to options for exercise and recreational activities (ILC, 2015). Three aspects of the physical environment—urban paths (pedestrian and bicycle lanes), urban environment, and urban furniture—can enable or hinder the elderly from using urban public spaces. Since there is evidence that increases in moderate physical activity are related to longer-term changes in behavior than those requiring specialized facilities, such as sports fields, walking should be encouraged, particularly among older persons (Department of Health, 2004). Green spaces, parks, and other natural settings can encourage people to be more active, which can improve health and well-being. There is proof that older people who live near facilities like parks and other open spaces walk more and leave their houses more frequently (Saelens, 2008; Sugiyama, 2007). In addition to that, the distribution of land among commercial, residential, and other uses/facilities significantly impact the outdoor mobility of elderly. People tend to walk more frequently in mixed-use neighborhoods where residential and retail areas are closely integrated (Yen et al, 2009).

The topography (flat or hilly) and design elements such as curb ramps, street crossings, lighting, weather, pathways, and benches affect older people's mobility in the outdoor-built environment (Rosenberg, 2013). In addition, personal mobility is also highly dependent on accessibility and availability. As functional capacities decline, transportation options become more important (ILC, 2015).

2.3.3 Age-Friendly Cities and Communities (AFCC)

The concept of an age-friendly city, which was put forward with the idea of an age-friendly society and enabled active aging, has been developed by WHO. Age-friendly city includes safe and sustainable environments for the development of a

livable environment for the elderly to lead a harmonious life like everyone else in society (Aslan, 2015). Older people, in particular, need supportive and enabling living conditions to make up for the physical and social changes brought on by aging (WHO, 2007). This requires an age-friendly city. The World Health Organization (WHO) has encouraged the ideas of age-friendly neighborhoods and cities through its Age-friendly Environments Program. An age-friendly city, according to WHO, encourages active aging by optimizing chances for health, engagement, and safety to enhance people's quality of life as they age (WHO, 2007). An age-friendly city adapts its infrastructure and services to be inclusive of and reachable to elders with a variety of needs and abilities (WHO, 2007:1; Çifçili, 2012).

According to researchers, AFCC initiatives are intentional and distinct actions taken by stakeholders from various sectors within an identified and typically local geographic area to improve social and/or physical environments that support older adults' health, well-being, and capacity to age in place and the community (Greenfield et al., 2015). The main features of the age-friendly city were defined in terms of older persons and service providers, and it became a reference source for both developing and developed cities (Davey, 2017)

The age-friendly city movement has its roots in the concept of active aging, introduced in 1999 at the UN International Year of the Older Persons. WHO has broadened this idea beyond attendance in the workforce or physical activity to encompass the idea that older people should have the chance to engage in social, economic, cultural, and spiritual work (Barusch, 2013). In addition, policies and programs to ensure active aging are necessary for various interventions, including social and physical environment adjustments. When WHO began the Global Age-Friendly Cities project in 2006, this idea was developed further (Buffel et al., 2016).

The first inspiration for the development of a Global Age-Friendly Cities Guideline came from discussions during the World Congress of the International Association of Gerontology in Rio de Janeiro, Brazil, in 2005. Between 2006 and 2007, the World

Health Organization established 158 focus groups involving 1485 participants aged 60 and over from low- and middle-income regions in 33 cities. These cities are representative of both developed and underdeveloped countries. Including megacities like Istanbul, London, and New York, as well as national capitals, regional centers, and small cities, the chosen cities demonstrate the variety of modern urban environments (WHO, 2007).

There are currently 1439 cities and communities in 51 countries that make up the WHO Global Network for Age-friendly Cities and Communities, which serves more than 300 million people globally. (To examine countries and provinces in more detail, please see https://who.maps.arcgis.com/apps/instant/minimalist/index.html?appid=66799d4ec039487e8ef8367f0254a99a). In addition, eight age-friendly themes are created and this topic is explained in 2.4.1.2.

2.3.4 Neighborhood-based Desing Factors of Active Ageing

The design of the physical environment affects the active aging of people (WHO, 2002). Older persons may suffer painful injuries due to environmental risks. They are less likely to go out in an unsafe environment because of their multiple physical disabilities. This leads to isolation, depression, decreased fitness and increased mobility problems. Poor lighting, slippery or uneven walking surfaces and a lack of supportive handrails are environmental dangers that raise the chance of falling.

As the population of the cities increases, it becomes more and more important that the elderly can be integrated into the cities or that the cities can be integrated with the elderly (Aydın & Es, 2020). In most nations, a significant portion of the elderly lives sedentary lifestyles. The most likely populations to be inactive include those with low incomes, members of racial or ethnic minorities, and older people with disabilities (WHO, 2002). Improvements made in the physical environment of a city or community allow older persons to live longer and in connection with their city or community. It also allows them to stay independent and active and even spend more

time participating in voluntary activities (Aydın & Es, 2020). Policies and programs should promote inactive people, as they age, to become more active. It is crucial to create places where people can walk safely and support relevant activities that encourage physical exercise (WHO, 2002).

Well-lit streets for walking, accessible public toilets, and traffic lights that give people more time to cross the street are essential for the physical environment in age-friendly policies. It is also important to make public buildings and transport accessible to all persons with disabilities (WHO, 2002). Additionally, living in regions with lots of activities also encourages older people to travel. For elderly individuals, the idea of accessibility is quite important (Banister & Bowling, 2004).

In addition, transportation is essential for the elderly to go to certain places. Transport is one area that reflects a city's or community's physical environment, creating opportunities for people of all ages to remain independent and dynamic and to age actively. Transportation is of great importance in terms of benefiting from the possibilities of a city. Like other population groups, the elderly also benefit from transportation facilities. The main factor that distinguishes them from other population groups is the reasons for their transportation preferences. An essential part of their transportation is spare time activities. Spare time activities are important for active aging and transportation plays a vital role. According to the WHO focus group study, accessibility is substantial for older persons using transport facilities. This is the factor that has the most significant impact on the mobility of older persons. In addition, the elderly have greater and significant physical limitations. For this reason, transportation is one of the issues that should be paid special attention to. It should be highlighted that removing as many obstacles to their mobility as possible will have a positive impact. Age-friendly transportation will provide

advantages like the quality of life, independence, socializing, participation, and physical and mental health (Aydın & Es, 2020).

The benefits of physical activity are mentioned in the Physical Activity Guidelines of the TR Ministry of Health (2014). It was also mentioned that about 70 percent of the elderly do not do these physical activities. In addition, it is mentioned that they walk if the bazaar, market, and shopping areas are within a short distance and meet their friends outside. However, it is not mentioned how urban design elements, transportation and pedestrian roads should be in order to do this.

2.4 The Evolution of State Strategies and Policies Aimed at Addressing Active Ageing Issues in the World

Current approaches evaluate active aging more comprehensively and decisively. These approaches address factors such as legislation preventing age-based discrimination to persuade people to work longer and the availability of lifelong learning opportunities. It also advocates arranging living spaces and providing access to goods and services. It is stated that in order to put all these into practice, structural arrangements must be carried out in harmony (Aydın & Sayılan, 2014).

It is based on the understanding that successful measures in tackling the problems associated with population aging are to enable people to lead active and healthy lives throughout their lives. In other words, an active aging policy emphasizes maintaining participation in social, economic, cultural, and spiritual life as well as social, mental, and physical well-being, autonomy, and independence (WHO, 2002; Sidorenko & Zaidi, 2013). Setting policy objectives to advance the well-being and quality of life of people of all ages is possible with the help of a comprehensive active aging policy agenda (Zaidi, 2017).

As life expectancy increases, the need for health products, health services, and coordination of institutional care services increases. For example, by 2050, the

amount of expenditure to be allocated from the Gross National Product (GNP) for long-term care in 27 European Union countries in Europe will double. For this reason, countries that can age healthy and active and make the best use of their elderly population potential will be in the most advantageous position in terms of competition with other countries in the future. At this point, countries first need to create their data and evidence on healthy and active aging. Accordingly, it is also an essential responsibility for societies to determine their strategies and action plans regarding active and healthy aging and to implement practical programs for the construction of healthy and active future generations (Özmete, 2016).

2.4.1 Studies, Strategies and Policies in Developed Countries

Population aging was a progressive process in most of the developed world, occurring after decades and generations of consistent socioeconomic growth. In developing countries, this process is accelerated to two or three decades. Therefore, developing countries are aging before a significant gain in income occurs, whereas developed countries were prosperous before they got old (Kalache & Keller, 2000).

If it is necessary to solve this problem and give more detailed information, in Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth, the importance of the issue was emphasized by reference to active aging in the context of the challenge to be experienced in order to promote a healthy and active aging population (UNECE, 2013). In order to develop social policies to be formed in this context, indices are created in which current situation analyses are made for old age and many different dimensions of old age are revealed. Some of these are Hartford Aging Index, Global Agewatch Index, Well-Being Index, Successful Aging Index and Human Development Index. An active aging index is one of these indexes. According to the European Commission, the Active Aging Index plays a vital role in monitoring the implementation of the Social Investment Package, which is a set of guiding principles that will assist member states in implementing their social investment policies (Manuel de Sao Jose et al., 2017: 50). It was emphasized that the index can

help answer some critical policy questions such as how some countries score higher, how countries with lower scores can be motivated, what some countries can do better in certain areas of active aging and how the experiences of countries can teach other countries (UNECE, 2015).

2.4.1.1 Active Ageing Index

According to United Nations Economic Commission for Europe's Analytical Report (2019), at the European Union (EU) and international levels, the term active aging has been commonly used to denote a clear, long-standing strategic policy goal (United Nations, 2002; European Council, 2010; European Commission, 2018b). However, more systematic efforts have only recently been launched, led by the European Commission (EC) and the United Nations Economic Commission for Europe (UNECE), to develop and supply an evidence-based tool for supporting policymaking in this area. At the regional (UNECE, European Union), national, and local levels, the goal is to help the promotion and implementation of active aging. As a result, the Active Ageing Index (AAI) was created and released in 2012 with the assistance of the multi-stakeholder Expert group on AAI and the European Centre for Social Welfare Policy and Research in Vienna.

In other words, active aging is associated with many phenomena, such as maintaining employment, reducing poverty, and improving health and well-being. Although these policies focus on certain purposes from time to time, they should be implemented with a global approach that will affect the lives of the elderly in every aspect. Many of these policies were gathered under the Active Aging Index (AAI) Project (Zaidi, 2015).

It consists of four main parameters and sub-components of these parameters (Figure 2.4). Employment, Participation in Society, Independent, Healthy, and Secure Living and Capacity and Enabling Environment for Active Ageing comprise these four main parameters. The first three parameters refer to real experiences that reflect

independent, autonomous and safe life experiences as well as various activities involving older persons. The fourth parameter emphasizes the capacity and suitable environments for active aging according to the environmental and individual characteristics of the older person that facilitate or inhibit active aging (UNECE, 2014). When the sub-components are considered, it is seen that a total of 22 indicators (financial security includes three indicators in itself; relative median income, no severe material deprivation, and no poverty risk) are considered in the calculation of the index. Each indicator has a different weight in the index calculation, and a total value from 0 to 100 is reached (Figure 2.5) by summing each indicator. Although it is known that 100 points are an impossible goal to reach, it is assumed that the higher the results, the higher the potential of elderly individuals to contribute to the economy and society and that the environment they live in makes their active aging possible (UNECE, 2016., Manuel de Sao Jose et al., 2017). The AAI value of the hypothetical country, where the best values are observed for each indicator, can be seen as a realistic target for the AAI in the long run (UNECE, 2012).

Furthermore, a high Active Ageing Index score does not necessarily indicate that the elderly population is always in a high level of well-being. According to Zaidi et al. (2013), the normative value judgment of the higher the better should not always be used to compare various indicators. The writers note that the higher is better approach can have drawbacks.

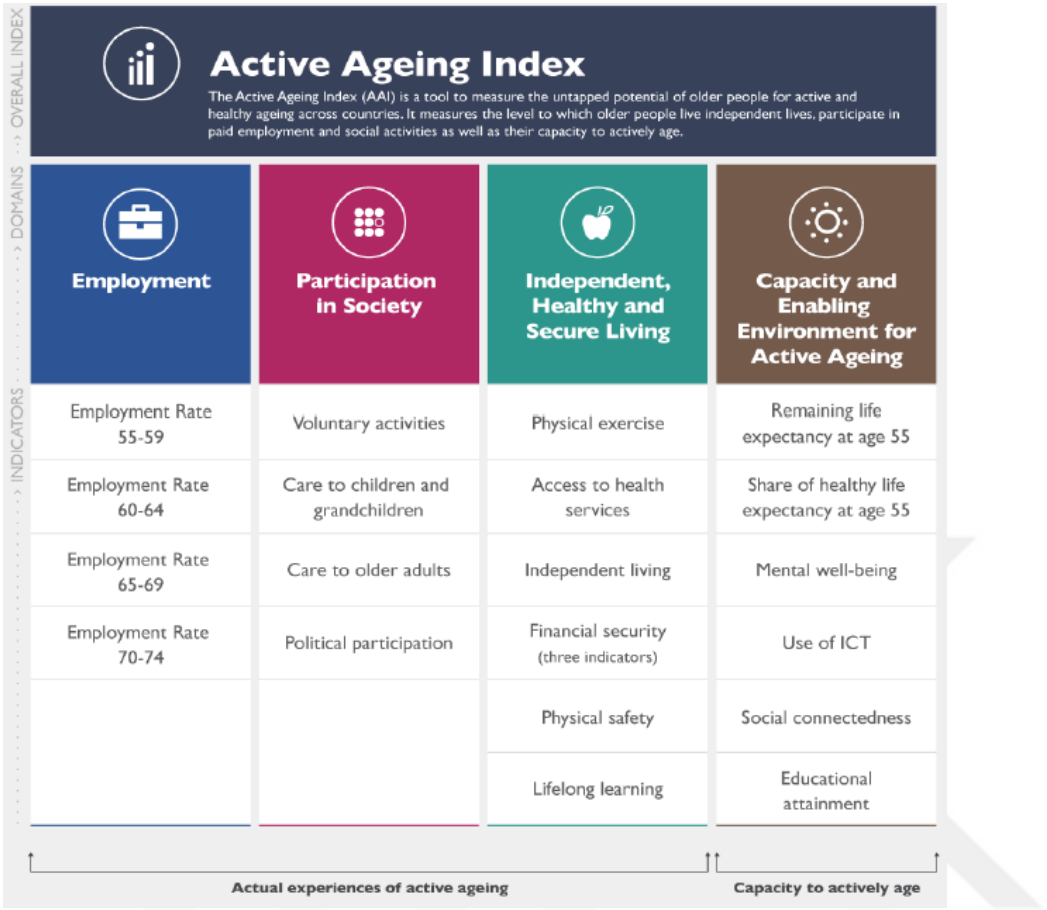


Figure 2.4: Active Ageing Index (Source: WHO)

Domains	Domain weight (within overall index)	Indicators	Indicator weight (within domain)
Employment	35	1.1 Employment rate 55-59	25
		1.2 Employment rate 60-64	25
		1.3 Employment rate 65-69	25
		1.4 Employment rate 70-74	25
			100
Participation in society	35	2.1 Voluntary activities	25
		2.2 Care to children, grandchildren	25
		2.3 Care to older adults	30
		2.4 Political participation	20
			100
Independent, healthy and secure living	10	3.1 Physical exercise	10
		3.2 Access to health and dental care	20
		3.3 Independent living	20
		3.4 Relative median income	10
		3.5 No poverty risk	10
		3.6 No material deprivation	10
		3.7 Physical safety	10
		3.8 Lifelong learning	10
			100
Capacity and enabling environment for active ageing	20	4.1 Remaining life expectancy of 50 at 55	33
		4.2 Share of healthy life expectancy at 55	23
		4.3 Mental well-being	17
		4.4 Use of ICT	7
		4.5 Social connectedness	13
		4.6 Educational attainment	7
	100		100

Figure 2.5: Weights assigned to individual indicators and domains (Source: WHO)

AAI is made flexible to meet policymakers' requests and data availability constraints. Thus the weights given to various indicators can be changed in accordance with the preferred policies. Also, this will restrict the ability to compare AAI scores internationally in cases when some AAI indicators are unavailable at the regional level (Zaidi, 2015).

Developed by Asghar Zaidi, professor of International Social Policy at the University of Southampton, and his colleagues, the index has been defined as a tool to measure the unused potential of the elderly for active and healthy aging at the national and supranational levels. The first phase of the 2012 AAI-I project, developed by the European Center for Social Workfare Policy and Research in Vienna, was implemented in 27 European Union (EU) countries from January 2012 to February 2013. On the other hand, AAI-II started in October 2013 and continued until April 2016. It included Croatia, which is an EU country, and four non-EU countries, Canada, Iceland, Norway and Switzerland, after the first project. In addition, the scope of 2010 and 2014 AAI values has been expanded by calculating according to 2008 and 2012 data. AAI-III, which started in May 2016, was completed in April 2019 (UNECE, 2019). The active aging index helps countries in this context by providing a comparative view of the activities and independence of the older person. From this point of view, the aim of the index has been determined as showing the priority areas to policymakers (UNECE, 2015).

An AAI study was conducted with the 2014 data of 28 EU countries. There is a separate analysis for men and women in this study. In almost all countries, women score lower than men. Concerning overall AAI scores, just three EU members—Estonia, Latvia, and Finland—show that women outperform males (Figure 2.6; Zaidi & Stanton, 2015). However, there are some signs that women outperform men. For example, they have a longer life expectancy and provide more informal care. Results shown in Figure 2.6 demonstrate that there is a gender disparity in all AAI domains. However, the gender gap in financial security is most noticeable in the first (employment) and third (independent living) domains in most EU nations. This inequality is mainly due to their experience of unequal employment over their lifetime. This is a legacy that seriously affects the income status of current generations of older women. Despite significant improvements in female labor force participation in the EU in recent years, the employment gap between the sexes remains high (Walker & Zaidi, 2019).

Gender gap 2014	Employment		Participation in society		Independent living		Capacity for active ageing	
Rank 2014-AAI	+	+	+	+	+	+	+	+
1 Sweden	7.1			0.8	1.9		0.7	
2 Denmark	9.1		2.6		0.2			0.5
3 Netherlands	13.8		1.9		2.4		2.1	
4 UK	10.6			1.7	1.5		1.5	
5 Finland	1.5			3.4	2.2			2.8
6 Ireland	12.3			3.8	3.4		0.3	
7 France	3.8		2.1		4.0			1.8
8 Luxembourg	7.6		8.9		2.8		3.0	
9 Germany	9.3		1.9		3.3		0.5	
10 Estonia		0.8		1.8	3.0			6.1
11 Czech Rep	12.4		4.1		1.7			1.9
12 Cyprus	18.1			1.0	2.8		6.1	
13 Austria	11.0		2.1		0.9		1.8	
14 Italy	13.1			0.5	2.7		2.6	
EU28 avg	9.5		0.1		2.8		0.5	
15 Belgium	7.6		3.0		3.9			1.3
16 Portugal	11.2		0.0		2.5		2.8	
17 Spain	8.5			2.2	2.8		1.4	
18 Croatia	11.6		1.5		4.5		2.1	
19 Latvia	2.4			6.3	3.8			1.2
20 Lithuania	5.3		2.0		1.9			2.6
21 Malta	22.9		1.1			1.2	1.5	
22 Bulgaria	6.0			0.4	7.5		0.5	
23 Slovenia	9.2		1.7		2.5			0.3
24 Romania	10.5			1.6	4.0		2.9	
25 Slovakia	10.6			1.3	2.7		1.1	
26 Hungary	6.0		0.6		2.9		1.3	
27 Poland	12.5			2.3	3.2			2.0
28 Greece	13.1			3.7	3.4		3.2	

Figure 2.6: Gender differences in the experience of active aging, in 28 EU members States based on 2014 overall AAI and its four domains (Source: Walker A. & Zaidi A., 2019)

Another study was conducted in Portugal in 2012 by Constança Paúl et al. The WHO active aging model's several determinant categories are measured by the protocol. It was elaborated, taking into account a thorough literature review of the most common

gerontology instruments and the European Survey on Ageing Protocol (Hall & McAuley, 2010) (Table 2.2). Every instrument is adapted to Portuguese. Finally, self-report indicators (based on a standard health-rating item), illness (the sum of self-reported health problems), sleep issues, subjective physical activity ADL, loneliness, vision, audition, smoking, and alcohol consumption were used to assess health and physical condition. Details on variables and encoding are shown in Table 2.3. In short, this study shows that objective and subjective variables contribute to active aging and psychological variables significantly contribute to the structure. It is anticipated that different contexts and cultures would have different active aging profiles. It can be applied to guide specific population and individual-based initiatives (Paul et al, 2012).

Table 2.1: Instrument Used for Each of The WHO's Active Ageing Model Determinant

Determinants	WHO (2002) contents	Assessment protocol "P3A"	
Personal factors	Biology and genetics psychological factors	Psychological distress	GHQ-12 [28]
		Happiness	QBE/F [32]
		Cognitive functioning	MMSE [25]
		Personality	NEO (Costa and McCrae, 1992 [31])
		Optimism	LOT-R [30]
		Loneliness	Loneliness scale (Paúl et al., 2008 [22])
Behavior determinants	Smoking Physical activity Food intake Oral health Alcohol Medication	Pulmonary function	Peak flow
		Strength	Hand grip
		Subjective health	Health and life styles questionnaire (ESAP, Fernández-Ballesteros et al., 2004 [24])
		Illness	
		Sleep problems	
		Subj. physical activity	
		Vision	
		Audition	
		Smoking	
		Drinking	
		ADL and IADL	
Determinants of social environment	Social support Violence and abuse	Social network	Lubben scale of social support (Lubben, 1988) [27]
	Education	Education	Sociodemographic questionnaire
Determinants of health and social services	Health and disease Health services Continuous care Mental health care	Life satisfaction	Inventory of life satisfaction (Fonseca et al., 2011 [34])
Determinants of physical environment	Friendly environment Safety houses Falls Absence of pollution	Environment domain of quality of life	WHOQOL Brief—physical environment subscale (Harper et al.,1998 [7], Canavarro et al., 2010 [33])
Economic determinants	Wage Social security Work	Income	Socioeconomic status (National Institute of Statistics)

(Source: Paúl & Ribeiro & Teixeira, 2012)

Table 2.2: Definition of Variables

Variable	Coding
Subjective health	1 = very good; 2 = good; 3 = reasonable; 4 = poor; 5 = very poor
Sleep problems	0 = no; 1 = yes
Subjective physical activity	1 = very good; 2 = good; 3 = reasonable; 4 = poor; 5 = very poor
ADL	0 = with difficulties; 1 = without difficulties
Illness	0 = none;1 = 1 illness; 2 = 2 illness; 3 = 3 illness; 4 = 4 or more illness
Psychological distress[a]	1 = <9; 2 = [9, 12[; 3 = [12, 16[; 4 = ≥16
Happiness	1 = nothing; 2 = 2; 3 = 3; 4 = very
Optimism[a]	1 = <11; 2 = [11, 13[; 3 = [13, 15[; 4 = ≥15
Quality of life[a]	1 = <24; 2 = [24, 26[; 3 = [26, 29[; 4 = ≥29
Loneliness	0 = yes; 1 = no
Cognitive impairment[a]	1 = <25; 2 = [25, 28[; 3 = [28, 30[; 4 = ≥30
Vision	1 = no specs and very poor/poor vision; 2 = no specs and acceptable vision; 3 = no specs and good/very good vision; 4 = specs and very poor/poor vision; 5 = specs and acceptable vision; 6 = specs and good/very good vision
Audition	1 = no device use and very good/good audition; 2 = no device use and acceptable audition/3 = no device use and poor/very poor audition; 4 = use device
Smoking	1 = no; 2 = ex-smoker; 3 = yes
Drinking	1 = never; 2 = special occasions; 3 = occasionally; 4 = regularly
Income[b]	1 = ≤386 €; 2 = 386 €–772 €; 3 = 772 €–1158 €; 4 = >1158 €
Education level	1 = no formal; 2 = primary; 3 = 5–8 years; 4 = 9–12 years; 5 = university
Peak flow[a]	1 = <180; 2 = [180, 250[; 3 = [250, 340[; 4 = ≥340
Grip strength[a]	1 = <18.3; 2 = [18.3, 22.9[; 3 = [22.9, 29.0[; 4 = ≥29.0
Family[a]	1 = <9; 2 = [9, 11[; 3 = [11, 13[; 4 = ≥13
Friends[a]	1 = <5; 2 = [5, 8[; 3 = [8, 10[; 4 = ≥10
Confidents[a]	1 = <4; 2 = [4, 7[; 3 = [7, 9[; 4 = ≥9
Neuroticism[a]	1 = <30; 2 = [30, 34[; 3 = [34, 37[; 4 = ≥37
Extraversion[a]	1 = <39; 2 = [39, 41[; 3 = [41, 44[; 4 = ≥44
Openness to experience[a]	1 = <35; 2 = [35, 37[; 3 = [37, 40[; 4 = ≥40

[a]Quartiles; [b]by reference to the Portuguese Minimum National Wage in 2006.

(Source: Paúl & Ribeiro & Teixeira, 2012)

2.4.1.2 Age-Friendly Themes and Policies

Apart from the active aging index, age-friendly themes emerged with the concept of the age-friendly city, which was put forward by WHO with the idea of an age-friendly society and makes active aging possible. Age-friendly cities have 8 themes. These are shown in Table 2.1. The WHO aimed to help communities and cities evaluate themselves based on standards in eight crucial areas. The guide recommends that older people be included in all phases of action and cities that want to be age-friendly should take a cross-sectoral approaches (Plouffe et al., 2016). The guideline offers a methodical framework for choosing, defining, and measuring

indicators. It is not, however, mandatory. It was created to be adjustable so that the indicators could be chosen and measured locally and appropriately (Warth, 2016).

Table 2.3: Key Dimensions Contributing to Being an Age-Friendly City

Key dimensions	Definition
Outdoor spaces and buildings	Concerns the structured environment and the urban landscape. Contains such issues as quality of life, access, and security.
Transportation	Involving accessible and reasonably priced public transport. Access to community and health services affects participation in social and civil activities.
Housing	Involves such aspects of housing as design, structure, and economic preference. Affects security and wellbeing.
Social participation	Involves participation in spare time, social, cultures, and spiritual activities in the community. Affects remaining healthy and mental health.
Respect and social inclusion	Includes such issues as age-related discrimination and lack of intergenerational bonds. Affects intergenerational solidarity.
Civic participation and employment	Includes the elderly contributing to their communities through paid employment or voluntary work. Affects remaining active and wellbeing levels.
Communication and information	Involves the prompt obtaining of accessible, practical information. Affects being informed and independent, and remaining active.
Community and health services	Necessary to preserve independence and health; involves high quality, appropriate and accessible care and support services. Affects physical and mental health, and quality of life.

(Source: Briana Zur and Debbie Laliberte Rudman citing the WHO (2007) 'WHO Age Friendly Cities: Enacting Societal Transformation through Enabling Occupation')

The most important of these themes in this thesis are the outdoor spaces and buildings, and transportation. The outdoor spaces and buildings have a significant impact on older people's mobility, quality of life, and aging in place. WHO has listed the outdoor spaces and buildings's features such as an attractive and clean environment, green spaces, recreational areas, age-friendly pavements, accessibility, a safe environment and walkways (WHO, 2007: 12-16).

2.4.1.2.1 Outdoor spaces and buildings

Use of public outer space has a positive effect on the health of individuals of all age groups (Simonic, 2006). For example, according to study which is done by Öztürk and Turan (2017), it has been observed that the active participation of older persons

in urban life and their physical activities in their daily lives positively affect both their psychological and physiological health.

- **Pleasant and clean environment**

  People in many cities bring up the beauty of the city's natural surroundings as an age-friendly feature. For instance, being close to the ocean is regarded as a unique advantage in Cancun and Rio de Janeiro. At the same time, older people voice concerns about their city's cleanliness as well as annoying noise levels and odors. It is stated that the odor of smoke from narghile (oriental water pipes) in Tripoli is oppressive, especially at night and during Ramadan. The perceived ugliness of the city lowers the quality of life for older people in many locations. People in Mexico City suggest organizing a clean streets campaign to address similar issue (WHO, 2007).

- **Importance of green spaces**

  One of the most frequently mentioned age-friendly features is green spaces. There are many studies on the positive effects of green spaces on health (Croucher & Myers, 2008; Enssle & Kabisch, 2020). Contact with nature leads to increased physical activity and associated physical and mental health benefits. Green spaces promote participation and social interaction among neighbors (Enssle & Kabisch, 2020).

  However, some obstacles keep older people from using green spaces in many places. In New Delhi, for example, some green spaces are said to be poorly maintained and have become dumps, and in Himeji, some parks are considered unsafe (WHO, 2007). In addition, a communal activity area where bikes, skateboards, or roller skates pass can be a limiting factor for an older person entering a park. Different suggestions are offered to solve these problems. Smaller, quieter and enclosed green spaces are needed in the city's fringes rather than the large crowded parks used by children and

skateboarders in Halifax. Seniors in Amman recommend private gardens for their age group, while seniors in New Delhi recommend restricted areas in parks for the elderly (WHO, 2007).

- **Resting areas**

  Although the benches have a small feature of the built environment, they have great meaning for the elderly. They are concrete examples of places where social environments intersect and physical mobility (Ottoni et al., 2016). Many older people find walking around their local region difficult without a place to rest (WHO, 2007).

- **Age-friendly pavements**

  The situation of the pavements has a noticeable effect on the ability and willingness to walk on the field. Narrow, uneven, and cracked pavements are potential hazards and affect older people's walking ability. For instance, pedestrians and street sellers often share sidewalk space in many cities, including Mexico City, Rio de Janeiro, and Jamaica. In other cities, such as La Plata, Moscow, Ponce and the Ruhr, pedestrians often have to walk on the road due to cars parked on sidewalks. Furthermore, the challenges that older people have using the sidewalks may be made worse by the weather. For instance, worries have been raised about Sherbrooke's sidewalks not being cleared after snow, while in Portage la Prairie, the risk of falling is thought to be greater after it snows (WHO, 2007).

  A smooth, flat and non-slip surface, enough space for wheelchairs, away from obstructions such as street vendors, parked vehicles and trees, and priority access for pedestrians are recommended to make pavements age-friendly (WHO, 2007).

- **Safe pedestrian crossings**

  Crossing the road safely is a frequently cited concern. Many cities are reportedly taking steps to improve these conditions:

  - traffic lights at pedestrian crossings in Cancún
  - traffic islands in La Plata
  - anti-slip lanes at crosswalks in Mayaguez and Portland

  In addition, crosswalk lights are reportedly changing very quickly in many cities. In Melville, crossing lights are recommended to have a visual countdown, so pedestrians know how much time they have to cross the street. Moreover, in Istanbul, audible signs at pedestrian crossings are admired. (WHO, 2007).

- **Accessibility**

  Accessibility is a crucial unifying factor that facilitates safe and independent use of urban space by all users (Burton & Mitchell, 2006). For example, low-speed vehicles in the public spaces around the residence enable the elderly to be directed to go outdoors (Gehl, 1987).

  Walkability, one of the determinants of livability in public spaces, provide convenience to pedestrians with factors such as pedestrian way conditions, land use diversity, safety and comfort (Ak, 2018). The presence of different typologies of public spaces (playgrounds, hospital, green areas etc.) is the factor that increases walkability (Lambert, 2005). In this context, diversity and uses in public spaces support accessibility.

  In addition, in many cities are addressed to physical barriers to access can deter older persons from leaving their homes (WHO, 2007). A study conducted with 11.5 million households revealed that even 25% of healthy

individuals had accessibility problems. It has also been added that the accessibility problem increases with aging. For example, in the United States, one-third of those aged 65-74, half of those aged 75-84, and about seven-tenths of those aged 85 and over have accessibility difficulties (Will, 2015: 16-31).

It is pointed out that the concrete stairs used to access the slum in Rio de Janeiro are difficult for the elderly to use. The lack of ramps in some areas is a problem in Sherbrooke (WHO, 2007) In addition, another barrier reason is that opportunities are located in a distant environment and not in an immediate environment (Mollenkopf et al, 1997). Therefore planning and education made with the needs of the elderly, especially city planners and architects, resolves these concerns (WHO, 2007).

- **A secure environment**

  There are also security problems in some open areas. Feeling safe in the neighborhood where the person lives strongly influences people's willingness to act in the community, affecting their independence, physical health, social integration, and emotional well-being. Safety concerns, including street lighting, violence, crime, and drugs, are expressed everywhere. For example, going out at night is scary for many older persons (WHO, 2007). In addition, users in Love Park stated that there are safety problems due to skateboarders (Nemeth, 2004).

  Women describe themselves as more vulnerable and weaker than men (Riger et al. 1978). They also say that they walk slowly compared to men. For these reasons, women who are in public places after a specific time think they can be attacked (Stanko, 1990).

- **Walkways and cycle paths**

  Walkways and bike paths are part of a health-promoting, age-friendly environment (WHO, 2007). In addition, walkways are important to encourage and support active park use among older adults (Veitch et al., 2022). It is proposed to have two roads in Udine, one for cyclists and one for pedestrians. In addition, older persons in Udine recommend developing a walking path system to move around the neighborhood. Another example is that officials emphasize the need to ensure that walkways have a smooth surface in Halifax. (WHO, 2007).

- **Older customers**

  Good customer service that caters to the needs of older persons is considered an age-friendly feature. In Jamaica, some businesses provide wheelchairs to older customers. In Mexico City, the elderly are given priority service by law. One of the obstacles seen in many cities is the long line or waiting period that seniors face getting services. Special service arrangements, such as separate queues or service counters for older people, are recommended. Older people in Islamabad recommend prioritizing older women in queues (WHO, 2007).

2.4.1.2.2 Transportation

Usability, accessibility, reliability, and frequency are important in transportation. Frequent and reliable public transportation is considered to be an age-friendly quality. In a study conducted in Istanbul, older persons stated that it takes a long time to travel by public transport because busses do not pass frequently (WHO, 2007: 21). Some cities' residents claim that their public transportation systems offer good coverage of at least certain areas, allowing people to go to their desired locations. However, some people still complain that there needs better connectivity between buses and other means of transport (WHO, 2007: 21).

The design, location and condition of transportation stops and stations are essential features to be considered in planning age-friendly neighborhoods. As transportation becomes appropriate for the elderly, participation in activities will increase (WHO, 2007).

To sum up, to be implemented in these eight main categories of age-friendly cities (Table 2.1), policies, services, environments and structures in an age-friendly city support the active aging of people by:

- recognizing the diversity of resources and capacities among older people;
- recognizing and adjusting to their changing needs and preferences as they get older;
- respecting their decisions and way of life;
- protecting the most vulnerable and;
- encouraging their participation in and contribution to all facets of community life (WHO, 2007).

Additionally, people in an age-friendly city can choose their priorities as they age. Physical design, improved access, encouraging social involvement and mobility, and enhancing intergenerational relationships and support are a few examples of this. The first principle for establishing an age-friendly city or community is to consider an integrated approach to strengthening older people's relationships with their physical and social environment completely (AGE UK, 2019). Age-friendly city features are often considered to represent features of a physical environment or social environment. While physical features typically include housing, transportation, and land use, social features frequently consist of employment and volunteer possibilities, social events, a wide range of community programs and support services (Scharlach, 2016).

2.4.1.3 Concept of Aging in Place in Age-Friendly Communities

International organizations and countries that have made aging in place a policy aim have recently been very interested in the idea of an age-friendly community (ACT Government, 2009). Organizations that work for older people, governments, and health agencies have created age-friendly community models that consider the physical, social, and cultural environment. They seek to optimize opportunities for long-term health and well-being. The majority of these models for age-friendly communities were based on qualitative research studies that determined the features of the community that older people felt were most crucial based on their real-life experiences.

Alongside age-friendly community models, recent empirical studies have investigated neighborhood effects on older adults and shown evidence that the neighborhood's perceived and objective physical features influence older adults' mobility, physical functioning, social participation, security, and health. Such research was based on ecological theories of behavior that explain how the physical characteristics of a setting may influence individual behavior (Cunningham & Michael, 2004) and on the increasing availability of methods suited to study the effects of neighborhood residential environments on individuals, such as multilevel modeling, Geographic Information Systems (GIS) and spatial analysis techniques (O'Campo, 2003). Carla Cachadinha (2012) uses quantitative and qualitative research to find the built-environment characteristics of an age-friendly neighborhood.

In Carla's work, age-friendly community models were identified through a literature review and their categories and contents were compared to identify the most recurring neighborhood physical features. A set of age-friendly neighborhood built environment features was identified based on the physical characteristics identified in the age-friendly community models and empirical evidence of neighborhood

effects on the elderly. The studies carried out in the countries and which aspects they developed are explained in detail in Carla's study.

According to the data obtained from all the studies examined, seven categories showed up as common physical characteristics of an age-friendly neighborhood: proximity of destination; access and transportation options; walkability; security; aesthetic quality; mobility within buildings; and housing options (Cachadinha, 2012).

The first category, the proximity of destinations is the physical feature of an age-friendly community that is most consensual. Some amenity places should be close to older people's housing: recreational facilities, shops in general, transportation hubs, drugstores, banks, libraries, and health services. The second category, access and transportation are important for the need to identify senior-friendly parking and driving conditions.

The third category, walkability means the availability of facilities for pedestrian safety, wheelchair accessibility, and other pedestrian-friendly neighborhood design elements that enable comfortable use of the public space. In addition, the requirement for accessible and pedestrian-friendly outdoor spaces to allow greater physical access for older people is mentioned in all featured age-friendly community models (Cachadinha, 2012).

The fourth category, security comprises the elements of the built environment that affect the perceived or objective fear of crime. The most commonly listed of the specific methods that can be used to lessen the propensity of the physical environment to encourage criminal behavior is lighting to boost natural surveillance (Cachadinha, 2012).

The fifth category, aesthetic quality refers to characteristics like design, maintenance, preserved aesthetics, and landscaping that make a location appealing and distinctive and its comprise natural sights, green and open space area, trees along

routes, the appearance and maintenance of public spaces and buildings and a clean public space (Cachadinha, 2012).

The sixth category, mobility within buildings, refers to entering, using and navigating within public and housing facilities regardless of physical, sensory, or mental impairments. The seventh category, housing options refer to how many different types and sizes of homes, different tenure types, flexible housing arrangements, and residential options with integrated services are present in a community (Cachadinha, 2012)

According to experimental evidence, the most promising objective neighborhood characteristics that positively impact the daily life of older persons are proximity to destinations, greater street connectivity, availability of walkways and footpaths, and green and open spaces within the neighborhood. When interpreting these results, a few limitations need to be taken into account. Age-friendly community models were based on a wide variety of methodologies. Also, most of the conclusions from the experimental evidence were based on self-report (Cachadinha, 2012). So Carla's study found some results for certain populations and areas, and this may not be true for other locations.

2.4.2 Studies, Strategies and Policies Related to Turkey

In this chapter, information about demographic changes in Turkey is given. After explaining the situation of women compared to men, the strategies and studies related to this subject are discussed.

2.4.2.1 Demographics Changes of Turkey

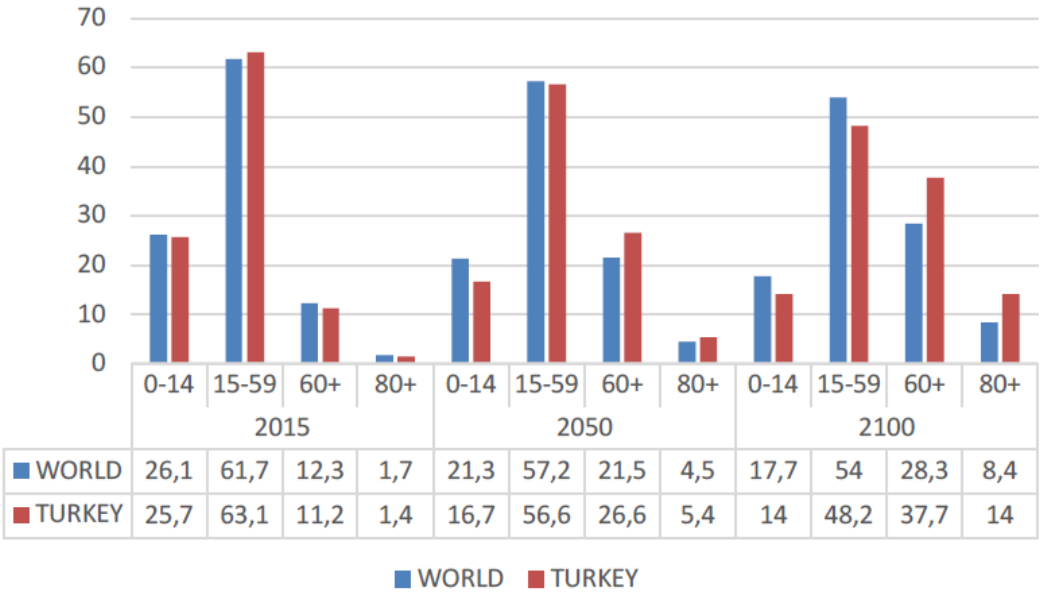
According to Turkish Statistical Institute (TURKSTAT) (1995), people aged 65 and over are defined as the elderly population. Today, the term 3rd Age is used for the period around the age of 65, and the term 4th Age is used for the period around the

age of 80. It is stated that in the third age period, people are in a personal sense of satisfaction. In the fourth age period, it is stated that the dependency status increases (Green, 2013). In addition, according to the Report of the Special Committee on Ageing (2018), the decrease in the share of the young population in the total population and the increase in the elderly population have changed the age structure of the elderly population (Presidency of the Republic of Turkey Presidency of Strategy And Budget, 2019). This means that According to the Turkey Active and Healthy Aging Research (2016), the world and Turkey are going through a demographic transformation that will be highly influential in the economic, social and health fields in the future.

Turkey has also recently been involved in active aging. According to the Report of the Special Committee on Ageing (2018), two-thirds of the world's older people live in developing countries, and estimates are that by 2050, 8 out of every 10 older persons will live in developing regions. This fact is an indication that the elderly are a very influential factor in urban planning. One can observe the problem of aging in Turkey as well. According to the data obtained from the Turkish Statistical Institute, while the elderly population was 6 million 651 thousand 503 people in 2016, it increased by 24.0% in the last five years and reached 8 million 245 thousand 124 people in 2021. While the proportion of the elderly population in the total population was 8.3% in 2016, it increased to 9.7% in 2021. In 2021, 44.3% of the elderly population was male, and 55.7% was female (TUIK, 2021). This indicates that the number of women in the old age population is higher than that of men. Also, according to population projections, it was predicted that the proportion of the elderly population would be 11.0% in 2025, 12.9% in 2030, 16.3% in 2040, 22.6% in 2060 and 25.6% in 2080 (TUIK, 2021). Also, Figure 2.7 shows the situation in Turkey compared to World statistics. Turkey, like other countries, is getting older.

In addition, according to the data obtained from the Turkish Statistical Institute, life expectancy is estimated to be 74.6 years for both sexes in 2010 and 78.5 years in

2050. In 2013, life expectancy at birth was 74.7 years for men and 79.2 years for women. In 2023, it is estimated that it will be 75.8 for men and 80.2 for women.



	0-14	15-59	60+	80+	0-14	15-59	60+	80+	0-14	15-59	60+	80+
	2015				2050				2100			
WORLD	26,1	61,7	12,3	1,7	21,3	57,2	21,5	4,5	17,7	54	28,3	8,4
TURKEY	25,7	63,1	11,2	1,4	16,7	56,6	26,6	5,4	14	48,2	37,7	14

Figure 2.7: Percentage distribution of population in selected age groups (Source: United Nation 2017a)

In addition to the general health information of the world mentioned in title 2.2.1.1 above, there are also gender differences in the health status of the elderly in Turkey. According to the report of the Ministry of Family and Social Policies on Turkey's Family Structure Research: Findings and Suggestions, the rate of those who rate the health status of the elderly as bad/very bad compared to their peers was determined as 17 percent. This rate rises to 22 percent for women. Although the share of women in the elderly population in Turkey is higher and their life expectancy is longer, it is understood that their health status is poor (Turgut & Feyzioğlu, 2014). It also points to higher limitations in daily activities in women than in men due to health problems (UNECE, 2016, s.20).

2.4.2.2 The Studies, Strategies and Policies of the Turkish Government and Researchers

The change in the age structure of Turkey has also started to attract the attention of the Turkish government, especially since the beginning of the 21st century, because there is a rapidly increasing elderly population. In other words, following the Ministerial Conference on Ageing in Berlin in 2002 (MICA), the Turkish government has become considerably more aware of the repercussions of aging and its potential impact on social policy (Yüksel et al, 2007).

Before, it was common for the elderly to continue their lives by being taken to nursing homes. However today, the service mentality is dominant for the elderly to continue their lives in the environment they are used to and under conditions arranged according to the elderly (Social sectors and coordination general directorate, 2007).

According to the Situation of the Elderly in Turkey and the National Action Plan Implementation Program on Aging, several targets have been given to provide supportive environments that offer opportunities in old age. The ones related to this subject are given below:

- Legislative initiatives will be made to plan the physical conditions of the houses and environmental arrangements in a way that will facilitate the daily lives of the elderly.
- Social and cultural activities will be encouraged through access to information and the use of technology in order to enable the elderly to use their spare time and develop intergenerational relations.
- In order to increase participation in social and artistic activities, the elderly will be encouraged to benefit from services such as national parks, museums, state theaters and operas, and relevant institutions and organizations will be encouraged (Ministry of Family and Social Policies, 2013).

Turkey aims to ensure that its pension, health and long-term care systems continue to meet their social goals and maintain their financial sustainability as the pressures of aging increase. The effectiveness of the health system and the social pension system have already undergone some significant adjustments in recent years. The Turkish government makes many attempts to enhance income distribution and social inclusion (Yüksel et al., 2007).

In this context, a National Committee was established to prepare a national action program on aging, and National Action Plans on aging were established in Turkey. Turkey Healthy Aging Action Plan and Implementation Program is prepared every five years. According to this latest report (2021-2026), life expectancy at birth is gradually increasing in Turkey. When the changes in the statistics made by the World Health Organization (WHO) are examined, it is seen that the life expectancy at birth in Turkey, which was 66 years in 1990, increased to 76 years in 2011. According to the life tables made by TURKSTAT between 2016-2018, life expectancy at birth is 78.3 years in total for Turkey, 75.6 years for men and 81 years for women. In general, women live longer than men and the difference in life expectancy at birth is 5.4 years.

Considering the economic condition, although there has been improvement in policy formation regarding the situation of the elderly population in the labor market, it is seen that no concrete application has been made yet. The most important example that can be given in this context is the regulation made at the retirement age. With this legal regulation that prevents early retirement, the retirement age will gradually increase from 2036 and will be 65 years old in 2048, regardless of gender. However, the continuity of employment is still an important problem, especially for those aged 65 and over (Eser & Küçük, 2021).

When considered access, in Turkey, it is not easy for the elderly to access public spaces in cities. Sidewalk widths and uneven roads that do not comply with the Turkish Standards Institute standards are the most common. On the other hand, it is quite difficult to move forward with a wheelchair. Public transport vehicles do not

comply with the standards set by the law and make it difficult for the elderly with limitations of movement to even get on the bus. Similar problems have been identified in the National Action Plan on Aging, and actions have been taken to solve the transportation problem. Accordingly, it involves special parking spaces for the elderly, suitable walking paths, suitable road width, suitable ground surfaces, convenient public transport stops and warning signs (Erol, 2015).

In addition to all these, there are studies on these issues in Turkey. Turkey was also included in a study in which the active aging index of European countries was measured. Although AAI covers EU countries, in a pilot study started in 2014, data from Georgia, Serbia and Turkey were collected, and it was measured whether the index score of a particular region or non-EU countries could be calculated. In this context, a pilot study was made for Serbia and Turkey in 2014. The aim of the pilot study is to determine whether the AAI can be calculated for a particular region (municipality) or a non-European Union (EU) country. A general comparison has also been made for 28 EU countries that have applied AAI. The overall 2014 AAI results for Serbia and Turkey (29.5 and 27.6 points, respectively) show that there is a field for improvement in utilizing the potential of the elderly. This applies to both countries in all domains (UNECE, 2016).

Completion of Turkey's data took until 2015. In fact, some data, such as physical safety, healthy life expectancy, and social connectivity, were compiled from studies conducted in previous years (UNECE, 2016).

In addition to the limited results due to several missing data, Turkey's overall AAI is 27.6 points, placing it 28th compared to the 28 EU countries (Figure 2.8) In all areas, there is a significant field for increasing the untapped potential of the elderly. Turkey scored 18th in employment, 25th in participation in society, 30th in independent, healthy, and secure living, and 29th in capacity and enabling environment for active aging out of 30 countries (28 EU, Serbia and Turkey) (UNECE, 2016). In other words, based on these findings, Turkey is approximately at the bottom of the list. In

addition, it has shown that the most problematic domains are healthy, independent, and secure living. The sub-headings of physical exercise, access to health services, independent living, financial security, physical security and lifelong learning were insufficient in scoring, and a few of these titles can be correlated with accessibility. Physical exercise is related to the environment that individuals live in. If an older person leaves the house to do physical exercise, s/he will prefer accessible areas. If areas are inaccessible, adequate physical exercise cannot be done in the fresh air. In addition, access to health services is also about accessibility. If there is no distinction between rich and poor, a health service is required that the elderly can reach by walking or public transport. Planning of the stops of public transport in an accessible place is also included in this issue.

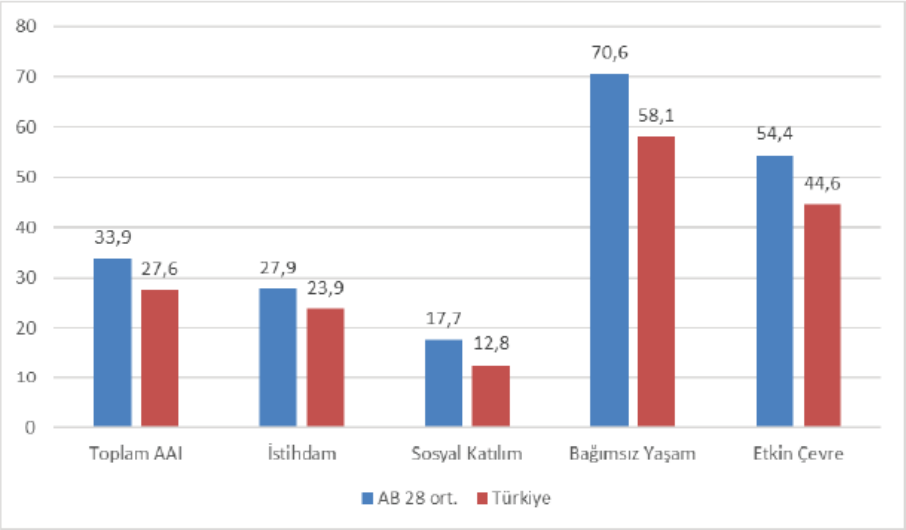


Figure 2.8: 2014 AAI EU Average and Turkey Comparison (Source: UNECE, 2016).

Studies have been carried out in our country's old age field. These are “The Situation of the Elderly in Turkey and the National Action Plan on Aging - 2007 and 2013”, “Tenth Development Plan Aging Specialization Commission Report - 2014-2018”, “Eleventh Development Plan Aging Specialization Commission Report - 2019-2023” is “Turkey Healthy Aging Action Plan and Implementation Program - 2021-2026”. Supporting active and healthy aging is one of the important and priority

targets for these studies. At this point, it is aimed to make a situation assessment of active and healthy aging in Turkey in the Active and Healthy Aging Research (2016) in Turkey to accelerate the actions related to active and healthy aging. The project aims to determine the attitudes and behaviors related to active and healthy aging and to create a resource for developing strategies to support active and healthy aging in Turkey (Özmete, 2016).

In the questionnaire form in this project, questions were formed to examine all dimensions of active and healthy aging. This questionnaire was created based on active aging research conducted by Asghar Zaidi for the World Health Organization, the United Nations Economic Commission and the European Commission, and the Canadian and Australian Health Studies. In this research, the current Turkish Statistical Institute's data, official reports, and studies on the subject were considered (Özmete, 2016).

According to the fieldwork and the survey conducted on people over 65+, it was found that as age increases, the capacity to maintain physical function decreases. It has been determined that women in this age group do less sports and exercise than men. In addition, it has been determined that men have easier access to health services than women. Furthermore, it has been determined that women aged 65 and older feel less safe when going out than men. As a result, it has been determined that the capacity of women to maintain physical function is less than men. In addition, the capacity to maintain physical function varies significantly with marital status and education level (Özmete, 2016).

Other than these studies, as mentioned earlier study, studies on active aging are insufficient in city planning, especially in developing countries like Turkey. In addition, studies in Turkey focus on district or city-based examples instead of the neighborhood (see, e.g., Cantekin, 2020; Çiçek et al, 2021). While Çiçek's (2021) study was city-based, Cantekin's (2020) study was also district-based. Since urban spaces are constantly changing with globalization, it is much more important to carry out neighborhood-based studies to examine accessibility from a physical

perspective. Because it is not known to what extent these new different spaces affect life, it is necessary to analyze these changes on a large scale for the elderly.

2.5 Concluding Remarks

Old age is the most inevitable period of human life. The elderly population is increasing in the world. In addition, older women both outnumber and live longer than older men. Although women live longer, they experience less well-being, protection, and security in old age than men (United Nations Population Fund, 2012 & United Nations, 2010 & Cobos, 2008).

In raising the quality of life of older persons, the housing model, neighborhood, street where they spend their daily lives, the characteristics of the neighborhood they live and environmental conditions gain importance. However, there are some problems encountered. The elderly may face some difficulties in the cities and neighborhoods where they live due to changes in their capacities (such as decreased muscle strength) and economic declines. It is more difficult for them to walk on the sidewalks, gets on public transport, go and solve their problems in banks and similar institutions, and shop in the bazaar (İçli, 2017). However, the fact that urban environmental designs are not made in accordance with them makes the problems caused by the decrease in their capacities and money even more difficult. Active and healthy participation of older persons in daily life is possible by preparing a suitable environment and improving the negativities that prevent participation (Aydemir, 2020).

In order to cope with all these problems, WHO introduced the concept of active aging. Cities that promote active aging are places where access to healthcare is easy, living standards are raised for the elderly, and there are green spaces, walking paths, and safe road crossings. It also represents cities with easy access, a safe environment, and with age-friendly buildings (Erol, 2015)

There are some determinants of active aging. In this study, as mentioned in title 2.3.2, the social, physical, personal and economic determinants of active aging are discussed. When these determinants are evaluated within the framework of the socio-ecological concept, personal and economic determinants have been rethought and evolved as socio-demographic and behavioral factors (Figure 2.9). These factors formed the main basis of the questions mentioned in the method part of this study.

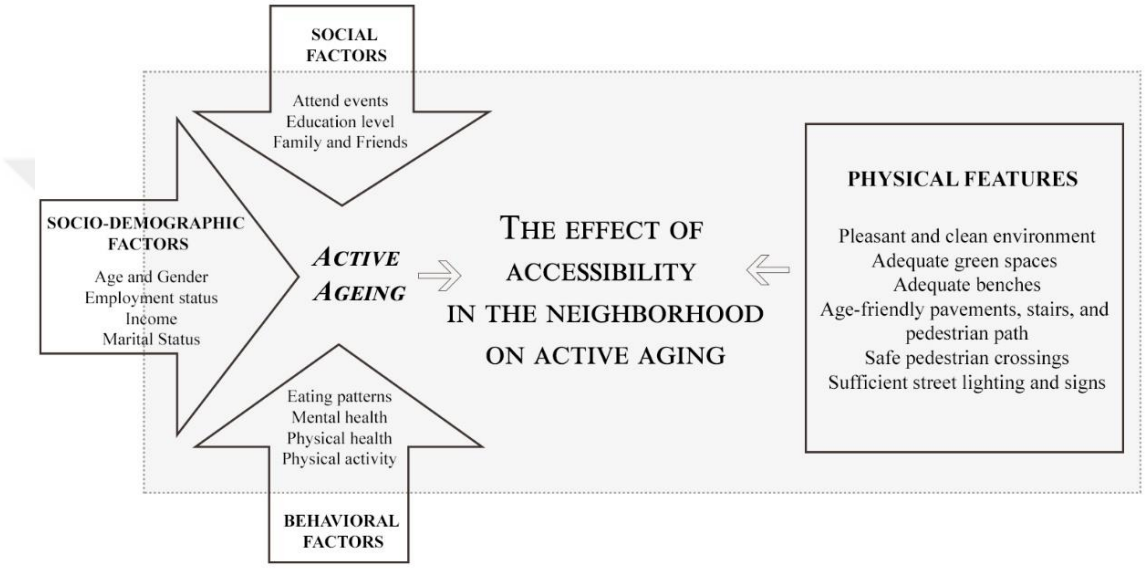


Figure 2.9:The Socio-ecological Conceptual Situation of This Study (produced by author)

Active aging index is also an approach in which policies of active aging are implemented. According to this, scores of each country are formed for four main parameters in the AAI, and the areas that are insufficient according to these scores can be detected and work can be started on those areas.

Furthermore, the concept of an age-friendly city, which enables active aging, includes safe and sustainable environments to develop a livable environment for the elderly to lead a harmonious life like everyone else in society (Aslan, 2015). Two of the eight themes of active aging (the outdoor spaces and buildings, and transportation) are important for this study. The accessibility problems mentioned

under the heading of the outdoor spaces and buildings (2.3.3.1.1) have been the most crucial determinant of this study, as it is more common in older people. The reasons affecting accessibility are road, stair and pavement conditions, land use type, street lamps, etc. (Ak, 2018; WHO, 2007).

According to all this literature, neighborhood design is important. For the physical environment of age-friendly policies, well-lit walking streets, easily accessible public toilets and benches, and traffic lights that offer individuals more time to cross the street are essential (WHO, 2002).

As a result, the elderly population is gradually increasing in Turkey. Like other countries, in Turkey, older women live longer than men but at a greater disadvantage. In addition, studies on this subject in Turkey are generally based on provinces or districts. There is a lack of neighborhood-based studies.

CHAPTER 3

METHOD

This section focuses on the method of the study. As stated in previous chapters, the main question of this thesis is: "What is the role of neighborhood planning and design, more specifically the accessibility of neighborhood facilities, in encouraging older women to an active aging process?". It also asked: “What are barriers to older women’s accessibility, if any, in different neighborhoood contexts?

This chapter is divided into five sections. The first section is about the research design. The second section introduces the context of the study. In this section, the reasons behind choosing the study areas are explained and a brief background information about the chosen neighborhoods is provided. The third section explains the selection of the participants. The fourth section focuses on the data collection preparation process. Finally, the fifth section introduces the data analysis process.

3.1 Research Design

This study proposed a cross-sectional research design to understand the role of neighborhood planning and design in encouraging older women to an active aging process. To increase the validity of the findings regarding the relationship between neighborhood planning and design and the active aging of elderly populations, the author controlled one variable in neighborhood selection process – neighborhood income (i.e., average housing rent and sale prices) – and two variables in participant selection process: age and gender. Two contrasting neighborhoods were selected from Ankara, Turkey, regarding their physical environmental (and perhaps also their social environmental) characteristics. The following two sections explains the context of the study and participant selection process in detail.

3.2 The Context of the Study

This study was conducted in Ankara. This city, located in central Anatolia region, received a large migration from rural areas of the country after its declaration as the capital city of Turkey in 1923 (Figure 3.1).



Figure 3.1. Map of Turkey (Source: https://ontheworldmap.com/turkey/city/ankara/ankara-location-on-the-turkey-map.html)

While the annual population growth rate of Ankara was 34.7% in the 1927-1935 period, this ratio increased to around 75.0% in the 1950-1955 period. Due to this population explosion, Ankara needed new settlement areas. For this, a new plan was sought through a competition in 1952. Yücel Uybadin Plan was approved by the Council of Ministers in 1957 (Figure 3.2). In the plan, the priority development direction was determined as the west. A corridor development was aimed along with public uses on Eskişehir Road, located on the southern West of the city. However, the cities fragmented growth could not be prevented because of the gaps in the legal

and administrative structure. Thus, as in pre-Yücel Uybadin Plan period, the uncontrolled expansion of the city with squatter housing developments continued after the approval of the plan (Söylemez et al., 2018; Tankut, 1988).

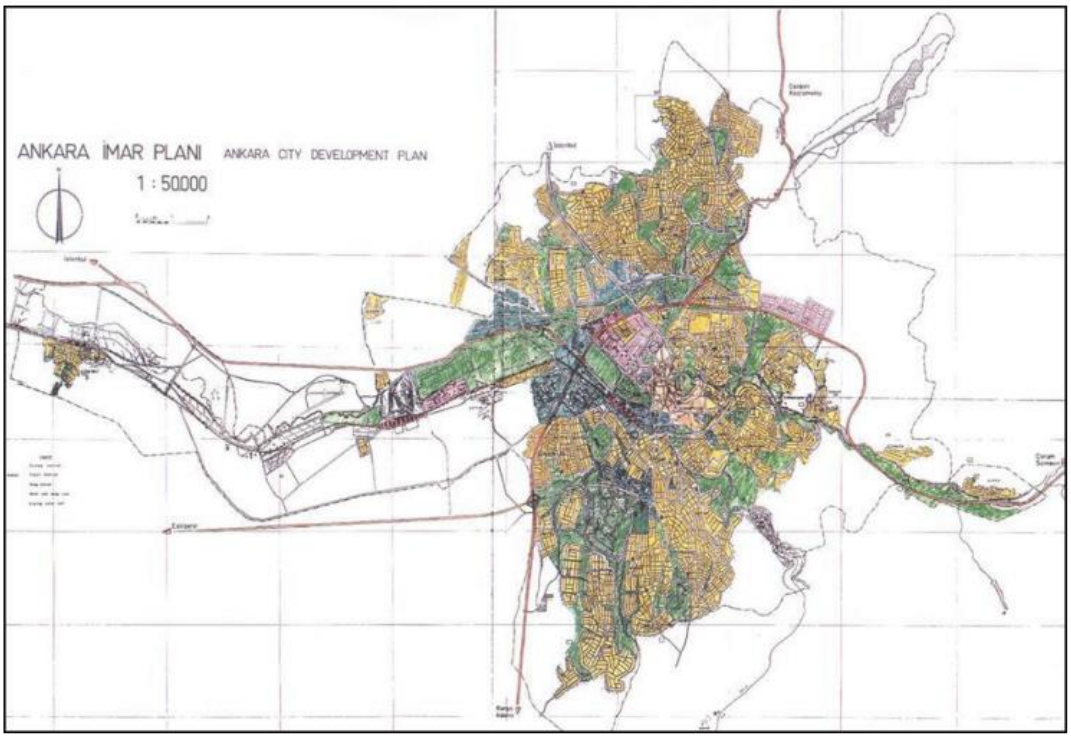


Figure 3.2: Yücel-Uybadin Plan (Source: Ankara Metropolitan Municipality, 2023 Capital Ankara Master Plan Report)

With the 1990 Metropolitan Area Master Plan approved in 1982, the western corridor on the Eskişehir road, which also determines the macroform of today and is one of the city's main corridors, was planned (Söylemez et al., 2018). In 1986, a research group formed in the Department of City and Regional Planning of the Middle East Technical University had a Structural Plan prepared for Ankara's urban macroform change processes, targeting the year 2015. 1990 Metropolitan Area Master Plan (Figure 3.3), with some exceptions, many of the decisions of the Yücel Uybadin Plan were preserved as the basic principles, including the growth of the city along the Eskişehir Road (2023 Ankara Master Development Plan, Explanation Report). In

this thesis, the author selected the two chosen neighborhoods from the western corridor of the city. Both neighborhoods are aligned along the Eskişehir road.

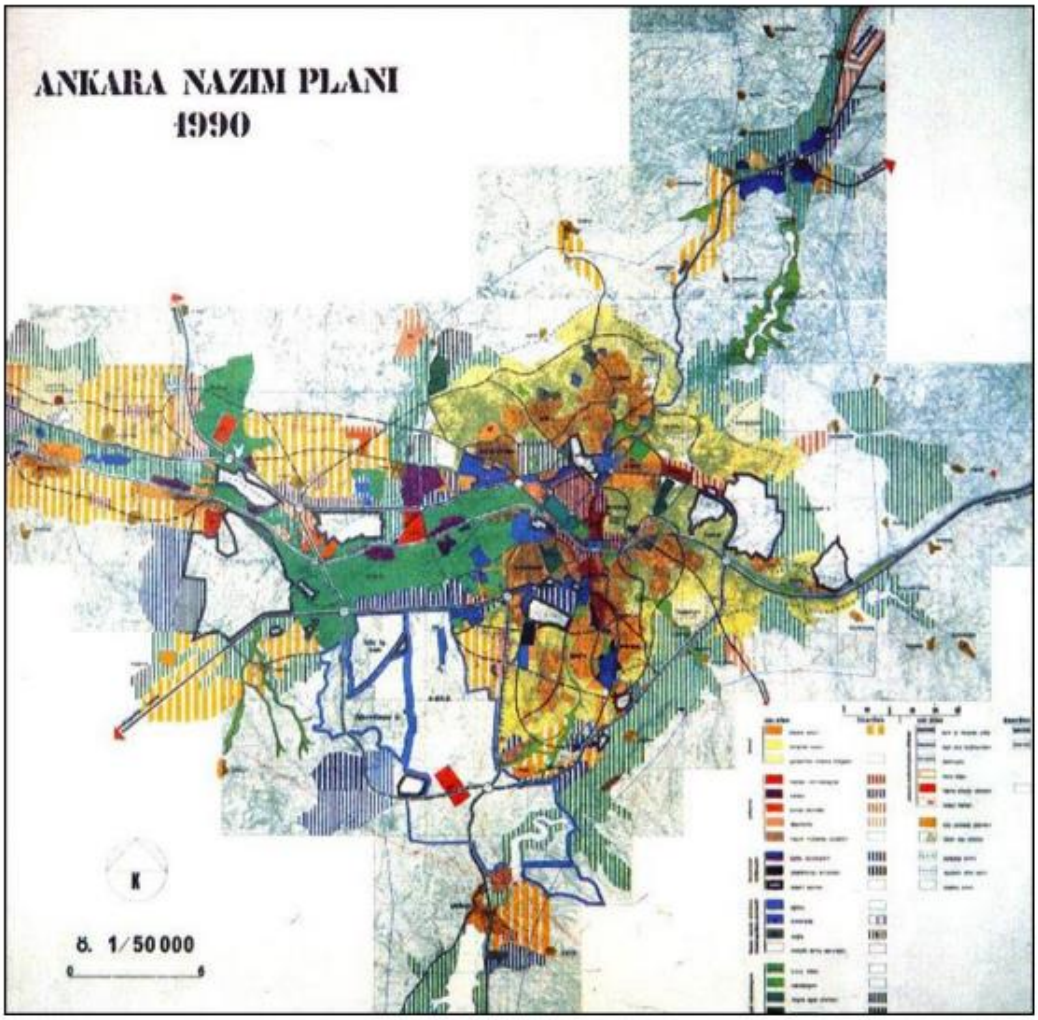


Figure 3.3: 1990 Ankara Master Plan (Source: Ankara Metropolitan Municipality, 2023 Capital Ankara Master Plan Report)

3.2.1 Selection of the Neighborhoods

In this study, two neighborhood was choosen. The first one is İşçi Blokları Neighborhood, and the other one is Çukurambar Neighborhood. The reason for choosing the İşçi Blokları neighborhood is the positive attitudes of the residents towards the students – a point which was experienced by the author as well. The

neighborhood is located next to the Middle East Technical University campus, which the author is affiliated with. Many students live in this neighborhood and established intimate relationships with the locals of the area. For this reason, it was thought that sufficient people would be easily reached in the survey in this neighborhood.

Çukurambar Neighborhood, located next to İşçi Blokları Neighborhood, is a higher density neighborhood. While İşçi Blokları Neighborhood was always a planned neighborhood, a few decades ago Çukurambar was known as a squatter housing area. With the developments along the western corridor of the city in the 1990s, all of the squatter dwellings in Çukurambar were replaced by high-rise residential apartments and office buildings. The physical and social environmental character of Çukurambar Neighborhood was altered that according to a recent unpublished research project conducted in the Middle East Technical University. It was revealed that some of the local residents of İşçi Blokları Neighborhood were afraid of the recent developments that have been taking place in their environments (like a recent highway passing from their neighborhood, the existence of new pubs and gas stations), causing them to think that their neighborhoods are turning into another Çukurambar.

In the study of the sale prices of the residences by Uğurlar and Eceral (2014), Çukurambar and İşçi Blokları Neighborhood were found to be very close (Figure 3.4). The economic determinant, which is described in the literature and is used as a determinant of active aging for this study, was determined by this analysis.

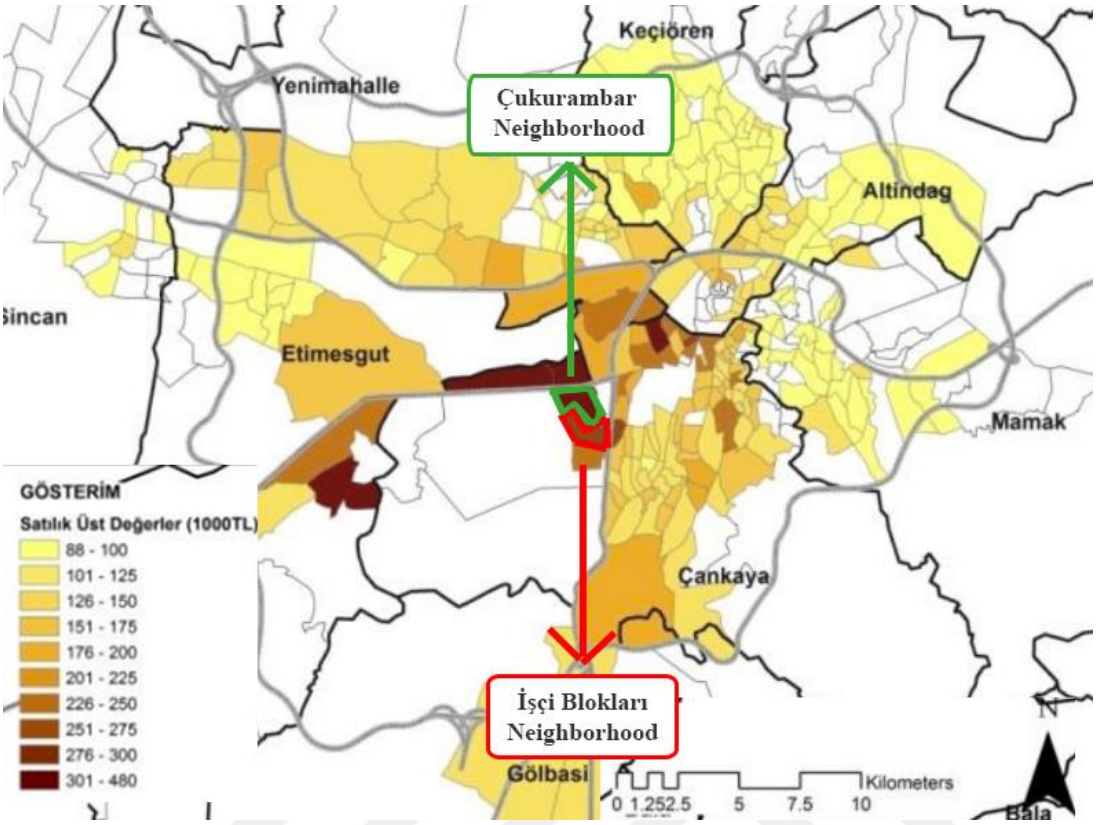


Figure 3.4: Locations of neighborhoods on the map prepared by Uğurlar and Eceral

In addition, the population and traffic density of Çukurambar after the urban transformation are higher than the İşçi Blokları Neighborhood. Besides, a noise map was created in Ankara with the Technical Assistance Project for Implementation Capacity of the Environmental Noise Directive (retrieved from https://www.ankara.bel.tr/duyurular/ankara-buyuksehir-belediyesi-stratejik-gurultu-haritalari-hazirlandi-41). A high-quality image of the workspace which is taken from Google Earth and noise level maps are combined by Adobe Photoshop. According to this map (Figure 3.5), the noise level band in the map of the Çukurambar Neighborhood is higher than that of the İşçi Blokları Neighborhood (Figure 3.6). Traffic density and noise level band map confirm each other. Considering the physical environmental change brought about by the urban transformation of these two neighborhoods, which are also very close to each other

in terms of location, and the other factors mentioned above, these two neighborhoods appear as the study areas of this thesis.

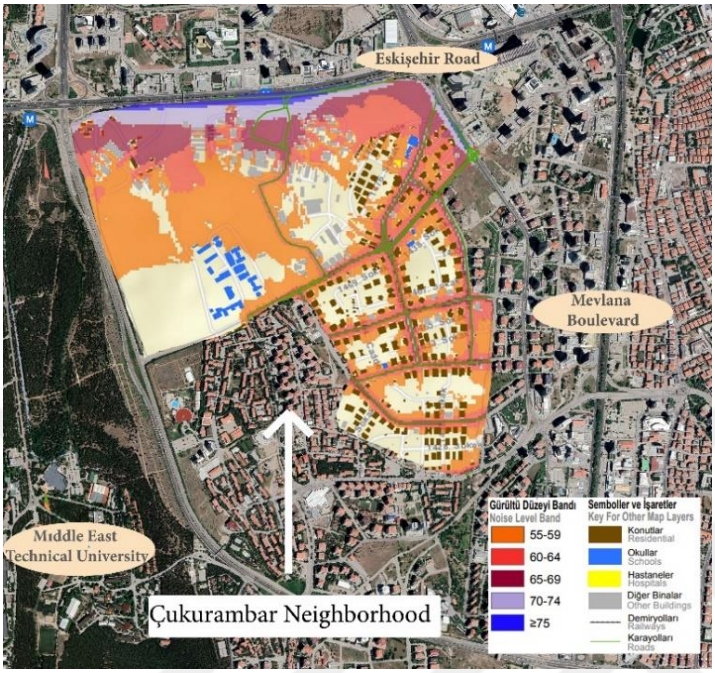


Figure 3.5: Noise level of Çukurambar neighborhood

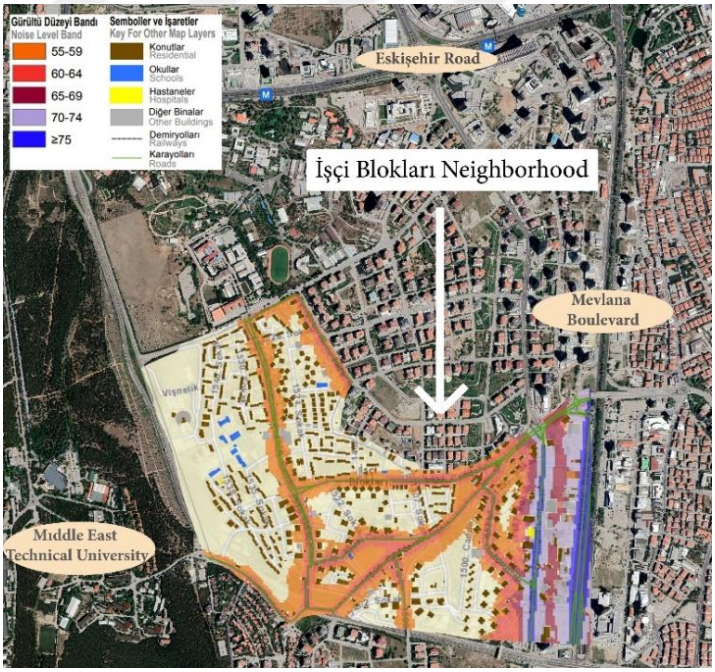


Figure 3.6: Noise level of İşçi Blokları neighborhood

On the high-quality map taken from Google Earth, green areas are marked by Adobe Photoshop. When the public green areas are considered, it is seen that they are generally found in both neighborhoods (Figure 3.7).

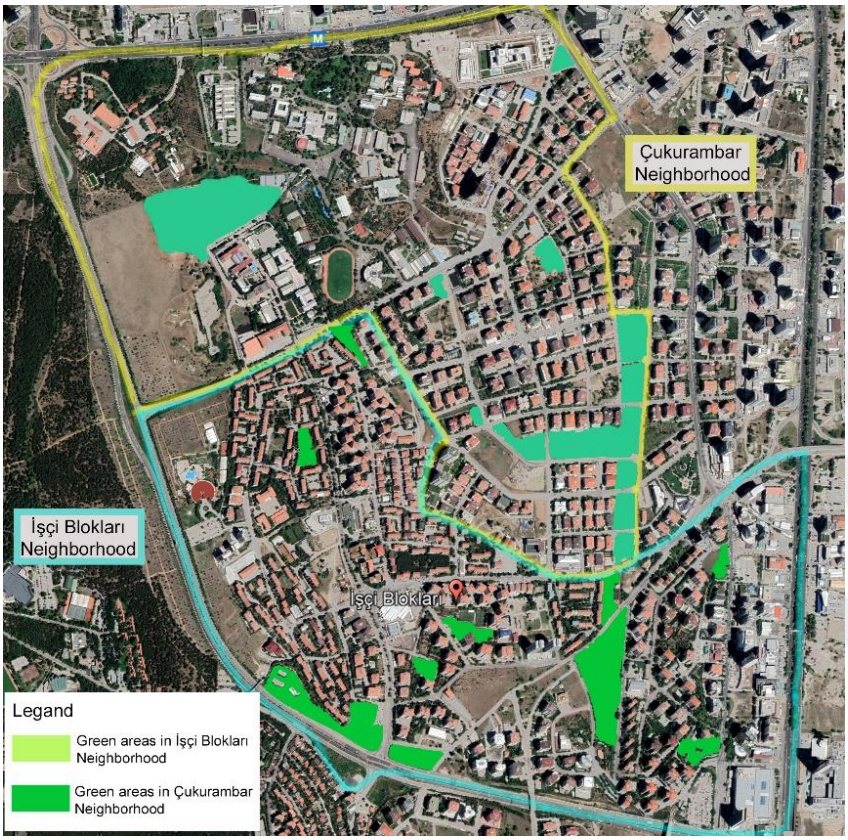


Figure 3.7: Green areas in two neighborhood

3.2.1.1 Çukurambar Neighborhood

Çukurambar is a neighborhood in the Çankaya district of Ankara. Çukurambar consisted of squatter houses (*gecekondu areas*) built by older generation immigrant families who moved from the villages of cities in the Central Anatolia and Black Sea regions. Unlike many other examples, squatter dwellings were built on private rather than public land but were still unlicensed. The critical point in transforming the physical environment of Çukurambar was the state's perception of shantytowns.

From 1948, the state considered squats as a non-urban form of settlement that needed to be improved and transformed. With the acceleration of the migration wave, the increase in the number of immigrants and the expansion of the borders of the squatter settelments, these informal housing areas have turned into a potential source of funds (Akçaoğlu, 2018).

In the post-1980 period, shaped by liberal economic policies, master plans were replaced by rent-oriented transformation projects that ignored the social dimension of squatter housing areas (Akçaoğlu, 2018). Ankara Metropolitan Municipality prepared a new city plan in 1982 that foresees the decentralization of the western axis where Çukurambar is located. Then, in 1984, a master plan was prepared for Çukurambar on a scale of 1/1000, which envisages a lower population density for the neighborhood. However, the Çukurambar master plan, which was revised to a 1/5000 scale in 1993, attracted the attention of the urban transformation sector (Köroğlu & Ercoşkun, 2006). In the following period, the transformation process accelerated. The single-story squatter houses were replaced by multi-story apartment blocks (Akçaoğlu, 2018). Following the implementation of the plans, high-rise building blocks were positioned in the center of each urban plot that has given the constructed environment in Çukurambar a new description (Armatlı Köroğlu & Yalçıner Ercoşkun, 2010). It is mentioned that there were fields around the squatter dwellings in the past in Akçaoğlu's (2018) article. However, there are no fields left now. In addition, the shifting of the city to the west with the plans also caused an increase in traffic and population density in Çukurambar.

According to TUIK's 2022 data, in the Çukurambar neighborhood, the total population is 12,809. While 6,799 of them are women, 6,010 of them are men. In addition, 13.18% of this total population is elderly (65 years and over). In other words, the elderly population is 1,689. Of these, 50.74% are women (857 people) and 49.26% are men (832 people). In other words, both the female population of the total and the female population of the elderly are higher in this neighborhood.

Since the 1:1000 scale land-use map could not be presented for the Çukurambar neighborhood, the characteristics of the neighborhood were explained with a field trip. Considering the current situation of the Çukurambar neighborhood, the center of the neighborhood is gathered around a road. There are all areas where people can meet their needs around 1425. Street. Everything from the hospital to the market, from the pharmacy to the cafes, from ATMs to the high society market is located on this street (Figure 3.8).



Figure 3.8: 1425. Street, Çukurambar Neighborhood

There are lots of high-rise buildings. Elevators are also available in these buildings. In addition, since the Çukurambar neighborhood is close to the Islamic political party building, there is an Islamic view in the designs of the buildings and the use of the space by people (gender-sensitive view). Social life between apartments is more active in this neighborhood, and those who want to learn more about this can refer to Ayşe Çavdar's article 'Building, Marketing and Living in an Islamic Gated Community'. In addition, due to the Islamic view, the names of some cafes reflect the Ottoman culture (Beyoğlu Halimbey, Hüdaverdi, etc.).

There are lots of slopes in the neighborhood. As seen in the field trip made by the author, in some places the continuation of the roads could not be seen at all due to the slope (Figure 3.9).



Figure 3.9: Slopes in Çukurambar neighborhood

3.2.1.2 İşçi Blokları Neighborhood

İşçi Blokları is a neighborhood in the Çankaya district of Ankara province. Here it is important to note that this neighborhood is also called 100. Yıl Neighborhood in several studies and in the public sphere (see, e.g., Cihanger, 2018; Reyhan, 2022), even though 100. Yıl Neighborhood and İşçi Blokları are two different neighborhoods located in different parts of the city. The İşçi Blokları neighborhood, which was far from the city center when it was built and located to the east of the METU campus, has provided shelter to many people, especially low-income

working families and METU students. The neighborhood was originally built for the worker class families in a planned manner, as the name of the neighborhood derived from (*işçi*: worker; *işçi blokları*: worker's apartment blocks). There are social buildings such as bazaars, Çankaya house, and green areas consisting of parks and gardens in the neighborhood (Köse, 2013). The İşçi Blokları neighborhood is surrounded by Mevlana and Malazgirt Boulevards, the METU campus and the Çukurambar neighborhood, where urban transformation is taking place.

According to TUIK's 2022 data, the total population of the İşçi Blokları neighborhood is 16,649. 52.23% of them are women (8,697 people). In addition, 18.20% of the total population is older people. The elderly population (people aged 65 and over) is 3,031 and 58% of the elderly are older women. In other words, the population of older women is 1,758 and the population of older men is 1,273.

In the İşçi Blokları neighborhood, a center is right in the middle of the neighborhood (Figure 3.10). This center is not on a main road as in the Çukurambar neighborhood. This field allows interaction. In this area, there are many things from markets to bazaar, from ATM's to mukhtar office and cafes to Çankaya house.

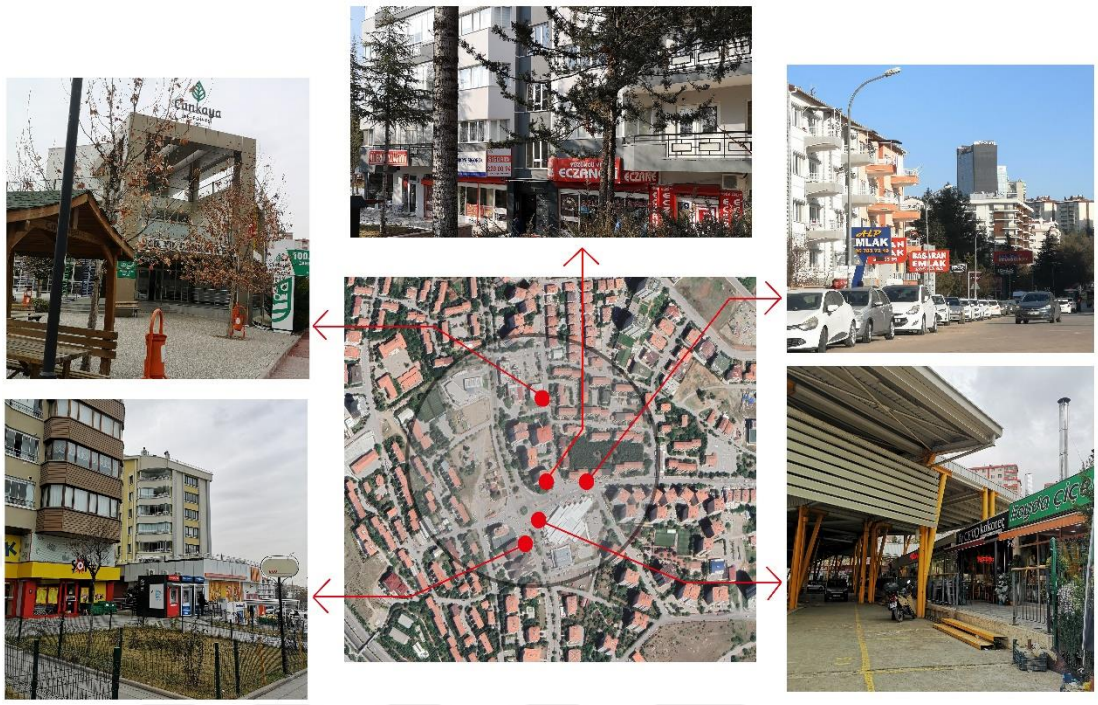


Figure 3.10: Center of İşçi Blokları Neighborhood

Çukurambar neighborhood is located in the north of the İşçi Blokları. Compared to the Çukurambar neighborhood, there are low-floor apartments. In addition, since it is not close to Eskişehir road and the center, the traffic density is less than Çukurambar.

On the map below, the western side of the line marked in yellow is the İşçi Blokları neighborhood, while the eastern side is the Çukurambar neighborhood. There are pictures from the intersection of these two neighborhoods (Figure 3.11). Accordingly, while the buildings in the Çukurambar neighborhood are high-rise, there are lower-rise buildings in the İşçi Blokları neighborhood. 4-storey apartments are seen next to at least 20-storey buildings which can be understood much more clearly from the A4 photo.



Figure 3.11: Situations at the intersection of both neighborhoods

Since this neighborhood is very close to Middle East Technical University (METU) campus, the residents are extra helpful toward the students of this school. Since the author is also a METU student and a survey was conducted in this study, it was thought that the participant could be easily reached in this neighborhood. In short, in this neighborhood, the older women who can be reached for the survey are most likely to be found. This is the most significant factor in choosing the neighborhood in addition to its positive physical environmental attributes.

3.3 Selection of the Participants

The elderly are a vulnerable and sensitive group. They may be reluctant to participate in such research due to fear of crime. For this reason, the participants were selected

through the researcher's accessible network, and as mentioned in the previous title, the İşçi Blokları Neighborhood was the first chosen neighborhood for this reason.

The study was carried out under the conditions of the Covid-19 Pandemic, included women aged 65 and over, living in these two neighborhoods in Ankara, able to carry out daily activities and not confined to bed. Those who met the above criteria were included in the study.

The older women included in the study were reached on the streets and in their cultural activity areas. When selecting the participants from the street context, the author preferred to approach those who seemed to go somewhere or went for a walk. The surveys, made in cultural activity areas were carried out at the Turkish Classical Music Choir and Çankaya Evi (which was the community center located in the center of the neighborhood). However, most of the older women who were invited to participate in this study did not want to be part of the research. Only those who were interested were involved in the study. A consent form was prepared for the voluntary participation of the participants in the research, and their consent was obtained before starting the research.

The participants were informed that this research was carried out for scientific purposes, their personal identity information and address information would be kept confidential, the results would be used entirely for scientific purposes, and that they could leave the research any time they wished.

A quota sampling was used in the selection of the participants. Twelve people were reached from both neighborhoods; a total of 24 older women participated in the research from the two chosen neighborhoods. In case the author obtained missing information from the participants (like in case the respondents did not respond some of the questions during the data collection process), the chosen neighborhoods were revisited, and the data collection process was repeated to fill the quota.

3.4 Data Collection

The author prepared a survey based on the literature reviewed in Chapter 2 regarding the accessibility-related physical environmental factors that may affect older women's active aging. Survey questions were created with the determinants of active aging and the themes of the age-friendly city which affect the status of active aging. In addition, the inputs for creating the questions can also be understood from the socio-ecological conceptual diagram in Figure 2.9. The survey included questions about the width and height of sidewalks and stairs, connection of pedestrian paths, traffic density, presence of green areas, presence of socio-cultural areas, presence of pedestrian crossings and presence of lighting. It also included questions about the assessment of the neighborhoods where the respondents lived and whether they find the accessibility of the facilities appropriate regarding their age-related needs and demands. Issues related to independence, health and social participation were included in the question sets, as they also were highlighted in Chapter 2. The survey included mainly open-ended questions and a few Likert scale questions to quantitatively compare the physical environmental qualities of the two neighborhoods with regard to their potential to promote older women's active aging (please see the questions and the structure of the questionnaire in Appendix A).

A pilot study of the prepared questionnaire was conducted before the initiation of the field work. The aim of the pilot study was to obtain information about the clarity of the questions and whether the appropriate results will be obtained. During the pilot study, the content of the questions in the questionnaire was arranged. Studies done in Turkey and abroad were examined. In this study, based on the effect of accessibility on the active aging approach, questions related to some subjects were formed. These issues are generally related to independent, healthy, safe living and social participation.

The author administered the survey in a face-to-face interview process. When the respondents answered the questions in a "yes or no" format or provided very short

answers that does not inform the author, the author asked the respondents to elaborate on their responses for an in-depth understanding of the factors affecting their active aging. In addition, in cases where the older women had difficulty understanding the question, the questions were detailed with examples without introducing a researcher bias.

Older women walking from one place to another were chosen. The author stopped these participants, first introduced herself and then asked them to help with her survey. Furthermore, since this study was conducted in the neighborhood, it was challenging that there was an outbreak of COVID-19 and the study coincided with winter. Many older women did not want to spend time outside in the cold weather for the survey. In addition, they were reluctant to invite the author into their homes. It was offered to go to the cafe to solve this problem and one of the participants accepted it. The other older women who did not accept doing the survey said such as 'I do not have time, unfortunately' and 'I do not live in this neighborhood. I am a guest'. In addition, although the older women were told that this survey could be done whenever and wherever they wanted, only one older woman in İşçi Blokları accepted it.

It took 14 days to conduct the surveys. To ensure fairness, all surveys were conducted for one week in both neighborhoods. Since the times of the district bazaar, events, etc., of each neighborhood may be different, firstly, a survey was conducted in the Çukurambar neighborhood between Monday and Sunday, and then a survey was conducted from Monday to Sunday in the İşçi Blokları neighborhood.

A survey was conducted with 12 people in both neighborhoods. The reason for conducting the same number of surveys is to increase the accuracy of the study with equal participation. In addition, a survey was conducted with 10 participants in the Çukurambar neighborhood and 11 participants in the İşçi Blokları neighborhood, in the open air and standing. The last person in the İşçi Blokları neighborhood wanted to sit in the cafe and do the survey. Therefore, a coffee shop closest to the participant

and author was selected at that moment and a survey was conducted. In the Çukurambar neighborhood, a survey was conducted with the other two participants sitting on a bench in the open air. These two people who sit on a bench (urban furniture) near the mukhtar office and know each other were surveyed in the same place and sequence. However, after the first person's survey, the second person's responses were somewhat similar as she heard the first person's responses.

During the surveys, the author took notes under each question by hand. In addition, with the participants' permission, the answers were recorded with audio recording. If the answer given to a question could not be written completely by the author, it is aimed to listen to these audio recordings. This is because, in the first pilot survey, the author could not take full notes of what an older woman said and asked the older woman to repeat this answer. However, the participant did not give the same answer to the same question. That is, she gave incomplete answers. In order to prevent this, it was decided to take a sound recording. All the participants accepted the audio recording even though they were hesitant at first.

The questionnaire was administered exactly in the same structure. The order of the questions did not change according to the answers of the participants. In addition, personal information was left at the end of the questions, and questions about urban facilities were addressed first. Answering the survey questions took an average of 10 or 15 minutes. However, interviews with older women with regression in their hearing or perception functions lasted for 20 minutes because the questionnaires were conducted through face-to-face interviews.

Finally, during these 14 days of the survey, a field trip was made on foot to understand both neighborhoods better. The author took photographs of the physical environment elements asked in the questionnaire, especially problem areas.

3.5 Data Analysis

Analyzing the collected results is important for the success of the study. Using appropriate analysis methods also helps reach the findings of the research results. The analysis of a qualitative research done by going to the field requires a method. Qualitative data were analyzed using charts and computer graphics.

After collecting the data, the author first transferred them to word to recover from the handwriting, then transferred them to excel. After all, the data were transferred to excel, open-ended questions were analyzed here. The necessary tables for each participant, separately but in a combined way, were also made here. In the Likert chart questions, digitization was made both neighborhoods. In addition, in the likert-chart question, which is related to the desire for aging, digitization was made and the neighborhoods were compared.

In this study, parametric tests were used on the data that had been obtained. Parametric tests make assumptions about the underlying population (n=24 for this study) from which research data are emerged. The reason of this, non-parametric tests, according to Sullivan and Artino (2013: 541-542), are less forceful than parametric testing. Additionally, in order to have the same power as parametric tests to detect a difference between groups, non-parametric tests frequently need a larger sample size (n-value). While making this comparison, the t-test, which is one of the parametric tests, was used. This application was made on https://www.graphpad.com/quickcalcs/ttest1.cfm site. An unpaired t-test method was performed.

As a result, accessibility is more related to the physical environment, except for sociodemographic, behavioral, and social determinants (Figure 2.9). This chapter aims to show the reader how the accessibility of the physical environment affects the active aging of older women. In this context, factors affecting accessibility within the scope of the physical environment are presented. By asking these factors in the

questionnaire, the differences between both the İşçi Blokları neighborhood and the Çukurambar neighborhood were measured.

CHAPTER 4

RESULT

This section presents the results of the research. The section is organized under three main headings: The characteristics of the survey participants, the role of the accessibility of neighborhood facilities in promoting the active aging of older women, and the the opportunities and barriers to the accessibility of these facilities.

4.1 General Characteristics of the Survey Participants

All participants who participated in the interviews were over the age of 65. All of them were living in the neighborhood where the survey was conducted. Furthermore, all of them were spending time in their neighborhood open spaces as the author found all the participants while walking around the neighborhood.

After the questions about the physical environment, the participants were asked about their education, work, and general health status. According to the answers given, no one does not have an education background in the Çukurambar and İşçi Blokları neighborhood. The educational status of the people surveyed in both neighborhoods is also close (Table 4.1).

Table 4.1: Educational Status

	No educational background	Elementary school	Secondary school	High school	University /College and above
Çukurambar	0	33.3%	0	25%	41.7%
İşçi Blokları	0	41.7%	8.3%	8.3%	41.7%

Considering their employment status, two participants are retired and still working in the Çukurambar neighborhood, while there are no retired and still working participants in the İşçi Blokları neighborhood. In addition, one participant in the İşçi Blokları neighborhood never worked (Table 4.2).

Table 4.2: Employment status

	Employed	Unemployed	Retired	Retired and still employed
Çukurambar	0	33.3%	50%	16.7%
İşçi Blokları	8.3%	41.7%	50%	0

Considering the general health conditions, no one is in bad health in both neighborhood (Table 4.3).

Table 4.3: Health situation

	Very good	Good	Average	Bad	Very bad
Çukurambar	0	66.7%	33.3%	0	0
İşçi Blokları	0	75%	25%	0	0

4.1.1 Health Problems and Time Spent Outside

While 41.7% of participants experienced health problems while using the areas outside of their homes in the İşçi Blokları neighborhood, 50% of participants in the Çukurambar neighborhood had this situation.

According to the results obtained from the interview held in the İşçi Blokları neighborhood, older women mentioned that they spend 2 hours on weekdays and 3 hours on weekends in areas outside of their homes in the neighborhood. However, as Table 4.4 illustrates, in this neighborhood, five participants (Participants 2, 4, 8, 10 and 12) (41.7% of participants) with health problems that affect them to go out said that they go out for 1 or 2 hours.

According to the results obtained from the interview held in Çukurambar neighborhood, older women mentioned that they spend 2 hours in areas outside of their homes in the neighborhood, both on weekdays and on weekends. However, in this neighborhood, six participants (50% of participant) (Participants 2, 4, 5, 8, 9 and 12) with health problems that affect them when they go out said that they go out for 1 or 2 hours (Table 4.4).

Table 4.4: Time spent in areas outside of their homes in the neighborhood (in hours)

Neighborhood	**In hours**		**Neighborhood**	**In hours**	
İşçi Blokları	**Weekday**	**Weekend**	**Çukurambar**	**Weekday**	**Weekend**
Participant 1	8	5	Participant 1	7	2
Participant 2	1	3	Participant 2	1	2
Participant 3	1	2	Participant 3	7	5
Participant 4	1	1	Participant 4	2	2
Participant 5	4	6	Participant 5	2	3
Participant 6	1	1	Participant 6	2	4
Participant 7	2	4	Participant 7	2	4
Participant 8	1	1	Participant 8	1	1
Participant 9	2	5	Participant 9	2	2
Participant 10	1	2	Participant 10	2	4
Participant 11	4	6	Participant 11	2	3
Participant 12	1	1	Participant 12	1	1
Average	2,25	3,083	Average	2,583	2,75

4.2 The Role of the Accessibility of Neighborhood Facilities in Promoting the Active Aging of Older Women

In this topic, the participants were asked about the places they accessed outside of their homes in the neighborhood. It was asked whether she went there alone or with the help of someone, and if she went with help, the reason for this was asked. In addition, it was examined by asking how they got there and whether they were easy to access. Finally, the places they use the least and the places they want to be more accessible in the neighborhood are discussed.

4.2.1. Use of Places Outside the Homes in the Neighborhood: Place Types, Need of an Assistance to Commute and Walking Attitudes

Markets, district bazaars, health centers, parks, green areas, relatives' homes, kindergartens, and banks were generally mentioned as the places visited outside the participants' home in both neighborhoods (Table 4.5 and Table 4.6). Markets, relatives' houses, banks, and green areas were mentioned the most both neighborhoods.

In the Çukurambar neighborhood, out of 12 participants, 8 participants (67%) mentioned the market, 6 participants (50%) mentioned green space, 4 participants (33%) mentioned children's house, and 5 participants (42%) mentioned the bank (Figure 4.1).

In addition, some of the 12 participants said she went to two places, while others said that she went to four places. In other words, 38 answers were mentioned in total in the Çukurambar neighborhood. The percentages of the answers are taken and shown in Figure 4.2. According to these, out of the 38 answers given in this neighborhood, approximately 21% are markets, 16% are green spaces, 10% are their children's homes, and 13% are banks.

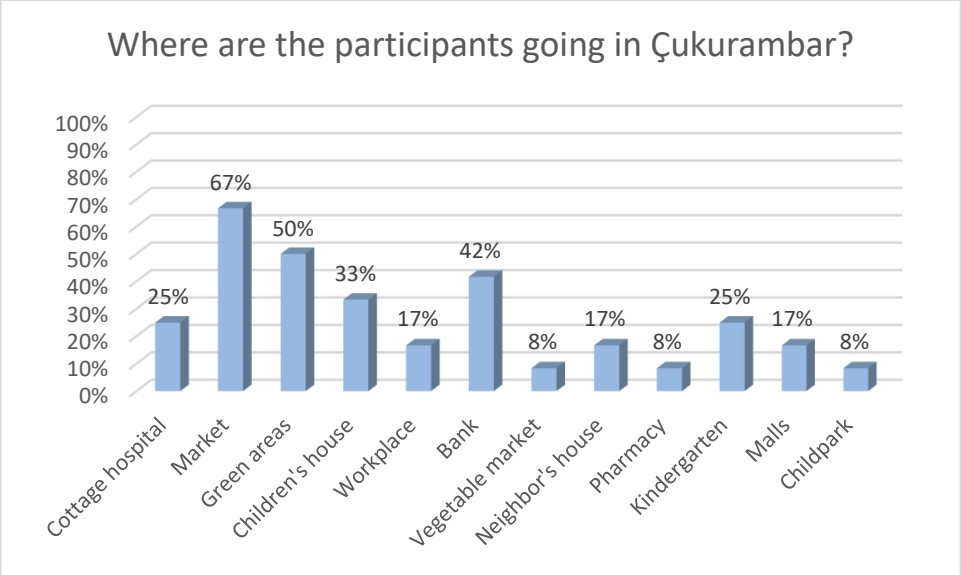


Figure 4.1: Areas used by the participants in Çukurambar as a percentage

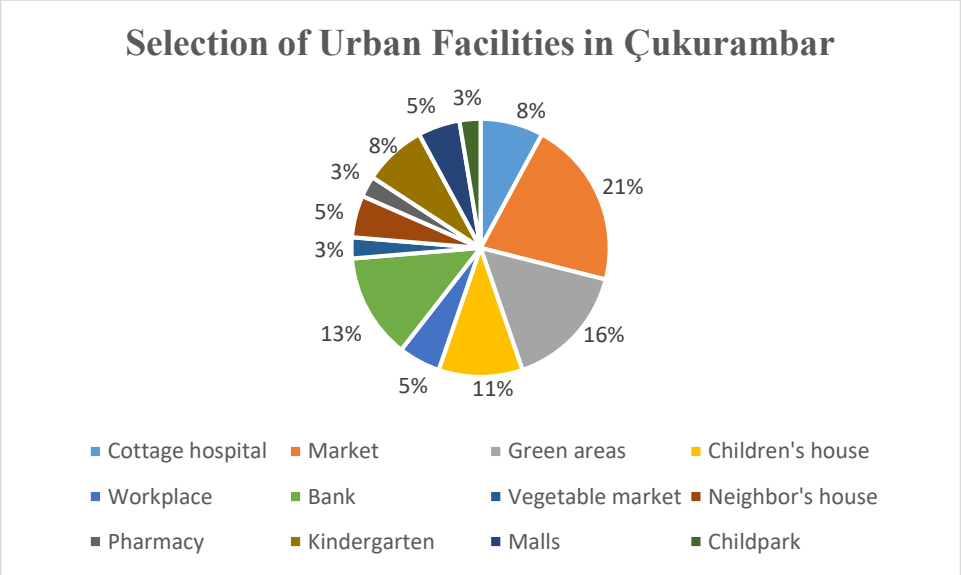


Figure 4.2: Selection of Urban Facilities in Çukurambar

In addition, three places (malls, workplaces, and neighbor's houses) that were said in the Çukurambar neighborhood were not said by participants in İşçi Blokları neighborhood. However, unlike the Çukurambar neighborhood, in this neighborhood, hospitals, Çankaya house and cafes are mentioned by participants.

In the İşçi Blokları neighborhood, out of 12 participants, 7 participants (58%) said markets, 5 participants (42%) said district bazaar and 6 participants (50%) said banks. In addition, in this neighborhood, 3 participants (25%) mentioned Çankaya house (Figure 4.3). This place is mentioned separately because it is said by participants especially as a cultural activity area, compared to the Çukurambar neighborhood.

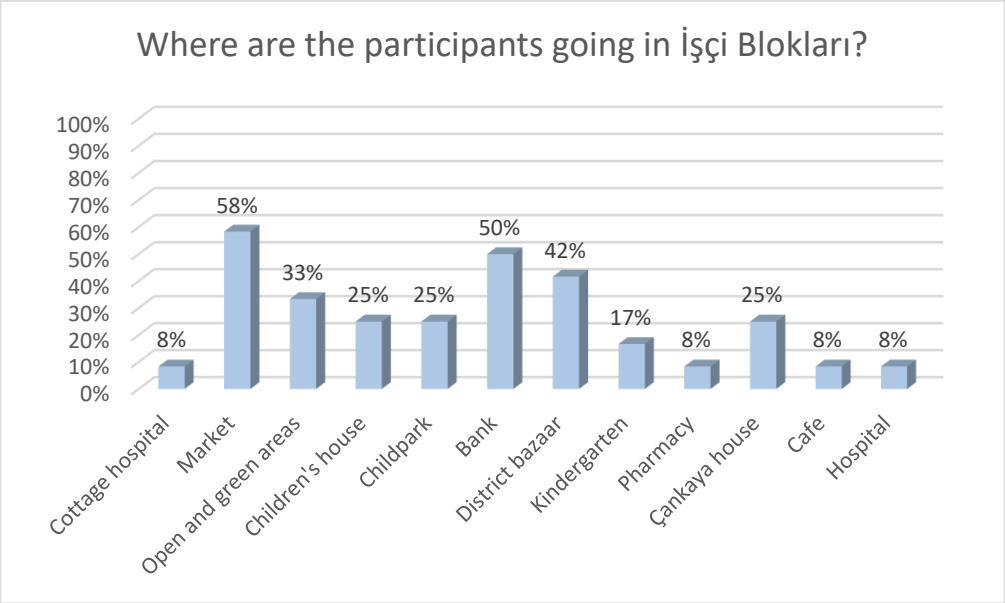


Figure 4.3: Areas used by the participants İn İşçi blokları as a percentage

Also, in this neighborhood, some of the 12 participants said she went to two places, while others said that she went to four places. In other words, 37 answers were mentioned in total in the İşçi Blokları neighborhood. The percentages of the answers are taken and shown in Figure 4.4. According to these, out of the 37 answers given in this neighborhood, approximately 19% are markets, 11% are green spaces, 14% are district bazaar, and 16% are banks.

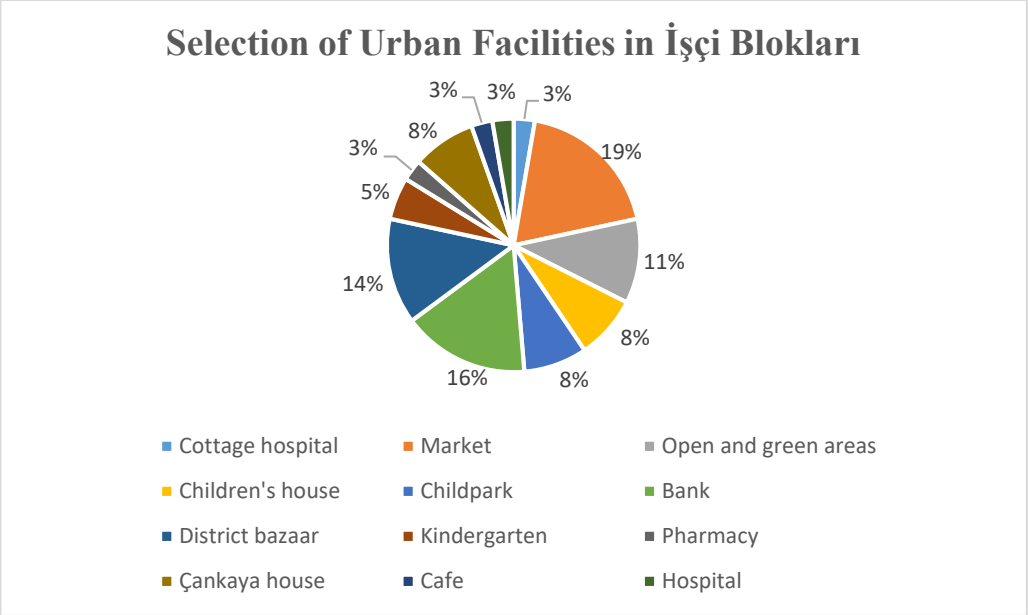


Figure 4.4: Selection of Urban Facilities in İşçi Blokları

In the Çukurambar neighborhood, 25% of the participants stated they needed of assistance to use the areas of outside their homes. All of them are participants who have health problems while using areas outside of their homes (Participants 2, 5 and 8). In addition, in the İşçi Blokları neighborhood, 33% of participants (Participants 2, 4, 10 and 12) expressed that they needed someone with them to use all the areas outside of their homes. Three of them (Participants 2, 4 and 12) are participants who have health problems while using areas outside of their homes. All three participants expressed their preference to use a car to access neighborhood facilities.

The reasons stated by participants, who need assistance when they go out in the İşçi Blokları neighborhood, were the health problems they had and the problems of the pavement and paving stones. They added that their neighborhood does not have walkable roads. They also stated that cars are parked on the sidewalks (Figure 4.23) and electricity pylons are in the sidewalks' middle (Figure 4.17). In addition, the reasons stated by participants who need help when they go out in the Çukurambar neighborhood are concerned about the health problems they had ad the crowding of the main roads and the long distance of places to go.

Table 4.5: The places participants use in Çukurambar neighborhood, whether someone accompanies them to access to these places and the mode of transport they use to commute

Çukurambar	Where?				Does she go herself or with help?
Participant 1	Market	Pharmacy	Children's house	Workplace	Herself
Participant 2	Market	Child Park	Bank	-	Market: herself others: with help
Participant 3	District bazaars	Green areas	Children's house	Workplace	Herself
Participant 4	Market	Green areas	Cottage hospital	-	Herself
Participant 5	Bank	Green areas	Neighbor's house	-	With help
Participant 6	Market	Green areas	Malls	-	Herself
Participant 7	Market	Green areas	Children's house	Kindergarten	Herself
Participant 8	Bank	Cottage hospital	-	-	With help
Participant 9	Market	Bank	Kindergarten	-	Herself
Participant 10	Market	Kindergarten	-	-	Herself
Participant 11	Market	Cottage hospital	Malls	Bank	Herself
Participant 12	Green areas	Children's house	Neighbor's house	-	Herself

Çukurambar	How?	If she is not walking, what is the reason?	Access status
Participant 1	By car	I can't walk there because it's far	Easy
Participant 2	Bank: By car others: by walking	Main streets are really crowded and cars make me nervous.	Difficult
Participant 3	Workplace: By car others: by walking	My workplace is far away, I don't want to walk	Easy
Participant 4	By car or bus	I can't walk there because it's far and there are lots of cars.	Difficult
Participant 5	Bank: By car others: by walking	The bank is far from my house. Walkable and safe roads are not found everywhere.	Easy
Participant 6	By walking, sometimes by car	If I'm going to buy a lot of things from the market, I go by car.	Easy
Participant 7	By walking	-	Easy
Participant 8	By car	If I walk to distance locations, I get tired immediately	Difficult
Participant 9	By walking, sometimes by car	I sometimes drive in the evenings because I can't see the potholes.	Easy
Participant 10	By walking	-	Easy
Participant 11	By walking	-	Easy
Participant 12	By walking	-	Easy

Table 4.6: The places participants use in İşçi Blokları neighborhood, whether someone accompanies them to access to these places and the mode of transport they use to commute

İşçi Blokları	**Where?**				**Does she go herself or with help?**
Participant 1	District bazaars	Green areas	Hospital	Kindergarten	Herself
Participant 2	Market	Bank	Pharmacy	Çankaya house	With help
Participant 3	District bazaars	Child Park	Children's house	-	Herself
Participant 4	District bazaars	Children's house	-	-	With help
Participant 5	Market	Green areas	Bank	Kindergarten	Herself
Participant 6	Market	District bazaars	Cottage hospital	-	Herself
Participant 7	Market	Child Park	Çankaya house	-	Herself
Participant 8	Child Park	Bank	-	-	Herself
Participant 9	Market	Green areas	Çankaya house	-	Herself
Participant 10	District bazaars	Bank	Children's house	-	Bank: with help Others: Herself
Participant 11	Market	Green areas	Bank	Cafe	Herself
Participant 12	Market	Bank	-	-	With help

İşçi Blokları	How?	If she is not walking, what is the reason?	Access status
Participant 1	Green areas: by walking and others: by car	The hospital and the market are very far away, and it is difficult to walk with my grandson, whom I usually go with. My grandson is afraid of dogs and there are not many walkable roads.	Easy
Participant 2	By car	These are far away for me. Sidewalks are sometimes very narrow and bad, I don't prefer them.	Difficult
Participant 3	By walking	-	Easy
Participant 4	By car	There are too many dogs and I am afraid.	Difficult
Participant 5	By walking	-	Easy
Participant 6	By walking, sometimes by car	Sidewalks are sometimes very narrow and there are problems with the stones of the sidewalks. When I am sick or carry heavy things, it is not easy to walk through such places. Also, dogs are too many and they sometimes attack.	Easy
Participant 7	By walking	-	Easy
Participant 8	By car	I don't want to walk, there aren't enough benches to sit on and I get tired easily.	Difficult
Participant 9	By walking	-	Easy
Participant 10	By walking	-	Easy
Participant 11	By walking	-	Easy
Participant 12	By car	It is not a walkable enough neighborhood for me. The sidewalks are very tricky. People park their cars everywhere, including the sidewalk. In the middle of the sidewalks, suddenly a pole comes out.	Difficult

While there were eight participants (66% of participant) who were always or sometimes prefering to drive to commute from one place to another in the Çukurambar neighborhood, there were six participants (50% of participant) in the İşçi blokları neighborhood (Figure 4.3). Five of these eight participants in the Çukurambar neighborhood and four of the six participants in the İşçi Blokları neighborhood have health problems when they go outside of their homes in the neighborhood. In other words, the majority of the participants, who need help when they go out, have health problems. In addition, in the İşçi Blokları neighborhood, the reason for the participants who do not have health problems when they go out in their neighborhood is the lack of walkable streets, while the reason for those in Çukurambar neighborhood is that their destination is too far. Furthermore, 8.3% of participants in İşçi Blokları neighborhood preferred the car because they are exhausted when walking and they has difficulty finding a bench. So even if people are healthy, they don't prefer to walk because of long distance, insufficient benches and problematic street designs. In addition, all of those who said that access was difficult in both the İşçi Blokları neighborhood and the Çukurambar neighborhood preferred to drive instead of walking.

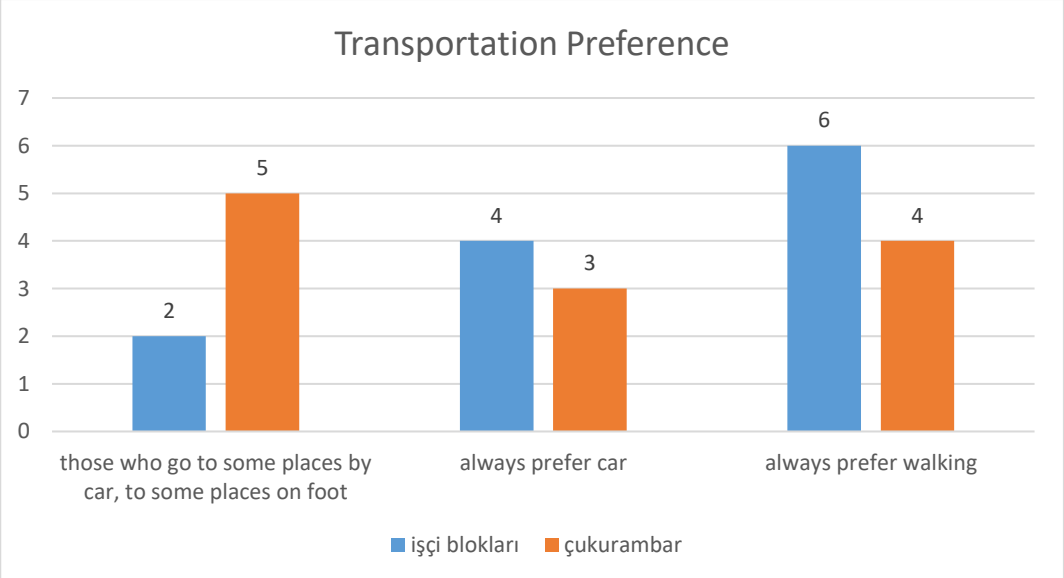


Figure 4.5: Transportation preference in both neighborhoods

4.2.2. Urban Areas that are Rarely Visited in Their Neighborhoods and The Participants Expectations Regarding the Accessibility of Neighborhood Facilities

Participants in both neighborhoods were asked about the places they want to go but cannot go to or rarely visit in their neighborhoods and the reasons for this. In the İşçi Blokları neighborhood, 58.3% of participants said that they have no such rarely visited places in the neighborhood. However, 25% of participants (3 participants) said, 'I cannot go to large green areas because it is too far and does not consist of walkable roads.'. According to this answer, green areas are seen as difficult to access. Finally, one participant said that she rarely goes to Çankaya home because it was allocated to students. However, the problem mentioned in this answer is not about accessibility. It is a functional problem of space.

In the Çukurambar neighborhood, 75% of participants answered that there no such rarely visited places. 16.6% of participants said they rarely go to the shops/stores. Their reasons are that these places are crowded and there are lots of cars.

Participants in both neighborhoods were told that people of all ages have different expectations from their surroundings. They were asked to think about the needs of their age. Afterward, they were asked about the places that they said would be better in their neighborhoods. It was asked to explain what kind of places they would like to be more accessible and why. A person can have multiple requests. For this reason, the numbers to be said in this title are not be taken as persons but as comments.

There were two comments that the gardens of the tea houses in the İşçi Blokları neighborhood should be accessible. On the field trip, it was observed that such gardens were concentrated only in a certain area and it was observed that there were not enough in near the 100. Yıl park. Furthermore, in the İşçi blokları neighborhood, three comments are about the lack of municipal facilities and social activity areas, and four comments are about the lack of enough accessible green areas in the neighborhood. In addition to the lack of social activity areas, six comments indicate

that the 'bahar evi' -- a facility that serves the needs of the elderly – in Çankaya house (the community center) needs to increase. The author argues that the fact that this area was recently allocated to the needs of the students by the municipality might have caused such comments. Finally, four participants (33.3% of participants) said that this neighborhood has everything, so there is no need for anything.

In the Çukurambar neighborhood, most of the participants indicated to want a facility like the Çankaya house in İşçi Blokları Neighborhood. For this reason, seven comments suggested there should be a readily accessible social and cultural facility like Çankaya house. There were three comments stating that the accessible green space should be increased and two comments were received that accessible conference and concert halls are needed. Finally, three participants (25% of participants) said that there is everything in this neighborhood, so there is no need for anything else.

In both neighborhoods, the less visited/used areas and the areas that they said would be better in their neighborhoods were compared. According to this, while the majority of the participants (75%) in the Çukurambar neighborhood said that there is no place where they want to go but cannot go or rarely visit, at the same time, the number of comments about areas/facilities that participants wanted in their neighborhood was higher than the number of comments in the İşçi blokları neighborhood. This illustrates the problem of accessibility to the neighborhood facilities in the Çukurambar neighborhood. To sum up, the situation of the long-distance of some neighborhood facilities in the Çukurambar neighborhood, which is also mentioned in the survey results, appears as a solution in the question of the desired areas/facilities.

4.3 Opportunities and Barriers to the Accessibility of Neighborhood Facilities

In this section, firstly, the answers to 15 questions in 3-point likert form, which include the adequacy and conditions of physical environment elements, are examined. In some questions, field trip observations are also included where necessary. Then, it is explained whether they are harmed by these physical environmental elements and whether they want to age in their neighborhoods (5-point likert scale).

4.3.1 Conditions of the Physical Environment

In this section, a 15-question survey was conducted and a 3 point likert scale was used to rate it. According to the questions asked, the older women were asked to give one of the answers "Yes", "No" or "Partly". The questions asked are related to the characteristics of the physical environment. These questions and proportional value of answers are shown in Table 4.7

Table 4.7: The general proportions of the answers given by the participants

	Questions	**İşçi Blokları**			**Çukurambar**		
		Yes	No	Partly	Yes	No	Partly
8	**Are there enough street signs to guide you in your neighborhood?**	100%	-	-	100%	-	-
9	**Are street lightings sufficient in your neighborhood?**	75%	-	25%	83.4 %	-	16.6%
10	**Is environmental cleanliness sufficient in your neighborhood?**	50%	-	50%	66.7 %	-	33.3%
11	**Can you easily reach the bus stops in your neighborhood?**	91.7 %	-	8.3%	100%	-	-

12	**Are accessible green spaces and recreation areas sufficient in your neighborhood?**	58.3 %	-	41.7 %	83.4 %	-	16.6%
13	**Are benches or places to rest enough to be protected from the sun and/or wind in your neighborhood?**	16.6 %	41.7 %	41.7 %	25%	25%	50%
14	**Does your neighborhood consist of walkable streets?**	58.3 %	8.3%	33.3 %	75%	-	25%
15	**Are the walking paths in the park/green areas or on the roadside sufficient in your neighborhood?**	41.7 %	25%	33.3 %	91.7 %	-	8.3%
16	**Are the walking paths in the park/green areas or on the roadside safe in your neighborhood?**	50%	8.3%	41.7 %	66.7 %	-	33.3%
17	**Are the width and height of the sidewalks sufficient in your neighborhood?**	33.3 %	8.3%	58.3 %	91.7 %	-	8.3%
18	**Are the sidewalks in your neighborhood durable and safe?**	41.7 %	-	58.3 %	83.4 %	-	16.6%
19	**If there are stairs in your neighborhood, are their width and height sufficient?**	-	-	-	16.6 %	-	-
20	**If there are stairs in your neighborhood, are they durable and safe?**	-	-		16.6 %	-	-
21	**Do you cross the street easily in your neighborhood?**	66.7 %	-	33.3 %	58.3 %	-	41.7%

22	**Are there areas for courses, concerts and similar events in your neighborhood?**	83.4 %	-	16.6 %	16.6 %	58.3 %	25%

Sufficiency of the Street Signs and Lightings

According to the surveys, it is seen that there are sufficient street signs in both neighborhoods. In street lighting, 16.6% of participants (two participants) in the Çukurambar neighborhood and 25% of participants (three participants) in the İşçi Blokları neighborhood said that it was partially sufficient (Table 4.7 & Figure 4.6).

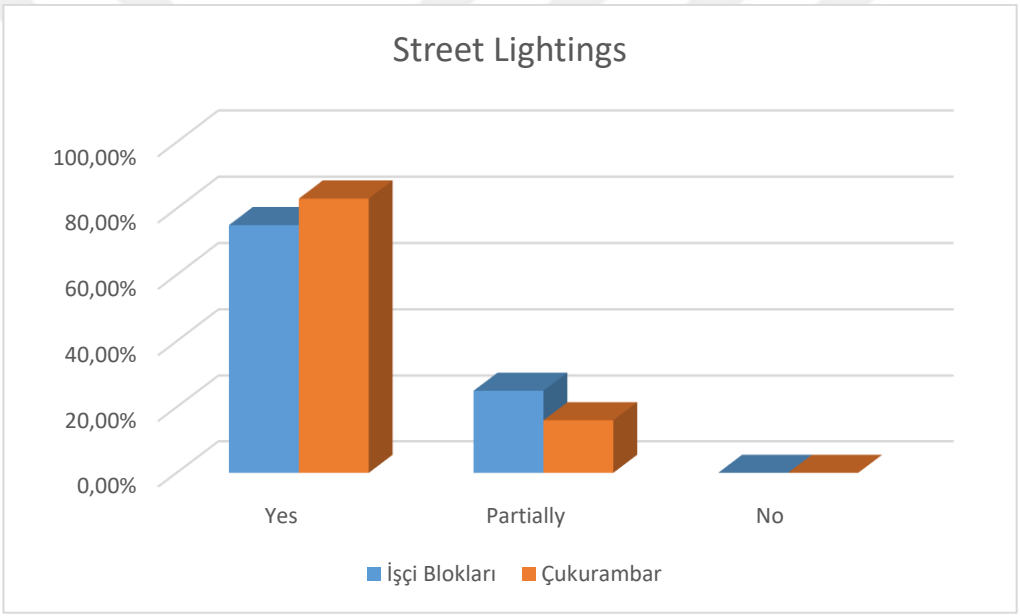


Figure 4.6: Sufficiency of Street Lightings

During the evening field trip, it was seen that while the street lighting was sufficient in some areas of the İşçi Blokları neighborhood (Figure 4.7), it was insufficient in some places (Figure 4.8).



Figure 4.7: İşçi Blokları Neighborhood, 1523. Street

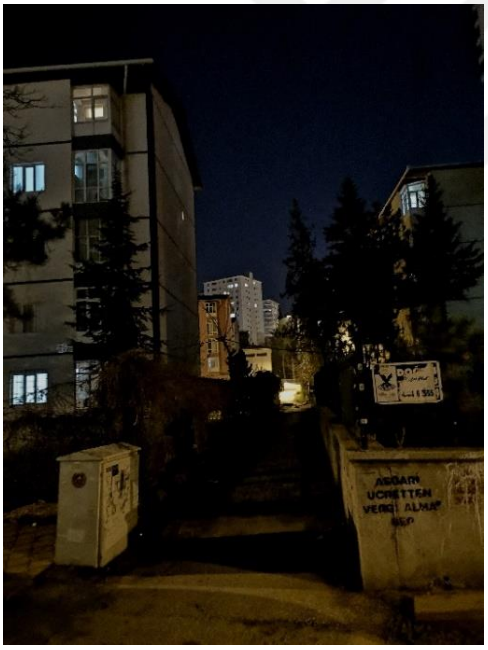


Figure 4.8: İşçi Blokları Neighborhood, 1471. Street

Environmental Cleaning

Regarding environmental cleanliness, there are opinions that the environment needs to be cleaner in both neighborhoods. However, if a comparison is made according to

both answers (Table 4.7 & Figure 4.9) and the field trip, it is seen that the İşçi Blokları neighborhood is more polluted than the Çukurambar neighborhood (Figure 4.10).

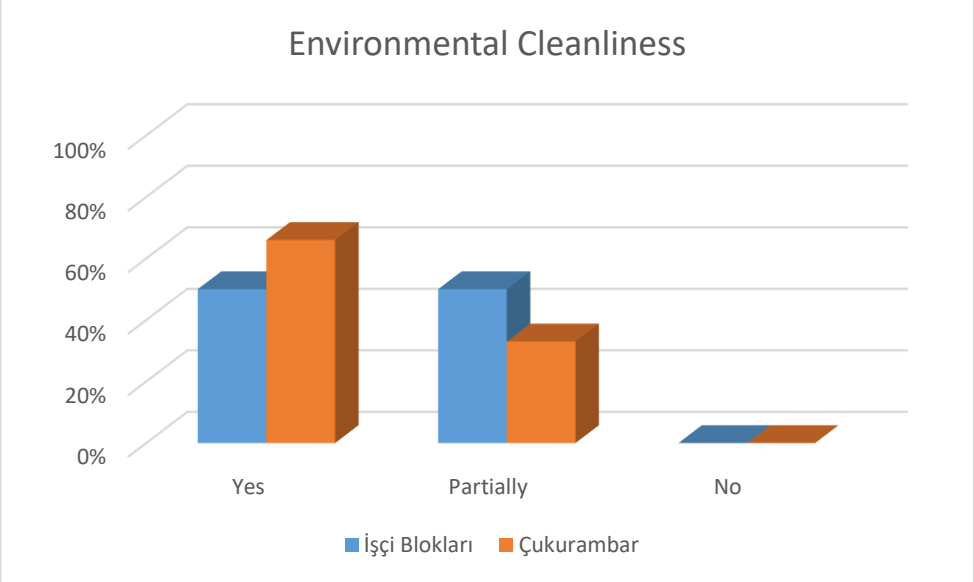


Figure 4.9: Environmental Cleanliness



Figure 4.10: Environmental pollution in İşçi Blokları Neighborhood

Accessible Bus Stops

It is understood that the bus stops are easily accessible in both neighborhoods (Table 4.7 & Figure 4.11). In a survey in the Çukurambar neighborhood, it was said that

transportation was very comfortable because there was a ring system. In addition, three participants (25% of participants) in the Çukurambar neighborhood said bus stops are frequent.

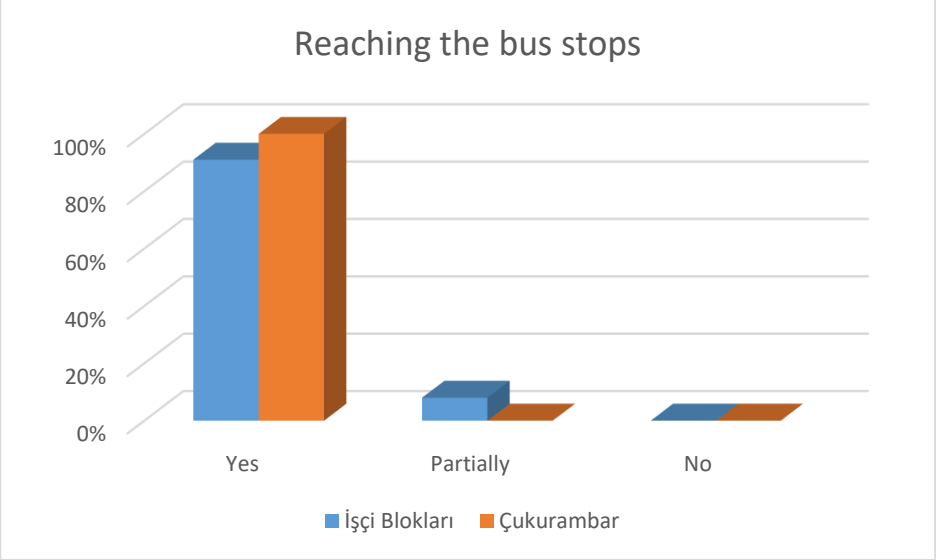


Figure 4.11: Accessibility of bus stops

Accessible Green Spaces And Recreation Areas

When discussing at recreation and green areas, it is generally seen that they are found in both neighborhoods (Figure 3.6). However, according to the results of the surveys (Table 4.7), it is seen that the green areas in İşçi blokları neighborhood are not equal everywhere. In the field trip, it is seen that there are very few green areas in the northern part of the İşçi Blokları neighborhood. According to the answers,

accessibility and adequacy of green areas were found to be higher in the Çukurambar neighborhood than in the İşçi Blokları (Table 4.7 & Figure 4.12)

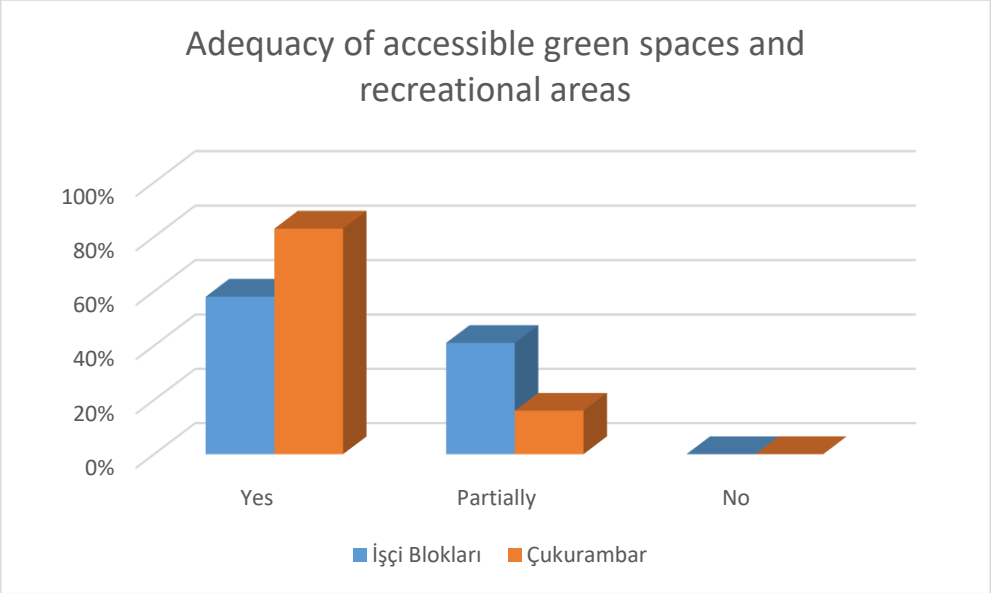


Figure 4.12: Adequacy of accessible green spaces and recreational areas

In addition, while green areas belonging to residences are more in the İşçi Blokları neighborhood, they are less in the Çukurambar neighborhood. To illustrate, a section of the same scale was taken from the residential areas in both neighborhoods and shown in Figure 4.13.

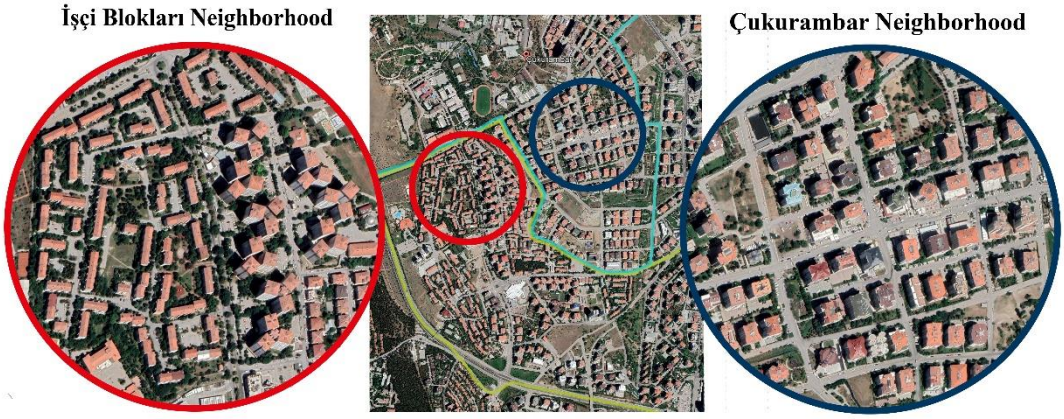


Figure 4.13: Green fields near the apartments

Adequacy of Benches or Resting Places

According to the survey, the number of benches or resting places to be protected from the sun and/or wind is not enough in both neighborhoods (Table 4.7). While in the İşçi Blokları neighborhood, only 16.6% of participants answered 'yes' to the question, 25% of participants said ‘yes’ in the Çukurambar neighborhood (Figure 4.12). This means that the number of benches in both neighborhoods is insufficient.

Furthermore, according to the field trip made by the author, there are two or three covered benches in the green areas in both neighborhoods. Apart from these, there are almost no covered benches. In addition, since some of the existing benches are not clean, this reduces the number of benches that can be used (Figure 4.14).

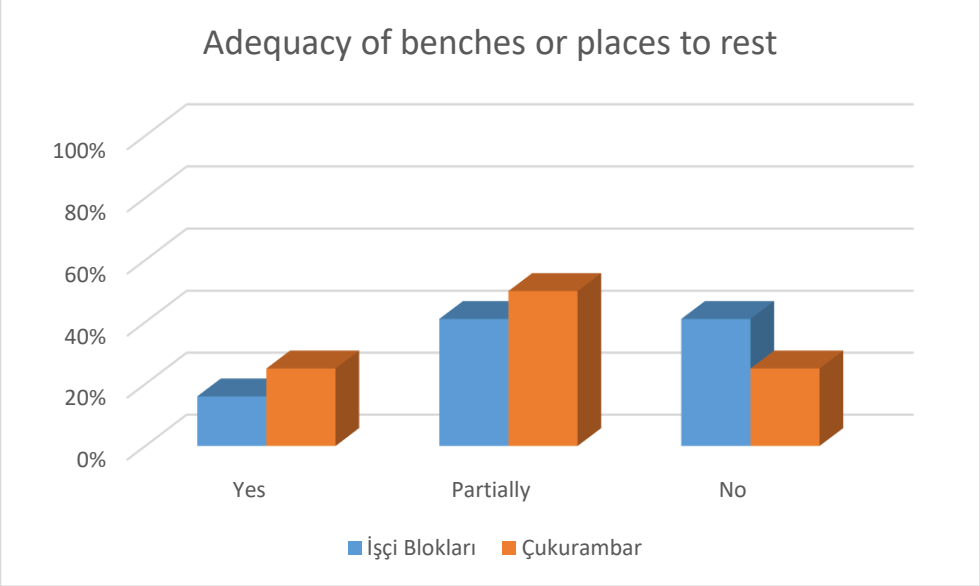


Figure 4.14: Adequacy of benches



Figure 4.15: The pollution of the bench in Uğur Mumcu park

Existence of Walkable Streets

When asked whether the neighborhood they live in consists of walkable streets, while 75% of participants said 'yes' in the Çukurambar neighborhood, 58.3% of participants in the İşçi Blokları neighborhood said ‘yes’ (Table 4.7 & Figure 4.16). In addition, while participants who said 'no' and 'partially' makeup 41.6% of all participants in the İşçi Blokları neighborhood, those who gave these answers in the Çukurambar neighborhood are only 25%. This 25% of participants in the Çukurambar neighborhood said that there are no walkable streets everywhere, mainly because cars are driven too fast on the main streets, the distances between pedestrian crossings are long and there are too many sloping roads and sidewalk as the reasons. On the field trip, it is revealed that the width of the roads is large and naturally, the distance between the pedestrian roads is also large.

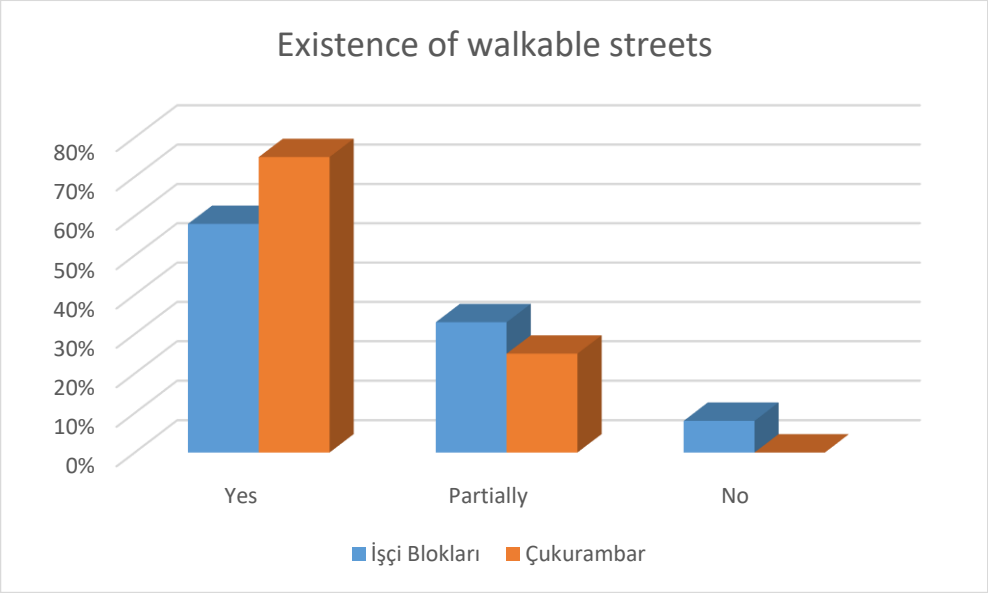


Figure 4.16: Existence of walkable street

Participants who said 'no' and 'partially', who made up 41.6 percent of the participants in the İşçi Blokları neighborhood, also said that there are a lot of potholes in some streets and that the narrow sidewalks are further narrowed due to the street poles as the reason. According to the field trip made by the author, problems are observed on most of the sidewalks in the İşçi Blokları neighborhood (Figure 4.17). In addition, 25% of participants who said partially stated that the streets are not safe due to dogs. However, this comment was not included in the analysis because it is unrelated to accessibility.

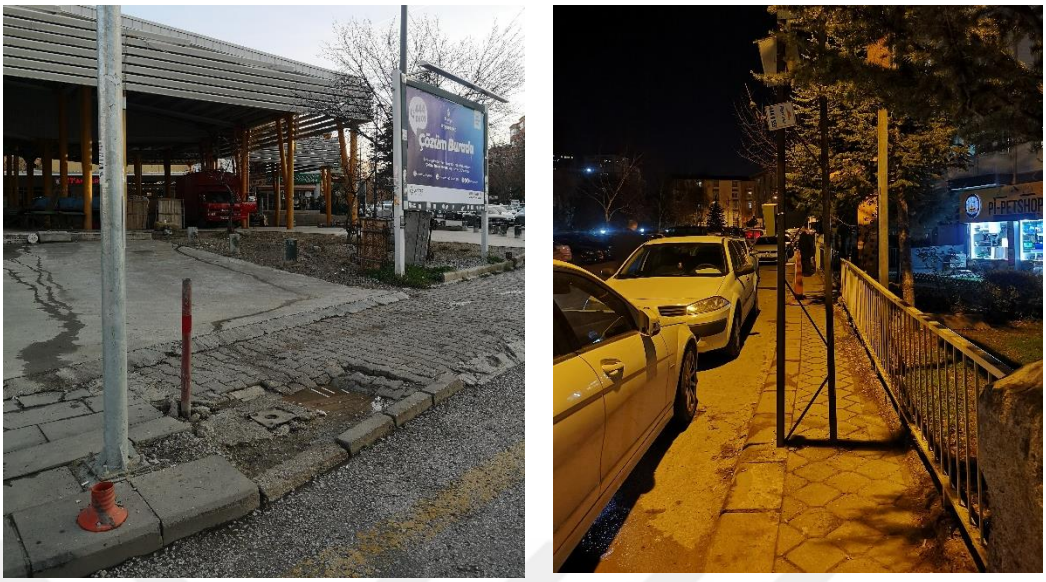


Figure 4.17: Some problems on the street in İşçi Blokları Neighborhood

Adequacy and Safety of Walking Paths

While in the İşçi Blokları neighborhood, only 58.3% of participant said answered as 'partially' and 'no' to 15th question about sufficient walking paths, those who gave this answer in the Çukurambar neighborhood were 8.3 percent (Figure 4.18). According to the survey, the walking paths were found to be more inadequate in the İşçi Blokları neighborhood. While, in addition according to the field trip made by the author in the İşçi Blokları neighborhood, walking paths in green areas were observed only in the large green areas in the south of the neighborhood (Figure 4.19), no walking paths were not observed in other green areas in the same neighborhood.

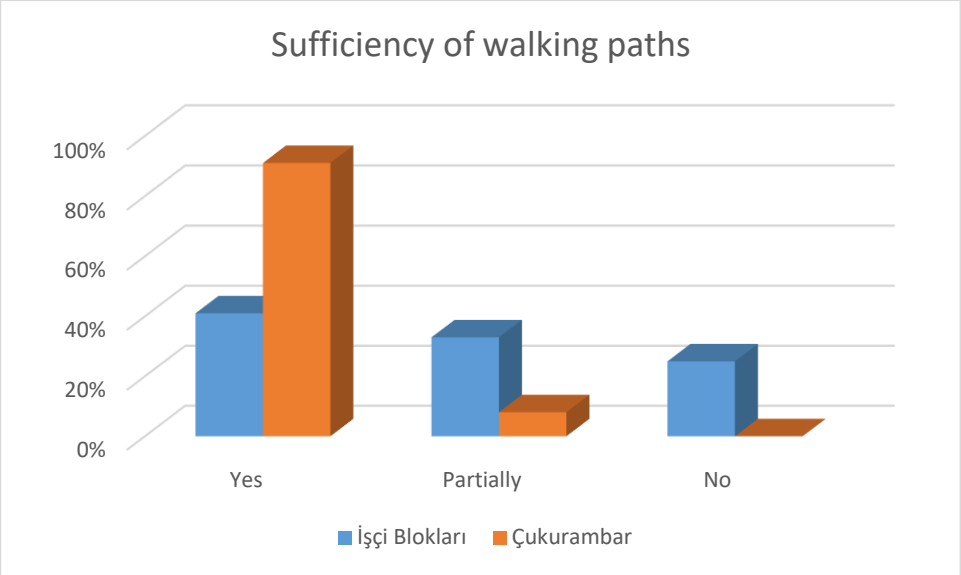


Figure 4.18: Sufficiency of walking paths

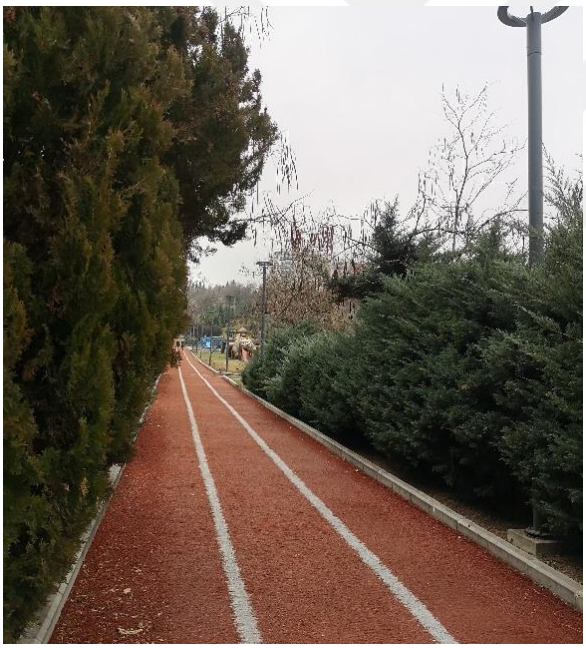


Figure 4.19: 100. Yıl Park

To the question of whether the walking paths in the park/ green areas or on the roadside in the neighborhood are safe, while 33.3% of participants in the Çukurambar neighborhood said ‘partly’ and ‘no’, in the İşçi Blokları neighborhood, 50% of the participants (six participants) answered 'partially' and 'no' (Table 4.7 &

Figure 4.20). Two respondents (16%) who gave this answer in the İşçi Blokları neighborhood stated that some areas were partially unsafe due to dog attacks. However, this comment was not included in the analysis as it was not related to accessibility.

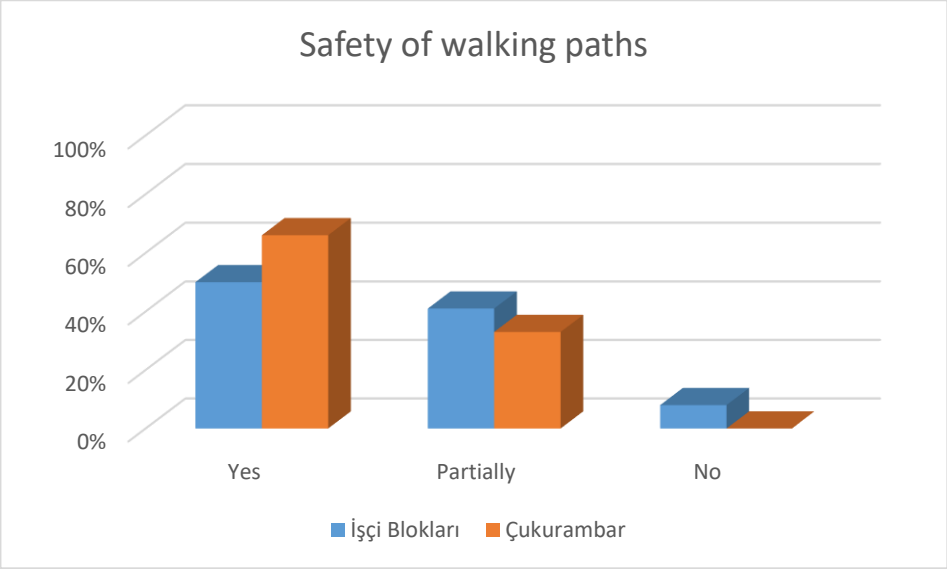


Figure 4.20: Safety of walking paths

Sidewalks Conditions

While among the 15 questions, this question was the worst evaluated question in the İşçi Blokları neighborhood, it was mentioned that both the width, the height and the durability are in good condition in the Çukurambar neighborhood. While 66.6% of participants said 'no' and 'partially' to the adequacy of the width and height of the pavements in the İşçi Blokları neighborhood, only 8.3% of the participants made this negative evaluation in the Çukurambar neighborhood (Table 4.7 & Figure 4.21). The width and height of sidewalks in Çukurambar neighborhood are in good condition compared to the İşçi Blokları neighborhood. In the field trip made by the author, it was observed that the width of the pavements was generally sufficient and there were barriers in some areas (Figure 4.22).

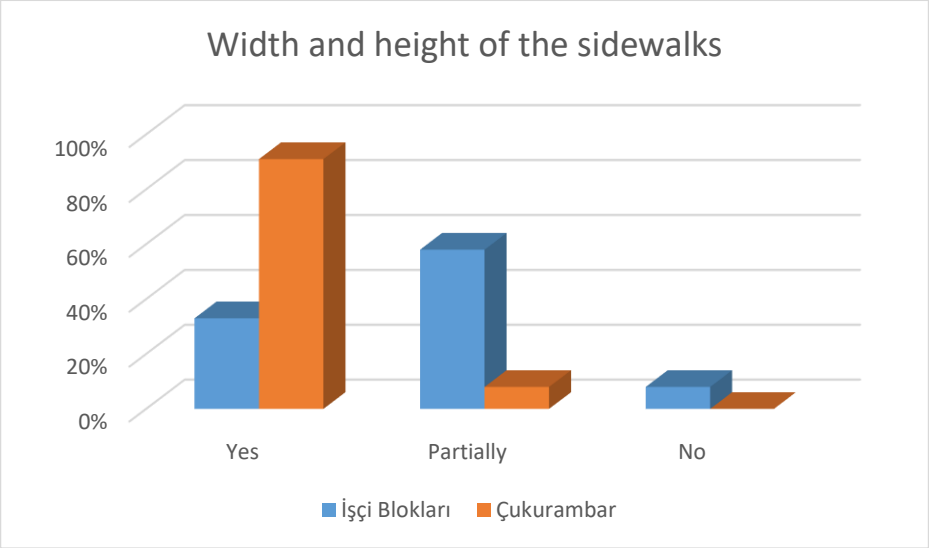


Figure 4.21: Width and height of the sidewalks

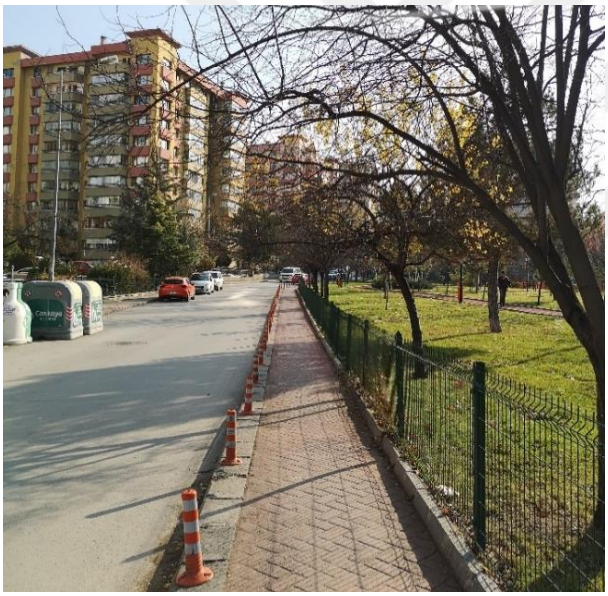


Figure 4.22: Sidewalk in Çukurambar Neighborhood, 1466. Street

On the other hand, in the İşçi Blokları neighborhood, too many bad reviews have been received. 41.7% of participants mentioned that there are too many pavement problems, especially in the thoroughfare of this neighborhood. Again in this neighborhood, 25% of participants said that it is not very safe as cars are parked on sidewalks in some places (Figure 4.23). At the same time, it has been said that there

are too many skewed stones on some pavements and some areas have no sidewalks (Figure 4.23). The reasons given by the participants here were also stated in the walkable street question.



Figure 4.23: Some sidewalk problems in İşçi Blokları Neighborhood

Stairs Condition

According to the surveys, all participants in the İşçi Blokları neighborhood said that there are no stairs in this neighborhood. However, in the field trip made by the author, it was observed that there was a stair (Figure 4.24). It is considered normal by author for them to ignore it because there are barely stairs in the neighborhood. In the Çukurambar neighborhood, only 16.6% of participants said there are stairs (Table

4.7) and that these stairs are in good condition. In the field trip made by the author, it was observed that there are stairs in the neighborhood (Figure 4.25).

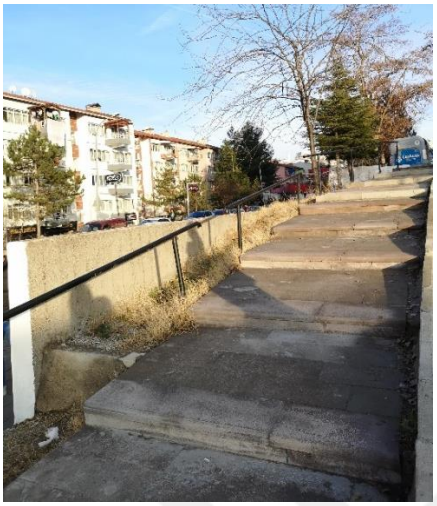


Figure 4.24: İşçi Blokları Neighborhood, Hasan Celal Güzel Street



Figure 4.25: Çukurambar Neighborhood, 1431. Street

Accessible Pedestrian Crossing

According to the survey, it was seen that there is a problem with crossing the street in both neighborhoods. While in the İşçi Blokları neighborhood, 33.3% of participants said that they had difficulties in some areas, those who said like that in the Çukurambar neighborhood is 41.7% (Table 4.7 & Figure 4.26). According to

these results, more participants saw this as a problem in the Çukurambar neighborhood. While it was stated that cars are driven very fast on the main streets in Çukurambar, it was said that there is extra density on the roads after work and school as a reason in İşçi Blokları neighborhood.

In addition, it was mentioned that some cars never stopped when the green light was on for pedestrians at the crosswalk next to the 100. Yıl District Bazaar in the İşçi Blokları neighborhood. 33.3% of participants also said that button of pedestrian crossings should increase.

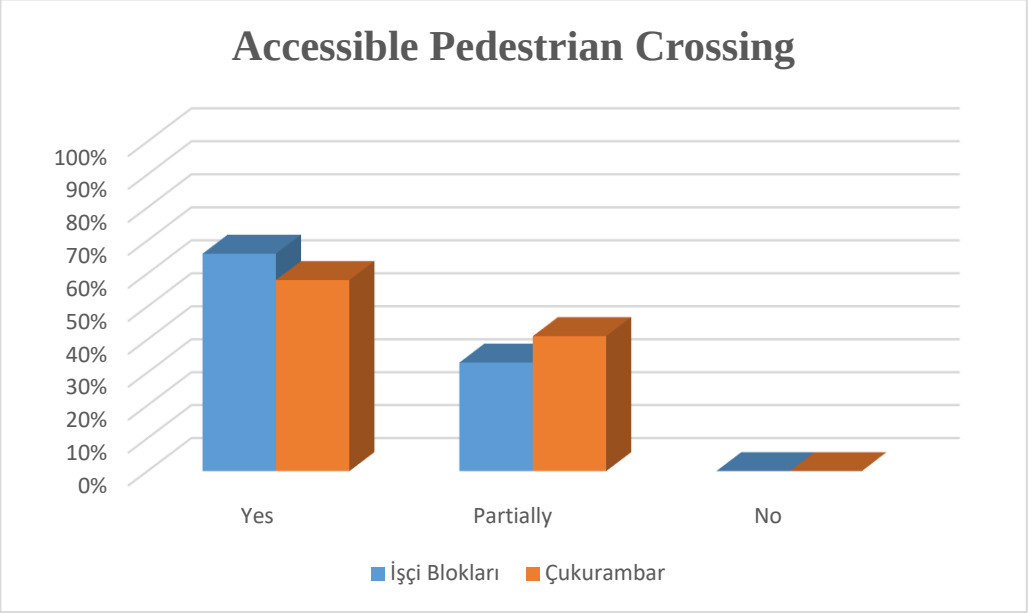


Figure 4.26: Accessible Pedestrian Crossing

Furthermore, the Çukurambar neighborhood consists of a very inclined place. In the field trip, it was observed that there were constant changes in elevation difference. One participants said that she could not see the vehicles while crossing the street due to her house being at the top elevation and sometimes she is nervous because they came quickly.

Existence of Urban Areas for Activity

When asked about whether there are areas for courses, seminars, concerts, and similar events, while 41.6% of participants in the Çukurambar neighborhood said 'yes' and 'partly', 83.4% of participants who said only 'yes' in the İşçi Blokları neighborhood (Table 4.7 & Figure 4.27). While Çankaya House and METU Vişnelik were the reason for those, who said 'yes' in the İşçi Blokları neighborhood, the reason for those who said 'yes' and 'partly' in the Çukurambar neighborhood was the Çansera (Uğur Mumcu) (Figure 4.28) park and a few schools. However, the very few activities held in the Çukurambar neighborhood caused 58.4% of the participants to said that such an area does not exist.

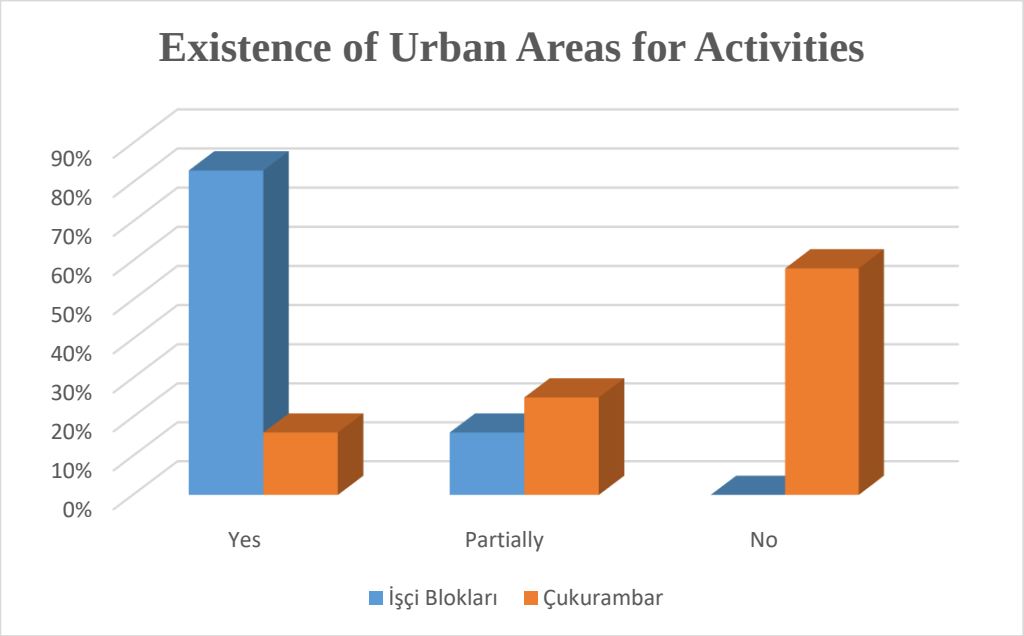


Figure 4.27: Existence of Urban Areas for Activities



Figure 4.28: Çansera (Uğur Mumcu) Park

Also, 16.6% of participants in the İşçi Blokları neighborhood, who said 'partly', said as a reason that some parts of the Çankaya house were completely given to the students. This brought the interpretation that a new Çankaya house should be built and this is mentioned in the 4.2.2 heading.

4.3.2 The Dangers Posed by the Physical Environments on the Older Women's Health

16.6% of participants (two participants) in the Çukurambar neighborhood are in danger of falling. One participant in the Çukurambar neighborhood said that she was sometimes exposed to buckling her foot due to the imbalance of the paving stones. Another participant said that she once had the danger of falling because she could not see a pothole on the road.

In the İşçi Blokları neighborhood, 33.3% of participants (four participants) stated that they fell several times due to the imbalance of the paving stones. One of four participant also said that while running from the dogs, she fell many times due to potholes and an imbalance of the paving stones.

4.3.3 Levels of Willing to Age in The Neighborhood

At the end of the survey, participants were asked whether they still want to age in their neighborhood or not in the light of what they had discussed. They were asked to assess their neighborhood in a 5 point likert scale along with an explanation (Table 4.8). According to the data obtained from these reasons, the author explained whether these conditions affect their active aging. With this question the author aimed to reveal the role of accessibility of neighborhood facilities in their active aging process, and whether they see the potentials and barriers offered by their neighborhood as a determinant of their assessment.

Table 4.8: Table of criteria for whether or not they want to age

I would never want to age in a neighborhood like this.	I wouldn't want to age in a neighborhood like this.	I'm neutral about aging in a neighborhood like this.	I would like to age in a neighborhood like this.	I would definitely love to age in a neighborhood like this.
1	2	3	4	5

According to the results of the research conducted in both neighborhoods, it is seen that the neighborhood's physical environment and accessibility significantly affect the active aging of older women in themselves. Unpaired t-test was applied according to the answers. After the t test to compare the desire of aging of the participants in both neighborhoods, it was found that the aging desire levels of the participants in both neighborhoods were different from each other. While the mean of the answers given by 12 participants in the İşçi blokları neighborhood is 3.17, it is 3.33 in the Çukurambar neighborhood (Table 4.9). The two-tailed P value equals 0.7126. This value is greater than 0.05. So this means that the difference is not statistically significant and there is no difference between the neighborhoods at the 5 percent error level. There is no difference between the opinions of the desire to age

in both neighborhoods and the participants want to age in their neighborhoods at the same level.

Table 4.9: Desire for aging in the neighborhoods of older women

İşçi Blokları Neighborhood	Evaluation Criteria	Çukurambar Neighborhood	Evaluation Criteria
Participant 1	5	Participant 1	5
Participant 2	3	Participant 2	2
Participant 3	4	Participant 3	1
Participant 4	3	Participant 4	3
Participant 5	2	Participant 5	4
Participant 6	3	Participant 6	5
Participant 7	3	Participant 7	4
Participant 8	2	Participant 8	2
Participant 9	4	Participant 9	3
Participant 10	3	Participant 10	4
Participant 11	4	Participant 11	4
Participant 12	2	Participant 12	3
Mean	3,17	Mean	3,33

The answers given by older women who have health problems that affect their activities when they go out in their neighborhoods to the question of whether they want to age in the neighborhood are given in gray in the table below (Table 4.9). In general, they are the majority of those who give low ratings.

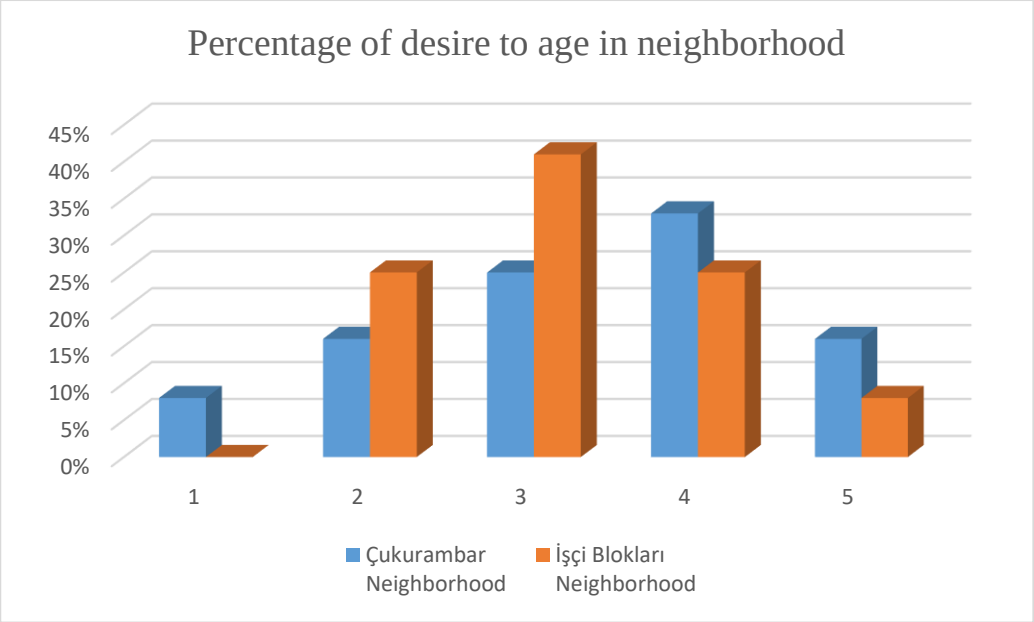


Figure 4.29: Percentage of desire to age in both neighborhoods

According to Table 4.9, although the average in the Çukurambar neighborhood is higher, participants in both neighborhoods are generally neutral in their desire to age in their neighborhoods (3).

33% of the participants in the İşçi Blokları neighborhood and 50% of the participants in the Çukurambar neighborhood said they want to age in their neighborhoods (Figure 4.29) (4 and 5). The same important and positive comments from participants in the Çukurambar neighborhood, which has a high average, came also from participants in the İşçi Blokları neighborhood. These comments are generally that there is everything in the neighborhood, and they have not encountered a situation that would force them to continue their lives. However, more participants made these comments in the Çukurambar neighborhood than in the İşçi Blokları neighborhood. For this reason, the percentage is higher in Çukurambar. In addition, almost no bad comments about the pavement were received from the Çukurambar neighborhood. Due to the urban transformation, the width, height and condition of the pavements are sufficient for the elderly, as the planning was done comprehensively and

comfortably. This situation in the Çukurambar neighborhood encourages accessibility to neighborhood facilities for the elderly compared to the İşçi Blokları.

While 25% of the participants in the Çukurambar neighborhood were neutral (3), 41% of the participants in the İşçi Blokları neighborhood said neutral (3) (Figure 4.29). This is the most common answer in the İşçi Blokları neighborhood. In both neighborhoods, in addition to the good aspects described in the previous paragraph, a neutral option was said because of the bad aspects mentioned. The reasons stated by those who are neutral in the İşçi Blokları neighborhood are generally pavement problems, the neighborhood is getting crowded and the physical condition of their houses is not good. In the Çukurambar neighborhood, there are neutral answers because high-rise buildings are built, being crowded and insufficient activity areas. In the participants who said they were neutral, neither of the good and bad comments of the neighborhood outweighed the other. In addition, the time spent by most of those who stated in this way in areas outside their homes in the neighborhood was generally between 2 and 3 hours, that is, less.

25% of the participants in both the İşçi Blokları neighborhood and the Çukurambar neighborhood did not want to age in their neighborhoods (1 and 2) (Figure 4.29). The reasons said in the İşçi Blokları neighborhood were the poor quality of the houses, the poor condition of the pavements, the traffic density due to getting more crowded, and the narrowed sidewalks and narrowed roads due to the cars parked on the sidewalks caused by this. According to these problems caused by overcrowding, it can be said that the participants in the İşçi Blokları neighborhood have a fear of their neighborhood being like the Çukurambar neighborhood, which is also mentioned in the method section. The reason for those who do not want to age in the Çukurambar neighborhood is that it is crowded and there are not enough accessible activity areas and commercial areas. In the İşçi Blokları, there is an easy accessibility situation because most of the commercial areas are close to the center. Since this is not the case in the Çukurambar neighborhood, the participants said they do not want to age here.

As a result, according to all these evaluations, there is a similar aging desire outcome in both neighborhoods. The reason why the Çukurambar neighborhood's result is higher than the işçi blokları neighborhood is that the accessible green areas are sufficient and the pavements are in good condition. However, the most crucial reason for the lower results in the işçi blokları neighborhood is the narrowing of the narrow sidewalks in this area due to the increasing crowding and the bad conditions arising from the lack of renewal of the sidewalks and houses.

In fact, the accessibility of neighborhood facilities, which affects active aging in both neighborhoods, has both positive and negative aspects in itself. In other words, the most important point in this analysis, according to the author, is not why the Çukurambar neighborhood is more accessible, but that both neighborhoods have their own accessibility problems.

CHAPTER 5

CONCLUSION

This thesis focuses on understanding how the accessibility of the physical environment affects the active aging of older women. Urban areas and their accessibility are significant in this thesis, as they provide information on the active aging of older women. In this section, a summary of this study is presented. Afterward, the findings and limitations of the study are discussed. Finally, the implications of the study for future research are offered.

5.1 A Brief Summary of the Study

In the past, the primary goal was to protect and care for individuals in need. However, today it is aimed to increase the quality of life of the individual and to participate actively in social life by aging in a healthy and successful manner (Danış, 2008, s.95). If the surrounding area is not safe, the sidewalks are not built to be age-friendly, and there is poor street lighting, they are unlikely to leave the house (Sivam & Karuppannan, 2000). For this reason, services and policies will enable older persons to participate actively and productively in society become important (Altuntaş & Kayıhan, 2012). The most important of the services discussed in this study is to be ensured the accessibility of urban areas. The reason of this, the environment in which people live and the compliance of this environment with the limitations of the individual is one of the most important factors affecting the quality of life (Altuntaş & Kayıhan, 2012).

Accessible urban spaces for everyone are indispensable for participating in social life (Afacan, 2015, s.17). Appropriate living quarters and public transport design enable access to various shopping areas, establish social relationships with people in

the immediate vicinity, and participate in supportive social networks. These approaches provide an appropriate infrastructure to support active aging and aging in place (Kalınkara, 2017).

When the literature on the connection between urban planning and active aging is examined, it is seen that the accessibility of urban form features such as the presence of green areas, the condition of the pavements, the diversity of uses, the presence of pedestrian crossings, etc. have an essential role in determining the active aging level of the elderly. The primary purpose of this study is to analyze and compare the physical environment in different neighborhoods in order to understand the role of neighborhood design in the accessibility behavior of older women. While the main research question was formed to understand this relationship, the active aging and accessibility studies in the literature were examined.

Two neighborhoods representing different urban design features from Ankara were chosen: Çukurambar and İşçi Blokları Neighborhood. The selected neighborhoods are located next to each other. While the Çukurambar neighborhood consists of high-rise and new buildings, the İşçi Bloklarıneighborhood consists of lower-rise and old buildings. First of all, the histories of both neighborhoods and the old studies about them were examined. Then, the areas were examined by making an overview with Google Earth. Interview questions were prepared by examining the literature reviews and Google Earth data on active aging and accessibility.

Among the selected neighborhoods, Çukurambar was the neighborhood that positively affected older women in their aging, even if the results were close. Despite the lack of activity areas, people wanted to age here more than in the İşçi Blokları neighborhood, as it has plenty of green spaces, more walking paths, and smooth pavements, which increase accessibility. There is a certain amount of traffic exposure in both neighborhoods. In the İşçi Blokları neighborhood, which used to be subject to low traffic, the older women said that this has increased.

To the author's knowledge, this is the first study to objectively measure accessibility, an important factor in the active aging of older women in different neighborhood

types in Turkey. In line with the literature reviewed, the author argues that there is a strong relationship between urban form and active aging, which has been affected by accessibility, and that the selected neighborhoods support the aging of older women for different reasons, but with the same desire (İşçi Blokları: 3.17, Çukurambar: 3.33), due to the changing urban form characteristics.

5.2 A Discussion of the Findings With Regard to the Existing Literature

The role of accessibility in the active aging of older women who use areas outside of their homes in the neighborhood has been examined. The physical characteristics of the neighborhood affect the accessibility to older women, and accordingly, the levels of active aging may change.

There are many determinants of active aging. These are described under the heading 2.3.2 Determinants of Active Aging. Since age-friendly cities affect the status of active aging, questionnaire questions were created using age-friendly themes (Title 2.3.3.1) and active aging determinants. This study discusses personal, economic, social, and physical determinants. Although the main determinant is the physical determinant, these other determinants are also discussed since using these determinants is related to the economic, social and personal status of older women.

According to data from the I'DGO (Inclusive Design for Getting Outdoors) research program, older persons living in areas where it is easy to spend time outside are more likely to be physically active to enjoy their lives. As mentioned in the previous topic, the time spent outside of their homes of the participants in this thesis who said that access was difficult in both neighborhoods was also very low (Table 4.4, 4.5, and 4.6).

Furthermore, there was no significant difference between the duration of use of the areas outside of their homes in both neighborhoods. In addition, as stated previously, the answers given by older women who have health problems that affect their activities when they go out in their neighborhoods to the question of whether they

want to age in the neighborhood are the majority of those who give low ratings (Table 4.9). In other words, it has been observed that those with health problems that affect their activities when they go out in their neighborhoods do not spend almost any time outside their homes in the neighborhood and do not want to grow old in their neighborhoods. They need to have smoother sidewalks and stairs with barriers and more clean benches so they can be more active and spend more time outside.

Although older women lived in different neighborhoods, the places they used outside of their homes did not differ much. The single most important difference, expressed by the majority of older women in the İşçi Blokları neighborhood, but not in the Çukurambar neighborhood is the presence of a community center (as in the case of İşçi Blokları, this was the Çankaya Evi). Most of those who said there is no community center said they were hesitant about wanting to age in their neighborhoods. In other words, the absence of such places has created them to think neutral.

According to another result from both neighborhoods, the answers of that they were asked about the places they said would be better in their neighborhoods were also similar except for one difference. Similar answers are the increase in accessible green spaces and the increase in areas of social events. However, the one different answer between the two neighborhoods is the increase of accessible commercial areas in the Çukurambar neighborhood. According to the survey results, most participants mentioned that accessible commercial areas are far away. In addition, according to Mollenkopf (1997), mentioned in the literature, the fact that such areas are far from them affects accessibility. These results also confirmed this.

In order to support the subject in the paragraph mentioned above, in the Çukurambar neighborhood, the reasons which is said by older women, who said that access in this neighborhood is difficult and preferred the car for transportation, are just distances. However, in the İşçi Blokları neighborhood, the reasons for participants who said that access is difficult and they prefer the car are different. These reasons are the lack of rest benches, the sidewalks' problems, and dog aggression. As a result, while those

who have difficulty accessing the Çukurambar neighborhood said one thing as a reason, the fact that there are different problems in the İşçi Blokları neighborhood shows that there are actually more problems there. In other words, the reasons for difficulty in accessing the İşçi Blokları neighborhood are varied.

Both neighborhoods have a sufficient number of directional street signs and bus stops. Although the street lighting is insufficient in only a few places in the İşçi Blokları neighborhood, the street lighting is generally sufficient in both neighborhoods. Problems were observed in some areas in both neighborhoods regarding environmental cleaning.

The green areas in the İşçi Blokları neighborhood generally consist of the gardens of the apartments (there are not enough urban elements to spend time like benches) and open green areas. Since there are few residential typologies with gardens in the Çukurambar neighborhood, it is mostly composed of open green areas with walking paths. Considering the accessibility of open green spaces, there are more accessible green spaces in the Çukurambar neighborhood tan İşçi Blokları neighborhood according to survey and field trip. As mentioned in Title 2.3.2.4, green spaces can encourage people to be more active. There is evidence that older persons living near green areas walk more often and leave their homes (Saelens, 2008; Sugiyama, 2007). However, while this is valid for the Çukurambar neighborhood, it is not valid for the İşçi blokları neighborhood. Participants, who stated that they could not easily access the green areas in the Çukurambar neighborhood, stated they went out very little. In other words, participants who cannot reach the green areas in the Çukurambar neighborhood spend less time outside. However, among the participants who stated that they could not easily reach the green areas in the İşçi Blokları Neighborhood, there were also those who spent more time outside than the average.

A bench or place to rest in order to be protected from the sun and/or wind in the neighborhood was found to be insufficient for both neighborhoods, both in the field trip observations and in the interviews. As people grow up, they go through physical changes. In old age, there are decreases in functional capacity and physiological

regressions (WHO, 2007). Function and muscle strength are reduced. The older person starts to get tired faster. It becomes difficult to perform many functions required by daily life (Kalınkara, 2015). For all these reasons, there is a need for more and usable benches on the streets.

In both neighborhoods, there are no walkable streets in some places. In the Çukurambar neighborhood, there is also uneasiness caused by fast driving and high slopes in the neighborhood. Afacan (2015) also mentioned this result in the Çukurambar neighborhood. According to Afacan, the Çukurambar neighborhood is an urban area where mostly motor vehicles are used. For this reason, while heavy traffic brings air and sound pollution, it also does not allow environmental regulations that would allow easy access for pedestrians. Looking at the noise level band map mentioned in the site selection section (See. Title 3.2.1), the Çukurambar neighborhood already seems higher than the İşçi Blokları neighborhood.

It has been said that, in the İşçi Blokları neighborhood, there are difficulties when crossing the street during rush hour, so there should be extra pedestrian crossings. In the Çukurambar neighborhood, on the other hand, concerns were expressed due to the speed of vehicles and the slope of the neighborhood. The negative effects of the high slope, which was mentioned in the method section and noticed during the field trip, were also seen in the survey. In addition to this result described in the previous chapter, according to Afacan's study conducted in 2015, it was revealed that the long distances between the pedestrian crossings in the Çukurambar neighborhood create accessibility problems.

In light of all these evaluations, the reasons for aging willingness were related to the neighborhood's physical condition and the participants' personal characteristics in heading 4.3.3. However, since accessibility to neighborhood facilities is the main basis of this thesis, personal reasons were eliminated and only reasons of accessibility and active aging are mentioned in the table 5.1.

According to this table, the reasons the participants said 'I would never want to age in both neighborhoods' (1) are unrelated to accessibility. In addition, the common

points of those who do not want to age (2) in their neighborhoods are due to the fact that their neighborhoods are too crowded and there are not enough activity areas. The crowdedness of a neighborhood affects accessibility. The common point of those who answered neutral (3) in both neighborhoods is the excess population in their neighborhoods. It is understood that the participants in the İşçi Blokları neighborhood have a fear of their neighborhoods being like a Çukurambar as mentioned in the method section, especially because it is getting more crowded and becoming an attractive area with entertainment venues.

All participants who want to age in their neighborhoods (4) and those who definitely want to age in their neighborhood (5) stated that they have everything in their neighborhood and there is no situation that forces them.

Overall, the majority of the reasons that prevent people from accessing neighborhood facilities did not actually affect their aging willing either positively or negatively (İşçi Blokları: 3.17, Çukurambar 3.33).

Table 5.1: The relationship between accessibility in built environment and the reasons for willing to age in their neighborhoods

	1	2	3
İşçi Blokları	-	Participant 5- There are not enough green spaces and activity areas. There is a lot of empty space in the neighborhood, so social facilities can be built here.	Participant 2- The sidewalks are narrow, and these dogs sometimes may create extra trouble when walking or running. I would like to go to a less crowded, more empty and wider area
	-	Participant 12-I prefer a cleaner and less crowded place.	Participant 7- I want to do work with soil. There is no land for this and it is getting crowded in here.
	-	-	Participant 10- There are too many students and it is starting to get crowded. I want to go to a quieter place, such as the beach
Çukurambar	-	Participant 2- There are no accessible events. There is no place for me to have fun at my age. I also want to work with soil. The lands here used to be used for agriculture, but it has changed. Everywhere was filled with parks and buildings.	Participant 4- Other places are more appealing to me. There are very few places where I can improve myself or go to sit with my friends. However, my family is here too, which is why I am undecided.
	-	Participant 8- This place got too crowded, I want to go to my village.	Participant 12- I have been here for a long time and everyone I know is here. I am so tired of high-rise buildings and crowds. Sometimes I want to go back to my village
	-	-	-

4	5
Participant 4- There are all the things I need here.	Participant 1- There is no situation make my life very difficult
Participant 9- There is basically everything I want. Only the sidewalks problems should be resolved.	-
-	-
Participant 5- My family is here and no situation forces me.	Participant 6- There is everything necessary in the neighborhood
Participant 7- There is everything necessary in the neighborhood.	Participant 1- Everything I need is in this neighborhood
Participant 11- I want to age here, as no situation make my life very difficult.	-

In the interviews held in both neighborhoods, the same accessibility problems were mentioned in almost every question. For example, the reasons given by those who do not prefer to walk to a place in question 5 are repeated in other questions. In conclusion, in both neighborhoods, it was found that the accessibility of areas outside of their homes in the neighborhood, similarly but for different reasons, affected their active aging. This can also be understood in their actively time spent in areas outside of their homes in their neighborhoods (Table 4.4). Furthermore, it was stated that the residents of the İşçi Blokları neighborhood, which was mentioned in the method section and emerged as a result of a study, have a fear that their neighborhood would resemble another Çukurambar neighborhood. However, according to the survey results, despite these fears, it has not been said that people do not want to age in the İşçi Blokları neighborhood. This reason which was mentioned in the method section and the results did not match, and this situation can be used to be thoroughly analyzed in future studies.

5.3 Limitation of the Study

There are several limitations in this study. The first finding of the study the places they used outside of their homes in their neighborhoods and the duration of using these places were similar for both neighborhoods. For these results to be more meaningful, places with different land use rates and population densities should be selected. In addition, different results can be obtained if the neighborhoods with single or two-storey houses are chosen rather than the places where the high-rise buildings are located.

Furthermore, this differentiation may increase even more if neighborhoods that are not close to each other are selected. Since both neighborhoods were chosen from within the city, the survey questions were formed accordingly. If two neighborhoods in the city and outside the city are selected, the results may become more meaningful. In addition, if car oriented city or neighborhood are selected, the results may be different in terms of accessibility.

The Covid-19 pandemic situation may also have affected the interview because, in the early days of the pandemic, most of them learned to do their issues at home, as they could not leave the house. In addition, habits may have changed because of this. If it were not for Covid-19 and if this study was done again, the time and place of using the areas outside of their homes in the neighborhood could have differed and increased. In order to see such a result, this research can be repeated when there is no pandemic situation in the following years.

In addition, the size of the areas was not calculated since it is important whether the areas are accessible or not, not the size of the areas used in this study. Considering accessibility, since older women could not be asked ethically where their homes were, a study could not be carried out by buffering the map according to the walking distances mentioned in the Regulation for the Preparation of Spatial Plans. This has limited the precise determination of walking distances in accessibility.

5.4 Implications of the Study for Planning and Future Research

This thesis is on the effect of accessibility of neighborhood facilities on the active aging of older women. Existing cities are not designed with the older person and their participation in mind, resulting in negative consequences for their aging.

Healthy and active aging is a lifelong approach that should be considered for all periods of life. After aging, it becomes more difficult to be healthy and active and develop individual attitudes and behaviors in this regard. For this reason, within the scope of the lifelong learning approach, the habit of engaging in sports activities, exercising, and adequate and balanced nutrition should be gained from childhood, and it should be transformed into a lifestyle by becoming a part of life. An active and productive healthy generation that is away from smoking and other substances eats adequately and balanced, develops positive interpersonal relations, participates in society, and participates in voluntary work is the goal of societies (Özmete, 2016).

Barriers to mobility, dangers to physical security, and insufficient transportation are only a few of the difficulties older women encounter in cities. Local governments can enhance the physical environment through comprehensive planning and design so that all older women, ill or not, can easily access all areas of the city and take utilization public services. People of all ages, not only older women, would benefit from these advances (Kalınkara, 2017).

For this reason and according to the results, the accessibility of neighborhood facilities significantly impacts the active aging of older women. In this context, it is very important to create more active, healthy and sustainable cities with the cooperation of planners, local governments and older women.

There is a need to increase the activities that will contribute to the socialization and face-to-face interactions of older women with disadvantages. For this reason, encouraging older women to use the areas outside of their homes in the neighborhood and increasing accessible different types of urban facilities is very important for their

active aging. That is, land uses must be differentiated and access to these must be suitable for older women, also all older person.

Furthermore, in the neighborhoods, issues such as cleanliness, security, maintenance and traffic should be given importance, and the problems of older women should be considered. Municipalities and planners should practice and rethink these issues.

As a result, an alternative transformation model is needed in terms of accessibility in both neighborhoods. All kinds of user needs and wishes should be addressed, and an arrangement should be made that adheres to the design principles of urban livability. Diversity, social interaction and a healthy environment are indispensable for an accessible environment. Sharing of information and communication between local governments and professional groups should increase. In addition to these, older persons should be actively involved in the design process. Their requirements should be treated as design input. A barrier-free urban design that can respond to user needs will not only positively affect individuals' access but will also strengthen their healthy and active participation in social life. So this study can be used as a basis for studies based on accessibility affecting the active aging of older women. Also, in the future, using different methods, researchers can learn what needs to be paid more attention to increase accessibility in the neighborhood.

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2023 Başkent Ankara Nazım İmar Planı, Plan Açıklama Raporu.

APPENDICES

A. Investigation of the Effect of Accessibility of Neighborhood Facilities on Active Aging

Do you live in this neighborhood?

□ Yes □ No (The next question will be asked to those who answer yes to this question.)

How old are you? (Those over 65 will be asked the next question.)

Do you spend more or less time in your neighborhood outside of your home? (This question will be asked when the author go to their homes or are contacted by phone.)

□ Yes □ No (The survey will be started with those who answer yes to this question.)

The interwiev below will be held with those who give appropriate answers to the above questions:

1) **Do you experience the effects of different obstacles, such as a possible health problem caused by your age or a possible difficulty in climbing stairs, in your time spent in areas outside of your home in your neighborhood? If your answer is yes, can you explain why?**

2) **How often do you use places/areas outside your home, such as green areas, markets, pharmacies, and neighbor houses in your neighborhood?**

Very Rarely	Sometimes	Often
1	2	3

3) **On average, how much time (in minutes or hours) do you spend per day in your neighborhood on weekdays?**

4) **On average, how much time (in minutes or hours) do you spend per day in your neighborhood on weekend?**

5) **What are the places you use most often in your neighbourhood? You can say as many places.**

(The following questions were repeated for each separate place said)

- Do you usually go to this place on your own or with help from others?

    - If the participant does not go on your own: ask, 'What is the reason?

- Do you usually go to this place on foot, or do you use other means of transportation?

    - If the participant does not walk to go to these areas: ask, 'Why don't you prefer walking? Can you explain in detail?

- Do you think you can easily access this place?

6) **What are the places in your neighborhood that you want to go but least go to?**

(The following question was repeated for each separate place said)

- Why do you rarely go to this place? (Does the physical environment have an effect?)

7) **People of all ages have different expectations from their environment. For example, children want accessible playgrounds, and teenagers want accessible places to meet their friends more. What are some areas or places in your neighborhood that you would like to, especially when considering the needs of your age? What kind of places would you like to be more accessible? Can you explain why?**

Now I am going to ask you some questions about your neighborhood. I want you to give one of three answers: yes, no, or partially. If you wish, you can add your comment after giving these answers.

	Yes	No	Partially
8) Are there enough street signs to guide you in your neighborhood?			
9) Are street lightings sufficient in your neighborhood?			
10) Is environmental cleanliness sufficient in your neighborhood?			

11) Can you easily reach the bus stops in your neighborhood?			
12) Are accessible green spaces and recreation areas sufficient in your neighborhood?			
13) Are benches or places to rest enough to be protected from the sun and/or wind in your neighborhood?			
14) Does your neighborhood consist of walkable streets?			
15) Are the walking paths in the park/green areas or on the roadside sufficient in your neighborhood?			
16) Are the walking paths in the park/green areas or on the roadside safe in your neighborhood?			
17) Are the width and height of the sidewalks sufficient in your neighborhood?			
18) Are the sidewalks in your neighborhood durable and safe?			
19) If there are stairs in your neighborhood, are their width and height sufficient?			
20) If there are stairs in your neighborhood, are they durable and safe?			
21) Do you cross the street easily in your neighborhood?			
22) Are there areas for courses, concerts and similar events in your neighborhood?			

23) Have you ever been harmed by physical street elements (sidewalks, stairs, etc.)? If you were harmed, what was the reason?

24) In light of all that you had discussed, when you evaluated the physical environment of your neighborhood, to what extent would you rate your neighborhood as the right place to age?

I would never want to age in a neighborhood like this.	I wouldn't want to age in a neighborhood like this.	I'm neutral about aging in a neighborhood like this.	I would like to age in a neighborhood like this.	I would definitely love to age in a neighborhood like this.
1	2	3	4	5

- **What is the reason for your evaluation in this way?**

25) What is your education level?

□No educational background

□Elementary school

□Secondary school

□High school

□University /College and above

26) What is your working status?

□Employed

□Unemployed

□Retired

□Retired and still employed

27) How is your general state of health?

□Very good

□Good

□Average

□Bad

□Very bad