UNDERSTANDING URBAN ACCESSIBILITY OF PERSONS WITH REDUCED MOBILITY: ANALYSIS OF LEGAL, SPATIAL, SOCIETAL, AND ADMINISTRATIVE BARRIERS

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ABSTRACT

UNDERSTANDING URBAN ACCESSIBILITY OF PERSONS WITH REDUCED MOBILITY: ANALYSIS OF LEGAL, SPATIAL, SOCIETAL, AND ADMINISTRATIVE BARRIERS

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Accessibility is a right for all. To access urban services, spatial components of urban space needs to enable each single possible trip routes free from any barriers; barriers related with legislative framework, urban space, society, and administration. In this respect, right to access stands as a well-covering concept as a starting point to understand the barriers against accessibility. The literature suggests that the Right to the City and accessibility through independent mobility are related with each other considering inclusive accessibility as a chain for persons with reduced mobility (PRMs). However, in practice, even if accessibility rules are well-defined, it is obvious that accessibility still stands as a crucial problem full of spatial, societal, and administrative barriers. As the origin of questioning the accessibility concept, the research intention began with understanding those barriers. Furthermore, analysis of current resarches, socio-demographic situation, and legal framework in Turkey reveal that there is a gap that needs to be studied and critically discussed. Differences in perspectives and in philosophical approaches make significant changes in the way that accessibility and independent mobility is perceived; and this understanding

constitutes the fundamental baseline of the research and the originality of methodology, which is composed of researcher perspective for legal system analysis and spatial case study analysis, and user perspective through focus group discussions. The three research methods of the thesis are desk research, case study research, and focus group discussions. The main research question is: '*How do legal, spatial, societal, and administrative aspects of accessibility, as interdependent processes, create barriers that prevent PRMs from exercising their right to access in Turkey?*' and the main hypothesis is '*Right to access is a right for all and the way to have accessible cities is possible as long as a comprehensive accessibility framework is ensured including four interdependent aspects: legal, spatial, societal, and administrative*.' At the end of the research, it is revealed that a well-defined legislative framework of accessibility exists in Turkey, however there are notable spatial, societal and administrative barriers against the right to access. This research fills the gap by means of understanding the barriers; not the barriers merely focusing on legal and/or spatial as most studies tend to do, but barriers for accessibility composed of interdependent legal, spatial, societal and administrative aspects.

Keywords: Accessibility, Right to the City, Right to Access, Disability, Independent Mobility

ÖZ

HAREKET KISITLILIĞI OLAN BİREYLERİN KENTSEL ERİŞİLEBİLİRLİĞİNİ ANLAMAK: YASAL, MEKANSAL, TOPLUMSAL VE İDARİ ENGELLERİN ANALİZİ

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Erişilebilirlik herkes için bir haktır. Kentsel hizmetlere erişebilmek için, kent mekanının tüm bileşenleriyle olası her kensel ulaşım güzergahı tüm engellerden arınmış olması gerekir. Belirtilen engeller yasal çerçeve, kentsel alan, toplumsal durum ve yönetim ile ilgili engellerdir. Bu açıdan erişim hakkı, erişilebilirliğin önündeki engelleri anlamak için başlangıç noktası olarak geniş kapsamlı bir kavram olarak karşımıza çıkmaktadır. Teorik çerçeve, kapsayıcı erişilebilirliği hareket kısıtlılığı olan bireyler için bir zincir olarak ele alarak, Kent Hakkı ve bağımsız hareketlilik aracılığıyla erişilebilirliğin birbiriyle ilişkili olduğunu vurgulamaktadır. Ancak uygulamada, erişilebilirlik kuralları iyi tanımlanmış olsa bile, erişilebilirliğin mekansal, toplumsal ve idari engelleri içeren çok önemli bir sorun olduğu açıktır. Bu araştırma, erişilebilirlik kavramını sorgularken öncelikle bu engelleri anlamakla başlamaktadır. Ayrıca, Türkiye'deki mevcut araştırmaların, sosyo-demografik durumun ve yasal çerçevenin analizi, araştırılması ve eleştirel olarak tartışılması gereken bir boşluk olduğunu ortaya koymaktadır. Hangi bakış açılarıyla ve hangi felsefi yaklaşımlarla konunun ele alındığı araştırmanın dayanak noktasını oluşturmaktadır. Tez kapsamında araştırmacı bakış açısıyla gerçekleştirilen yasal

analiz, mekansal alan çalışması yoluyla elde edilen analizler ve odak grup toplantıları aracılığıyla kullanıcı bakış açısıyla yapılan edinimler araştırma metodolojisinin kökenini oluşturmaktadır. Tezin üç araştırma yöntemi bulunmaktadır. Bunlar mevcut durum araştırması, alan çalışması araştırması ve odak grup tartışmalarıdır. Temel araştırma sorusu '*Erişilebilirliğin birbiriyle bağlantılı süreçler olarak yasal, mekansal, toplumsal ve idari yönleri Türkiye'de hareket kısıtlılığı olan bireylerin erişim haklarını kullanmalarını kısıtlayan engeller nasıl yaratıyor*?' ve ana hipotez ise 'Erişim hakkı herkes için bir haktır ve erişilebilir entlere sahip olmanın yolu, birbiriyle ilişkili dört yönü içeren kapsamlı bir erişilebilirlik çerçevesi sağlandığı sürece mümkündür: yasal, mekansal, toplumsal ve idari.' Araştırmanın sonunda, Türkiye için kapsamlı bir kentsel politika ve kurallar çerçeve ortaya çıkmaktadır. Ancak erişim hakkının önünde önemli mekansal, toplumsal ve idari engeller bulunmaktadır. Bu araştırma, belirtilen engelleri anlayarak mevcuttaki boşluğu doldurmayı amaçlamaktadır. Araştırma kapsamında yalnızca yasal ve/veya mekansal olana odaklanan engeller değil, birbirine bağlı yasal, mekansal, toplumsal ve idari yönlerden oluşan erişilebilirlik engellerinin araştırılması amaçlanmaktadır.

Anahtar Kelimeler: Erişilebilirlik, Kent Hakkı, Erişilebilirlik Hakkı, Engellilik, Bağımsız Hareketlilik

To my peerless Büşram,

and my precious sweety son; Ömer Alp

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CHAPTER 1

INTRODUCTION

There could not be a term as 'disabled person';
there could only be disabler cities and people.

Accessibility is a right for all. Experiencing daily life is a complete challenge for a significant group of people. If urban space serves as a barrier, the problem starts from this point that is a matter of access.

A practical prospective experience designed by combining each single pieces of specific user experiences[1] gives an opportunity to have a quick-view from the big picture. This story is fictional, but combined by pieces of true stories and prospectively is an ordinary daily case for persons with reduced mobility.

> Today is Sunday. I want to read a book in the park within walking distance (walking distance counted for able-bodied people) of my home. This activity is not a routine for me every Sunday, this is a pre-planned special activity, because it is important for me to be able to achieve this. There are many obstacles against me to reach the park and return back to home. First of all, I open the door of the apartment and begin my journey. I have already learned how to cross the threshold in front of my apartment thanks to my past experiences, I am able to do it when I push the wheels of my wheelchair quickly and suddenly stop when I cross the threshold. In this way I normally achieve the threshold without dropping. Since I live in an apartment block with an elevator, I know that I can go to the entrance of the building without

[1] This story is a fictional case composed of different user experiences. Those user experiences were obtained from the focus group discussions that were carried out within the framework of the case study of the thesis that is mentioned in Chapter 6.

facing any problems. One of the other neighbors waiting for the elevator with me open the door. Once the door was opened by my neighbor, there was a level difference between the elevator cab and the floor. Other people who were waiting for the elevator together immediately push my wheelchair and help me get into the elevator cab. When I exit the elevator, I move towards the entrance of the building. I know that I will reach the pedestrian sidewalk when I use the disabled ramp slowly connecting the building entrance to the pavement level, which was built as a result of long efforts in consultation with the apartment building management. My action needs to be slow because the slope of the ramp was not made with the standards in terms of its gradient. I think that since the pavement from the building entrance to the next road intersection is made of asphalt material, I can proceed smoothly. Because in this part of the pavement, there are no garbage bins, no plates, no broken surfaces as barriers for me. However, when I proceed towards the road crossing, I see that a car was parked right in front of the disabled ramp made for my use. After sticking the warning stickers on the window of the vehicle that I carry in my pocket, I turn back from the pavement and arrive to the street using the ramp in front of the building I live, and I aim to follow the same route by using the side part of the road, which is very dangerous. I know that I am putting my own safety at risk with this choice, but I think I have to do this to move forward. I proceed from the road and I pass near my first big barrier -the parked car that I sticked warning sticker-, and reach the next curb using the ramp again. I know that I will reach the park after this segment of the pedestrian sidewalk, but while walking on the pavement in this part, I encounter small pits, posts, advertisement boards and sudden level differences against me. I managed to pass this part of the pavement in about 5 minutes without luckily dropping my wheelchair, where a normal able-bodied person would pass in 30 seconds. I know that there is a bus stop close to the end of the sidewalk and that there is only enough space for a person to walk through, not for a person with wheelchair. Therefore, I proceed, hoping that there will be people waiting at the bus stop (to help me get down to the vehicle road, as there is no ramp in front of the bus stop). Fortunately, there were... People waiting at the bus stop lift my wheelchair from both sides and lower it to the road. After many barriers blocking my access on the pavement, I now decide to continue the rest of the route from the vehicle road. Finally, I will reach my destination when I cross the signalized junction in front of me. I wait for the red light to turn green like all other people. When it turns green, I try to speed my wheelchair across, noticing that the light suddenly turns green for vehicles and red for pedestrians. It's only halfway through the crossing for me. Vehicles that start to move stop when they see me and other vehicles waiting behind are constantly honking because they do not know why the traffic is not moving. Then, one of the other pedestrians comes to help and quickly drives my wheelchair across. I now reach the entrance of the park. Having achieved the part of my journey so far, I do not give up and enter the park looking for a shaded area. I find a sitting bench having

> difficulties with the cobblestone material of the hard floor. Since there is no space on either side of the bench where I can approach with my wheelchair, I carefully move my wheelchair towards the grass. At the end of this long journey, I begin to read my book with the joy of open air. However, my mind is distracted by questions: how could I go back the same route without going through the same difficulties? What actions should be taken so that I will able to return home like other people and without seeking any help from anyone?

In 2015, a remarkable step was taken in policy making about legislative structure in Turkey, ensuring people with disabilities to have new rights by means of accessibility, which is the Law on People with Disability, Law No. 5378. However, there are three misunderstandings on this respect that make the accessibility legal structure somehow not as effective as expected. First, the target group was limited to people with disabilities; however, there are many other persons experiencing reduced mobility in daily life. The second is the implementation problem: how the problems in physical environment and societal perception are to be solved; what the responsibility and authority allocation in this sense needs to be. And the third one stands as the most prominent question: what are the main beneficiaries of accessibility measures? Who are people with reduced mobilty and how do they percieve and approach the problem?

A city is a place where people live, behave and interact with each other, and the connection between urban activities are to be possible through mobility and accessibility. Initially, some onthological bases need to be noted to ensure the right to live in dignity for each individual, which constitute some of the most prominent values for every single member of urban life: equality, human rights and freedom.

Social values are obvious and clear. On the other hand, ableism is one of the most extreme version of discrimination that tends to diagnose people by means of their differences, more specifically of their capability of mobility. Campbell (2001) defines ableism as:

> Ableism refers to a network of beliefs, processes and practices that produces a particular kind of self and body (the corporeal standard) that is projected as

> the perfect, species-typical and therefore essential and fully human. Disability then is cast as a diminished state of being human.

It corresponds to the first perceptual paradigm of disability theory, which considers people with disabilities as medical cases. Ableism is the naming of discrimination in favor of able-bodied individuals, and unfair treatment suffered by individuals who have a physical, mental or spiritual differences on the grounds that they are not complete considering their differences. Today, although extreme approaches as ableism are not directly and clearly accepted in modern societies, the reflections of this concept on urban space in different forms often evoke ableism. As a consequence of the falsified approach -by this research- that the able-bodied person, who considers himself/herself as the majority of the society, is superior to people with disabilities or any other person with reduced mobility, the urban space has been the most prior place where such discriminations are experienced and observed in the sense of accessibility.

Human beings have social and physical needs. First and foremost, mobility skill owns one of the top ranking among the needs to be able to find shelter, food, work, establish social relations and discover what he/she can do and achieve as a unique subject of daily life. Shopping, working, earning money, drinking coffee on the street, socializing through face-to-face communication, transferring information and learning, developing personal knowledge inventory, and sharing what has been learned by experiencing the Right to the City in public space are just a few of the activities that pave the way for self-actualization. All these are parts of daily urban life and rights come along with values. To be able to obtain and pursue these rights, as the fundamental requirements of the right to live in dignity, the indispensable prerequisite is to have mobility capabilities or enabled mobility opportunities for all within the framework of equality, human rights and freedom values that all arrive the aproach of right to access. However, it is not enough to have ability to be mobile as an able-bodied person; that is, the ability of a person to meet his/her needs from the lowest to the highest in Moslow's hierarchy of needs depends on the following condition: people must either be free of any disability or not get disabled by others

to meet social and physical needs. In other words, there could be disabler aspects in societal and administrative aspects of daily life. As a consequence, right to access is only possible with an accessible urban environment and sustainable social quality that will establish and pursue urban policies that will sustain the future of an accessible environment. While taking all these actions, the individual must be free from any dependency to others help. Therefore, the prominent concept of all these requirements is independent mobility.

Independent mobility is the ability of a person with reduced mobility to be mobile without assistance from one point to another in the city, which is expected to be free from any socio-spatial barriers. For a person with disability, as one of the members of persons with reduced mobility, the more inaccessible the urban space is, the more help has to be demanded to overcome the spatial barriers. Therefore, accessibility is complemented by independent mobility concept as a key factor to achieve the right to access for all. In case that all socio-spatial assets of the urban were enabled to be experienced by all, independent mobility would become a key priority to obtain the right to the access and all other human rights.

The values in accordance with the Right to the City and accessibility are obvious. Without considering spatial, societal, and administrative aspects of accessibility, right to access as one the most prior human rights has become challengeable. The very first step to pave the way towards the right to access is to define the barriers. A noteworthy fact has arisen along with this research that there are not only spatial but societal and administrative barriers against accessibility. The framework of this research is drawn as that there is a need to eliminate spatial barriers and sociatal disabler perception as the urban belongs to all.

1.1 Research Questions and Hypothesis

- **Main Research Question**

- How do legal, spatial, societal, and administrative aspects of accessibility, as interdependent processes, create barriers that prevent PRMs from exercising their right to access in Turkey?

- **Research Sub-questions**

In terms of right to access

- What is the relationship between the concepts of accessibility and the right to the city?

- What is the meaning of right to participation by means of accessibility of PRMs?

- The Right to the City is a collective right for Harvey (2008); what does this mean for accessibility of PRMs?

- What does independent mobility bring about by means of right to access?

In terms of legal aspect of accessibility

- Is the legal framework one of the underlying reasoning behind inaccessibility of cities in Turkey?

In terms of spatial aspect of accessibility

- Are there spatial accessibility barriers in Turkey? If yes, what is spatial accessibility level?
- Do the spatial accessibility barriers prevent PRMs to ensure their right to access?

- Is car dependency an accessibility barrier for PRMs to ensure their right to access?

- Can accessibility be related with urban land-use structure, socio-economic status, and service of urban rail systems?

- What are the spatial accessibility barriers experienced by parents with baby stroller?

In terms of societal aspect of accessibility

- Are there any discriminative measures towards people with disabilities in Turkey by means of accessibility?

- Are people with disabilities the only group of beneficiaries for accessibility measures?

In terms of administrative aspect of accessibility

- If car dependency is an accessibility barrier for PRMs, is it a spatial, or administrative or both spatial and administrative accessibility barrier?

- What would be the way for a city to become accessible within the current system of neo-liberal urbanization? (from administrative aspect)

- **Hypothesis and Guiding Principles-Assumptions**

-**Hypothesis:** Right to access is a right for all and the way to have accessible cities is possible as long as a comprehensive accessibility framework is ensured, including four interdependent aspects: legal, spatial, societal, and administrative.

-**Guiding Principles and Assumptions:**

- Accessibility is a right for all.

- In Turkey, there are accessibility barriers about spatial, societal, and administrative aspects interdependent to each other. Eliminating only spatial, or only societal, or only administrative barriers will not be able to solve accessibility problematic.

- Independent mobility is a prerequisite for sustainable right to access.

- Persons with reduced mobility are the primary beneficiaries who can define barriers of right to access in the most accurate manner.

- Car dependency creates spatially inaccessible urban spaces and social exclusion between PRMs and able-bodied people.

- Mobility related social exclusion is a significant barrier of accessibility

- Accessibility is composed of interrelated links as a chain, therefore making only one single link accessible will not solve entire accessibility problematic.

- Creating spatial accessibility GIS database needs to be one of the primary objectives of policy-makers.

- Focus group discussions are one the most effective way to acquire user perspective.

- Accessibility analysis over parents with baby stroller is a reasonable start for the change the perception from people with disabilities to PRMs.

- Combination of user perspective with researcher perspective gives the closest understanding of barriers against right to access to the reality.

- Along with aging population in Turkey, unless necessary planning, societal and administrative precautions are taken, accessibility of cities will get worse.

1.2 Methodological Approach

Positivism and interpretivism are the main philosophical approachs to acquire the knowledge about the existing reality, which is a set of accessibility barriers sourced prospectively by legal framework, spatial, societal and administrative aspects. The stages of research methods are;

- **Desk research** for the review of legal framework
- **Case study method** for on-site accessibility GIS analysis
- **Focus group discussions** for the analysis of user perspective

In the thesis research, researcher perspective statement is used for the researches that need to be examined through an external outlook, and the data is obtained about the reality, and processed accordingly by the researcher. No interpretation about or intervention into the data acquiring process is done and all the data are objectively processed. On the other hand, user perspective is to obtain qualitative data through focus group discussions with an interpretivist approach. Within this perspective, data obtaining is a subjective process generated by the contributions, discussions,

argumentations and compromises among participants. Table 1.1 presents what each research method deals with from which perspective.

Table 1.1. Research Methods, Problems and Perspective

	Researcher perspective		User perspective
Research Method	Desk research: analysis of legal framework	Case study research: On site spatial accessibility GIS analysis and mapping	Focus group discussions
Problem	Does the legal system in Turkey create barriers?	-Spatial barriers (Sidewalk, ramp, crossing, public transport, parks)	-Spatial barriers -Societal barriers -Administrative barriers

The details about area selection, data collection and research design are mentioned in Chapter 4, the methodology of the research.

1.3 Structure of the Thesis

The thesis research is composed of seven chapters. Chapter 1 constitutes the introductory part of the approach as an introduction that briefly summarizes the current discourse on the right to access context, research questions hypothesis and guiding principles, a summary of methodological approach, and research outline.

In Chapter 2, theoretical framework is depicted starting from the most general conceptual basis of all discussions that is the Right to the City. In the first part of this chapter, the main aim is to show that the Right to the City is a highly interlinked concept with right to access and independent mobility. Figure 1.1 shows the flow of key concepts from the more general the Right to the City concept to a specific one independent mobility, and the topics that they interrelate. In the second part, accessibility literature review is done over selected international publications and the national ones -the ones that carried out studies on Turkey-. At the end of the theoretical framework chapter, it is seen that there is an urgent need to investigate the concept of right to access from different perspectives.

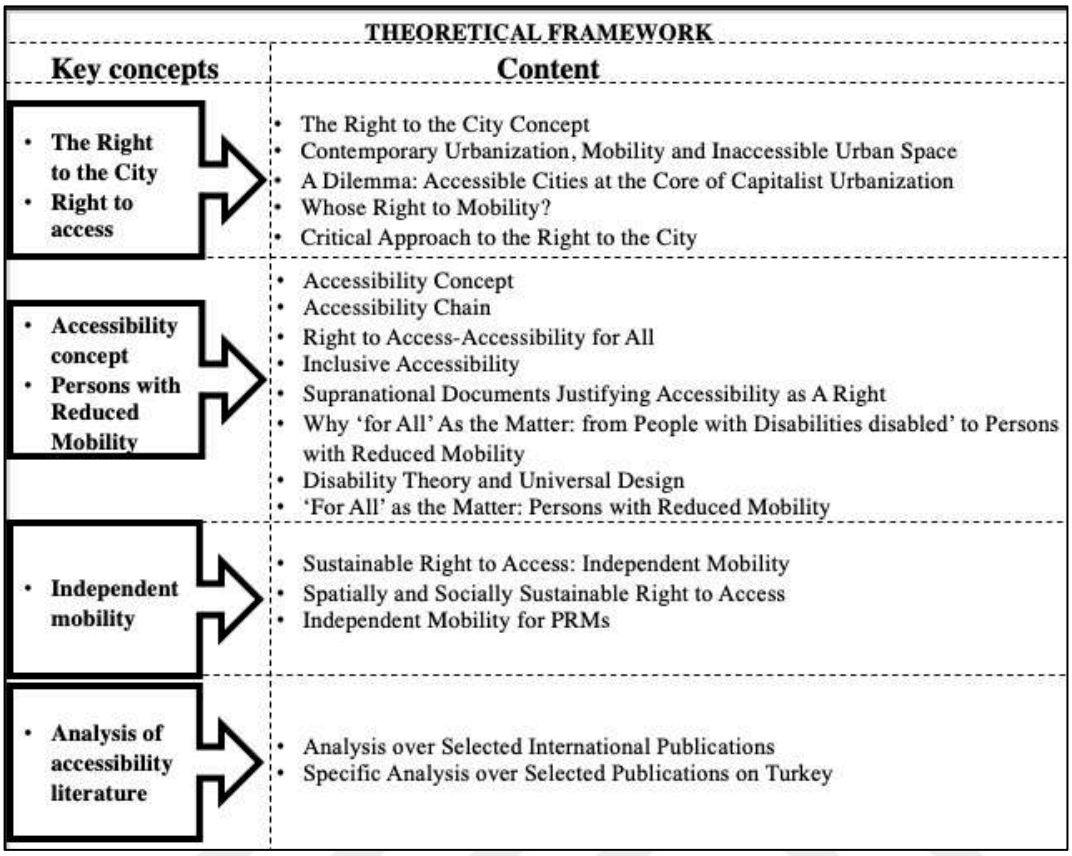


Figure 1.1. Main Structure of Theoretical Framework in Chapter 2

In Chapter 3, accessibility context in Turkey, the current condition about disability and accessibility is shown under two main aspects, socio-demographic indicators and legislative framework analysis. Socio-demographic indicators part is composed of graphs showing that accessibility barriers and aging population are urgent topics for Turkey. Legislative framework analysis part is composed of supranational documents, main legal documents, and technical standards. The main aim is to constitute the basis of the answer to the question: 'Is the legal framework one of the underlying reasons behind inaccessibility of cities in Turkey?'

Chapter 4 is the methodology chapter. The research methodology is explained by mentioning the research context, which paves the way for study objectives, hypothesis, and research questions, a philosophical approach to reveal production of

knowledge methods in line with the research questions, and eventually, the clarification of each research method, which includes the rationale for case area and sample group selection, as well as the data collection process.

The next two chapters go through the specifications of the research that was undertaken. In Chapter 5, a GIS tool to was used to conduct spatial case study analysis in four locations in Ankara: Bahçelievler, Beştepe, and Söğütözü Neighborhoods, as well as a section of Atatürk Boulevard -in Kızılay, Ankara's core city center-. The main goal is to analyze urban spatial barriers in selected case locations in order to develop an understanding of the condition of spatial accessibility in Ankara.

The user perspective is examined in Chapter 6 through focus group discussions. There were 12 discussions with a total of 32 participants that reside in Ankara. The prior aim is to obtain opinions of participants about spatial accessibility barriers and open-ended discussion questions addressing the meaning of accessibility, accessibility as a right, and questioning the underlying problem of accessibility in Turkey. At the end of focus group discussions, ultimate qualitative data are revealed under two groups: a discussion defining right to access and statements of different dimensions of accessibility barriers in Turkey (legal, spatial, societal, and administrative).

The conclusion chapter, Chapter 7, critically analyzes right to access and the findings of conducted researches by taking research topics and hypothesis into account. The thesis research addresses a significant gap in the current accessibility debate. Right to access is a right for all and the way to have accessible cities is possible as long as a comprehensive accessibility framework is ensured, including four interdependent aspects: legal, spatial, societal, and administrative.

CHAPTER 2

THE RIGHT TO THE CITY AND INDEPENDENT MOBILITY FOR ALL

2.1 Right to the City and Its Mobility Aspect

The Right to the City is a concept initiated firstly by Lefebvre (1968) in his book with original name as 'Le Droit à la Ville'. This concept has become one of the most prior component of urban studies and planning agenda as well as human rights associated with urban development. In contemporary global supra-national policy making and acting authorities in USA and Europe such as World Bank, European Union UN Habitat and U.S. Department of Justice Civil Rights Division (ADA) have taken Right to the City concept into account in a more comprehensible and practical manner in their documents to emphasize social inclusion through human rights discourse.

In the contemporary agenda, the Right to the City concept has become the subject of charters published in different parts of the world, such as World Charter for the Right to the City, the European Charter for Human Rights in the City, and the Montreal Charter of Rights and Responsibilities (Purcell, 2013). A summary of the concept is presented in the Global Charter-Agenda for Human Rights in the City as;

> All city inhabitants have the right to a city constituted as a local political community that ensures adequate living conditions for all the people, and provides good coexistence among all its inhabitants, and between them and the local authority…The city offers its inhabitants all available means to exercise their rights (UCLG Committee on Social Inclusion, 2016).

In the World Charter for the Right to the City (International Alliance of Inhabitants, 2015), the Right to the City is defined, to target enhanced individual and social well-being along with increasing economic wealth for all, as;

> All persons have the Right to the City free of discrimination based on gender, age, health status, income, nationality, ethnicity, migratory condition, or political, religious or sexual orientation, and to preserve cultural memory and identity in conformity with the principles and norms established in this Charter… The Right to the City is defined as the equable enjoyment of the cities while respecting the principles of sustainability, democracy and social justice, and is a collective right of all city inhabitants especially the vulnerable and disfavoured on whom is further conferred legality for such actions and organisation as their culture and custom suggests as a means of achieving the complete enjoyment of the right to an adequate standard of living

These two charters are to be considered as the introductory initiatives for the presentation of the Right to the City concept in the contemporary discourse. Below mentioned keywords are to be inferred from them as;

- Adequate standard of living

- Equality for all

- No discrimination

- Social justice

- A collective right for especially vulnerable groups

Under the light of those keywords, as the preliminary bases of for the formation of the research idea, the current emphasis of the Right to the City needs to be done on the statement that the whole society, including individuals and policy-makers, have the responsibility to ensure equality by means of without disabling human rights -for which urban space has become the scene for those rights to be performed- providing independence for all. In this respect, the rights in cities can only be performed by achieving mobility between urban services and activities. In other words, without being mobile for an individual from home to work, it is impossible for her/him to achieve economic independence; in addition, without enhanced capability for a disabled person to go to a park and make face-to-face communication with others, it is not possible for her/him to improve mental inventory, to generate new ideas and to change the minds of others as well as the city. In this respect, it is prior to present

the relationship of the Right to the City and its mobility aspect; and beforehand, it is necessary to understand the essence of the Right to the City to pave the way for the current understanding of concept.

2.1.1 The Right to the City Concept

To understand the concept and establish a link with urban mobility, it is wise to begin with the prior definitions and describe the essence of the discussion between the terms; 'city' and 'right'. Lefebvre (2015) considers the industrialization process as the most prior source of the urban problem. The triggering force created by the industrialization process in the change of society is an indisputable reality. The industrialization process has brought fundamental changes and transformations in cities. Lefebvre particularly emphasized the historical and cultural aspects of pre-industrial cities and stated that the original aspects of the cities were destroyed with the industrialization and urbanization processes.

Lefebvre indicates a remarkable change in his Right to the City understanding, which includes a spatial comprehension of politics meaning that urban place is positioned at the very center of politics (Purcell, 2013). According to Lefebvre (1996), Right to the City is a challenge of removing the alienation of urban space, and to re-integrate into social connections; meaning that, the Right to the City involves inhabitants appropriating space in the city. In other words, inhabitants live in and take urban space collectively in which social connections and self-actualization to be performed. In this framework, Purcell (2013) further explains Lefebvre's concept by mentioning that appropriation is thus a way to rethink the concept of rightful ownership, to radically transform our understanding about who rightfully owns the city. The simplistically noted radical alternative proposed by Lefebvre is that the city belongs to those who inhabit it; that is, making urban space the city owned by its inhabitants as areas of learning, encounter, play, connection and connectivity.

In Lefebvre's approach (2003) as the formation of the basis of the essence of the concept, urban projects, strategies and policies affects daily life of all individuals in

society, and Lefebvre considers the passivity of those individuals as well as lack of participation of them in social life as significant problems while they have been affected from those projects and other policy-making activities. He questioned why we experience this silence and what the reasoning behind it is. From another perspective, he mentioned the effects of industrialization resulted in gentrified neighborhoods and removal of people from urban spaces that they belong to. This situation also brought fragmented communities, and exploited urban spaces.

The individuals remain themselves as passive and isolated social beings while many urbanization and social development progresses have been happenning in outer world. Besides, those individuals have still been experiencing a gentrification process resulted in their removal from the cities or urban spaces they own. The question to be asked here is, what about the ones having the desire to re-appropriate their city -not passive ones-, but having enough economic or physical capability to pursue the Right to the City.

The right to city concept is composed of two fundamental rights for urban inhabitants; right to participation and the right to appropriation (Purcell, 2002). Participation is considered as an indispensable necessity for the Right to the City concept; that is, citizens are not able directly to participate in policy making processes other than advisory voices in decisions. Along with the participation, urban inhabitants experience an awakening; they feel themselves embedded into social connections as well as 'the urban' (Purcell, 2013). Secondly, appropriation is another fundamental right in Lefebvre's concept. In his book 'Writings on Cities', appropriation is noted as follows:

> Not only is appropriation the right to occupy already-produced urban space, it is also the right to produce urban space so that it meets the needs of inhabitants. Because appropriation gives inhabitants the right to 'full and complete usage' of urban space in the course of everyday life (Lefebvre, 1996).

Appropriation simply means a process to and getting the control over cities and urbanization processes by urban dwellers. Coming together independently,

interacting collectively without having any oppression, and expressing ideas as free standing individuas are some of the key prerequisites of actualization of the Right to the City through appropriation of urban space.

In relation to this, Lefebvre (2015) states the use of urban space and the Right to the City as:

> Right to city should modify, concretize and make more practical the rights of the citizen as an urban dweller and user of multiple services. It would affirm, on the one hand, the right of users to make known their ideas on the space and time of their activities in the urban area; it would also cover the right to the use of the center, a privileged place, instead of being dispersed and stuck into ghettos (for workers, immigrants, the 'marginal' and even for the 'privileged').

One of the most prior point to be highlighted is that city center is the most vibrant and admirable place for dwellers to visit for variable purposes, and the use of it belongs to all people in the city -as a right covering its all accessibility measures. In other words, accessing a part of a city -such as center, working area, square- stands as a prerequisite complement for the Right to the City.

In this regard, the urban involves inhabitants engaging each other by establishing meaningful interactions, through which they overcome their separation, come to learn about each other, and brainstorm together about the meaning and future of the city. Therefore, the flow of ideas and approaches among people make apparent to each inhabitant their existence in and dependence on a network of social connections (Purcell, 2013). This social connection and innovative collective thinking process results in the generation of new ideas and improve the well-being of each individual. In order to flourish the appropriation of urban space (Lefebvre, 2015), it is critical to experience togetherness on urban space, at different locations (squares, parks, offices or residential units), with different individuals having differentiated philosophy of life, ideas to change the worls as well as their cities. Therefore, each individual must be equal in the sense of having the ability or capability to move -namely access- and communicate in urban environment.

To mention the emphasis of the concept regarding collectivity and togetherness, there is a need to state that the city is composed of various resources and advantages that pave the way for the Right to the City not only to be considered as a unique individual right (UN-Habitat, 2010), but also as a collective right to be gained by transforming ourselves as well as our urban space through collective power to redefine urban form, as Harvey noted (2008). The right to the City, not to be considered as a simple right to visit or a pursue to return to traditional cities, is to be understood as the right to urban life regenerated and renewed. The right to the City is not only the right to move around the city, it is certainly the right to participate in urban life at the core center. It is not possible to achieve the experience of a city and fair urbanism without ensuring collectivity and togetherness within urban space. Lefebvre complains the exclusion of some groups in the society as not only an exclusion from social life but also an exclusion from being a civilized individual in the society (Şen, 2012). Furthermore, the collective action for the process of urbanization is implied by Harvey in his text that the concept is 'far more than a right of individual or group access to the resources that the city embodies' (Harvey, 2012). Collectivity is a significant keyword in Harvey's understanding of the concept excluding any sort of discrimination among people to obtain their right to inhabit, live and change urban space, which highly depends on having the ability to be mobile and the capability to access to space.

The Right to the City concept has been further developed by the contributions from a more political and economistic perspective comprehension of the city, from David Harvey (1973) and Manuel Castells (1977), who approach the city and urban space as mostly the result of the capitalist production processes. These two urban scholars aimed to develop the concept of the Right to the City by criticizing and improving the scope of it.

According to Harvey (2003), the city has always been an harmonious arena covering confusions, conflicts and violance, which are the result of a pursuing process behind to obtain human rights. In this regard, Plyushteva (2009) defined this process as a

matter of pursuing citizenship rights, beyond definins the city as a mere right of each individual.

Harvey (2008) made a conceptualization of the concept from a more political perspective as:

> The right to the city is far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city. It is, moreover, a common rather than an individual right since this transformation inevitably depends upon the exercise of a collective power to reshape the processes of urbanization The freedom to make and remake our cities and ourselves is one of the most precious yet most neglected of our human rights… The Right to the City can be both the slogan and the political project of a global urban revolution, as it has the unifying potential to connect diverse social movements on an international scale and expose the links between urbanisation, social in/justice and marginalisation.

It is a right beyond the well-being of any single individual in the society. In Harvey's understanding related to political practices, the city has been taken from the hands of the real owners of it for the sake of the continuation of capitalist cycle. In this sense, this reclaiming process for the city is to be called as a political project that involves the removal of injustice embedded in urban space. Harvey (2003) further elaborated his approach by highlighting that the Right to the City cannot be simplified as an obtaining process of a simple legal demand, it is a moral demand beyond from being a kind of a freedom of individual reach to urban resources. Instead, changing ourselves through changing cities is the essence of the concept. In addition, it is not an individual; but a common and collective right since this transformation depends inevitably on the use of a co-operative power to re-shape urbanization processes. It is more likely to be the establishment of a democratic management on the use of surplus value by changing ourselves and determining our future through changing cities. However, unluckily, the current practices that we experience related to the Right to the City focus on belonging to a small political and economic elite group of people, and there is an urgent need for a reclaiming movement. To a chieve this, it is necessary get organized and have the struggle to rise the voice of the individuals to contribute the production of daily life.

The right to the City also covers a political struggle. One of the prominent point here is how urban space as well as the city will be produced, and who take the role to achieve it. According to Harvey (2012), the Right to the City is a collective right, and it includes each single person who contributes to the production of daily life. In this respect, the concept is a broad term containing all the workers and laborers; in most cases, it has a flexibility that can even include the demands of those who deteriorate urban environment through rent focused policies and strategies. Moreover, the target of the concept is mainly the middle class (Şengül, 2015).

The discussion on the concept has heretofore been about to generate a critical question: who currently owns the Right to the City? The answer is supposed to be the entire society, each single individual, but in a collectively owned and used manner. To reveal an evident fact related to the contemporary urbanization practices, Harvey (2008) highlights the relationnship between that who owns the 'right' and urban issues. In line with his approach, the Right to the City has been obtained by private interests restricted to a small group of people from political or economic management elites of cities that has the risk for the urban development to be shaped conforming to their own desires. As the most prominent sub-issues of the concept - the right to appropriation and participation- standing out as significant human rights, have the dispute to be neglected and ignored in the current agenda.

The Right to the City was further developed and reformed by Castells (1977) in terms of production of space, who puts forth contradictions in Lefebvre's notions about spatial appropriation and production of space stating that:

> Lefebvre is aware of the excessively crude character of the thesis according to which mere spatial concentration makes possible the flowering of new relations, as if there were no social and institutional organization outside the arrangement of space. This is why he adds the condition: providing this concentration is free of all repression; this is what he calls the right to the city. But the introduction of this corrective destroys any causal relation between the form (the city) and human creation (the urban).

In line with this view, the Right to the City is to be considered as a concept associated with urban form and human factor. Specifically, barriers against a part of the society

or a single person to have the ‘right’ could be created by urbanization practices (i.e. taking away a public park and transforming it into private use) and human-social creation (i.e. social exclusion and discrimination).

In this regard, Castells (1977) contributed a remarkable concept to the literature as Urban Social Movements. Structural contradictions of late capitalist societies are articulated, and it has enabled bringing together labor unions and political parties, and triggered a fundamental change in politics and society. Similar to Harvey, Castells (2015) considers the right to the city as a collective right rather than an individual right. The main aim with the Right to the City is for each individual in society to have a just and more equal urban space. It can be conceptualized as the right of citizens to have a word about their city and to form and reform it. Castells considers urban social movements as the main determinant of urban change. According to Castells, the Right to the City can only be achieved and preserved through urban social movements.

The initial foundation of the concept is a class based discourse through a Marxist point of view in terms of economic and political meaning of social movements. Lefebvre, Harvey and Castells similarly think that the Right to the City comprises equal appropriation of inhabitants to the potential benefits of cities, participation of inhabitants in decision making processes, and ensuring the achievement of fundamental rights and freedoms of inhabitants.

Harvey defines the urban problem over the role of urban built environment in capitalist cycle process; and, Castells put collective consumption and interventions around it to the core of his studies. Urban conflict and the Right to the City are the concept linked with each other by Harvey over class and capitalist production and urbanization processes; by Castells over class and urban social movements based approach. Lefebvre has firstly initiated the concept focusing on transformation and re-production of urban space. Besides, Harvey further explained that urban space has not only a dimension that shapes the people, but also is shaped by the people. According to Lefebvre, Right to the City is a complete shifting the control of

decisions about urban environment from capital and state to inhabitants; therefore, there is a need to restructure power relations which constitutes the base of the production of urban space. However, Harvey develops this view beyond Lefebvre's thought as people not only have the right to appropriate and participate in the existing city rights, but also have the right to change them. He also thinks that this can be achieved through protests and demonstration showing that urban space belong to inhabitants. Castells's concept of Urban Social Movements stands as an explanatory step to take into action to reclaim the Right to the City.

In summary, the Right to the City is an approach sheding the light for all rights related to the city as a living organism fed by communication and intervention among individuals, self actualization, and having capability to be mobile and to access. Without experiencing the urban environment, reclaiming the urban space for the sake of the Right to the City is not likely to occur. Therefore, in order to establish the link between this concept and urban mobility, a complementary hinderer on urban accessibility needs to be explained, which is capitalist mode of urban transport.

2.1.2 Contemporary Urbanization, Mobility and Inaccessible Urban Space

Two emerging inferences are certainly about to open the way for the upcoming discussions related to the link between the Right to the City and urban accessibility, which are:

- Capitalism has deeply affected the failure process for individuals to reclaim their Right to the City.
- Collective thinking, acting and togetherness play key roles for the success of the Right to the City; therefore, above all, each individual must have the capability move around the city that they inhabit and own.

For the first statement, as inferred from the approaches of the scholars on the Right to the City, capitalism and neo-liberal urbanization have assigned the power to

change the city to a certain group of the members of private sector and state actors. Besides, there is another and interrelated impact of those kind of urbanization and policy-making practices on transport planning and accessibility: neo-liberal urbanization and its deep consequences on urban transport structure and mobility behavior highly affected accessibility of urban functions and the capability of people to move around the city.

Under the light of the second statement, it is noteworthy to conclude that each member of the society must have the right to mobility since it is impossible to come together, participate, perform face-to-face interaction and self actualization, and individual economic sustainability without having the ability or enhanced capability of mobility. In other words, first and foremost, right to mobility is a preliminary right of each single individual regardless of their gender, age, being able-bodied or disabled.

Consequently, there is an emerging dilemma on two opposite sides that requires further explanation: one side is that neo-liberal urbanization has deep negative impacts on urban transport as well as urban mobility; on the other side, right to mobility is a preliminary right of each individual. In other words, there is a 'right' on the one hand, and there is a barrier factor on the other. The factor hindering the right to mobility and accessibility requires further explanation. In this regard, to explain the link between the Right to the City and inaccessible urban space, a key complementary reasoning needs to be presented: the effects of contemporary urbanization on urban mobility.

The main goal of current neo-liberal practices is to increase the profits of the capital owners, which periodically enter into economic crisis in the production processes, through directing their investments to a more profitable aspect of economic development that is urbanization. In order to maximize the declining profits of capitalist entrepreneurs, they started to consider cities as the triggering forces of production processes by investing in the urban built environment. The growth of modern cities corresponds to the history of urbanization of capital to maximize the

profit of private sector. In the last quarter of the twentieth century, globalization and neoliberalism contributed to this process. At this point, cities behave like a mirror that reflects capital accumulation through new construction and their marketing processes (Harvey, 1985). Therefore, there is a strong link between urban development and capital accumulation process in terms of housing, transport infrastructure, emergence of new city centers and business districts. In fact, urban space is utilized and manipulated as an arena absorbing the surplus emerged from capitalist production processes.

The current urban policy planning discourse in globe, particularly in Turkey as a developing country context, critically discusses neo-liberal urbanization processes. The reflection of those discussions on accessibility literature emerges while looking for a link between the concept of the Right to the City and mobility of disadvantaged groups in their city. This link reveals the fact that neo-liberal urban transport practices resulting in car dependency as the mobility behavior of individuals stands as one of the barrier against persons with reduced mobility. In other words, it is inferred from the discussions in this regard, the more the motorized traffic due to car oriented transport policies increases, the more accessibility barriers for people with disabilities or elderly we have had and will continuously have in future. Under the light of this argument upon the link between inaccessible urban spaces and capitalist mode of urban mobility, it is necessary to note how current urbanization practices contribute negatively to accessibility.

Harvey (2011) notes that new urban forms and its consequences on urban re-development processes has become the target of new capital investment in contemporary modern cities. This new urban form increases the segregation between different social groups resulting in unequal urban areas, which causes the control on investments and the right to raise voice of new urban forms to be obtained by private sector. In other words, whealtiest companies and individuals have been about to dominate the policy-making structure of cities as well as people's daily life including mobility and social behavior. This results in a hierarchy of a sequence for the right to mobility, from top to bottom; from whealtiest at the top and deprived at the bottom

(de Sá, T. H., Edwards, P., Pereira, R. H. M., & Monteiro, C. A, 2019). City as the commodity of neo-liberal urbanization -as Gottdiener (1993) noted commodification of cities that are places for consumption and places to be consumed ignoring the social interaction- have been exposed to urban spaces providing skyscraper development that minimize social interaction, huge road infrastructure and junctions as well as narrow sidewalks and less parks. This sort of a stacked urban living environment decreases the quality of life in terms of inaccessible urban areas, car dependent mobility behavior and unsustainable transport structure.

Roads had been the spaces serving for transport aim used by pedestrians, horse-drawn vehicles, bicycles and other electrically driven rail systems. After the foundation of automobile, disputes have emerged around the question of 'who owns the road' within the framework of the concerns as safety, congestion and pollution (Roberts & Geels, 2018). The reformation process of cities have led to a car dependent transport structure, domination of cars over road space, suppressing pedestrians and other road users from the path. In addition, precautions to make urban roads safer for pedestrians such as signallized junctions, pedestrian overpasses and underpasses, have doubled the problematic by keeping pedestrians out of the way of cars that enabled a faster traffic flow (Ishaque & Noland, 2006; Norton, 2007).

Transport plays a role of being a critical link in urban life, vitality and quality of life. Besides, sutainable development and urban planning are also interlinked with each other under favor of transport to shape urban form as mixed uses, high density development and livable environmental conditions that affect economic sustainability, social well-being and quality of physical urban space (Banister, 2011). Therefore, urban mobility structure of a city is an important determinant for the quality of life, which has highly been related to quality of accessibility in urban space. In this regard, privatization of urban form, as de Sá et al. (2019) noted, as a result of neo-liberal urbanization and its reflection as production of space as a commodity, is a factor to be considered in relation with the use of urban space for roads and car parking areas for the sake of fast travels in a car dependent mobility

structure. The remarkable transition towards motorized vehicles in urban travel has assigned the use of public space for one's ability to have the opportunity to travel by private car. The fact that the transition towards such a car dependent mobility structure as an individual motorised means of transport infulenced each single person in society, since the increase in car use causes harmful consequences on sustainability of environment and traffic injuries for the vulnerable groups in society.

In summary, the problem is that each single person in society has the right to mobilty, however this fundamental right has been suppressed for a certain segment of the society since they do not have the ability or enhanced capability of mobility. The difficulties in urban mobility remarkably contributes the emergence of inaccessible urban spaces. Consequently, the term 'mobility' needs to be defined under the framework of the Right to the City, which emerges as the right to mobility.

In addition, a fact stands out from the literature that neo-liberal urbanization and capitalist mode of transport can be considered as a barrier against accessibility of cities or against making progresses to evolve accessibility measures to create urban spaces enabling equality for all. On the other hand, the most accessible cities especially in Europe and USA are positioned at the core of capitalism by means of production, policy making and mobility practices. Under the light of neo-liberal agenda for urban development as well as transport, there are many European cities - both accessible and with capitalist mode of transport- have already had skyscraper development with wide boulevards, suffer from traffic congestion and, remarkably, quite high automobile ownership. Particularly, American cities experience a car-oriented mobility pattern in most of the cities. Below Table 2.1 mentioned examples are the cities from Europe and U.S. that evidently embrace accessibility or urban space and public transport as a prior urban policy for Persons with Reduced Mobility.

Table 2.1. Examples of Accessible Cities from Europe and USA

Continent	Name of the City	Population	Prominent Accessibility Feature(s)
America	Portland	662,549	Accommodation of wheelchair in all public transport modes, "TriMet" trip planner service to facilitate journey planning for people with disabilities, accessible recreation facilities.
	Denver	749,103	Accessible public transport system, special measures for people with wheelchair, Commission for People with Disabilities at local government level, efficient implementation of building code for accessibility, the "Access A Ride" program for guiding people with disabilities.
	Seattle	776,555	Called as "City of Inclusion", Voice warning systems in public transport modes for people with disabilities, a map of accessible downtown routes, reduced fares, ramps and lifts for wheelchair users, priority seating and fare discount, prohibiting discrimination programs, increasing women and minority-owned business.
Europe	Barcelona	1,621,537	2011 Access City Award[2]-Finalist
	Berlin	3,426,354	2013 Access City Award-Special mention awarded in 2015
	Budapest	1,741,041	2014 Access City Award First Prize
	Dublin	1,024,027	2011 Access City Award-Special mention awarded in 2015
	Helsinki	558,457	2015 Access City Award Second Prize

Portland, Seattle and Denver from U.S. and Barcelona, Berlin, Budapest, Dublin and Helsinki from Europe are some of the examples of accessible cities in the world. Furthermore, the main economic structure and urban transport policies depend on

[2] Access City Award is a prize delivered to European cities to evaluate city's ability and efforts to become more accessible in terms of equal access to fundamental rights, quality of life for all, and equal access to all the resources and pleasures.

what neo-liberal urbanization offers for the well-being of the continuation of economic cycle. However, a dilemma starts to emerge in this regard. The literature on accessibility strongly put forward neo-liberal urbanization as one of the sources of barriers against accessibility. At first sight, it is not difficult to understand the fact that urban traffic, congestion and excessive use of automobiles occupy urban space that might limit the movement of a person having disability. On the other hand, the above-mentioned cities, especially the ones from the USA, evidently show that a city can both involve capitalism as a triggering force of economy as well as urban transport and accessibility as a mobility right for all as one of the core pre-requisite principles for urban mobility policies with its strict implementation of accessibility standards and consideration of the city itself as a right for all from the eyes of policy-makers, other able-bodied people and Persons with Reduced Mobility. Taking into account the fact that there might be more parameters to defend the existence of such a dilemma; however, within this research, it is worth to question whether car dependency stands out as a barrier against the right to access obtaining mobility as a right.

2.1.3 Mobility as A Right

Urban mobility is a fundamental component for social and economic development since it allows people to access facilities in the city such as services, employment opportunities, education, social relations and other places offering leisure time activities in the city (UN-Habitat, 2012). In this regard, each individual needs to have the right to mobility and access by default as Lefebvre, Harvey, Purcell and other scholars noted. Consequently, a fundamental link between the Right to the City and mobility emerges interdependently.

The production of urban space is the key component of the Right to the City and the participation of each individual in society to this process and appropriating urban space are the key rights. As addressed in the prior discussion between neo-liberal urbanization processes and mobility practices, the ‘city’ -defined by exchange value

rather than use value- and the ‘urban’ -as an outcome of social production of the citizens- (Lefebvre, 1996) are the concepts corresponding the emergence of right to mobility concept. From this perspective, mobility is to be considered as a significant element to obtain the Right to the City in participation and appropriation practices. In this respect, accessibility of urban space and mobility stands as fundamental components for the participation of urban practices, and for having the ability and satisfaction of moving in the city -in other words the Right to the City itself in its fullest expression (Castaneda, 2019).

As the ‘functional part of the right to the city’ a prerequisite factor for right to appropriation and participation (Verlinghieri & Venturini, 2018), the right to mobility refers to a right to move, to be mobile in urban space, to enabling accessibility of urban functions and opportunities. Considering Harvey’s approach to the Right to the City as a collective right, since the social needs of individuals and mobility choices are closely embedded to each other, right to mobility can also be considered as a collective right (Sager, 2006; Harvey, 2008). It is obvious that to achieve one of the fundamental human right -the Right to the City- to generate collective acting and thinking, it is necessary to access the urban itself, not only single persons to specific places but each individual to have the right to collectively move and access to any place depending on social and individual desires. Therefore, it is noteworthy to state that the Right to the City derivates a practical version of another right of its own -right to mobility-, which evidently puts forth the need to access to urban itself as a social right – a right for all.

Under the light of the close link between right to mobility and accessibility, moving to or in-between urban services, social capital and public spaces are at the core of participation to urban processes through accessing them and experiencing appropriation of urban space. From a more primary perspective, being in public is an exercise of democracy through experiencing the city as well as society. In other words, mobility is a means to access the urban (Castaneda, 2019; Ferreira & Batey, 2007). Fundamentally, each individual in society has the right to access to any urban asset and resource that makes right to mobility cover the right to accessibility.

Considering the production processes of urban space, right to mobility widens the path of the Right to the City to proceed few steps further, because without being mobile and access the urban assets and the city itself, it is not possible to take part in production of space as a collective action (Hannam, Sheller, & Urry, 2006).

Accessibility is a prerequisite condition for individuals to use the right to mobility. Attoh (2012) elaborates the close relationship between them as "the right to the city exists simultaneously as a right to access public space, a right to access socioeconomic goods like housing, a right to organize collectively". From another wording, accessibility is a right, results in obtaining the right to mobility as well as the Right to the City accordingly. Returning back to starting point, the Right to the City was described by Lefebvre (1996) as a right to centrality, to be at the heart of urban life and to places of encounter and exchange, that is, having the ability to move, access and experience within and around the center of life is a right itself. Without right to mobility and right to access, it is not possible to obtain the Right to the City and take part in the process of the production of urban space and self-actualization.

2.1.4 Whose Right to Mobility?

Right to the City is an interdependent concept closely linked with the right to mobility and accessibility. In theory, right to mobility belongs to all -to each single individual in society. However in practice, other externalities take part in the realization of right to the city. Those external factors vary regarding economic condition or political power, physical ability to be mobile, or affording a car from a more simplistic manner. Therefore, this brings the fact to the discussion that individuals are not clearly equal in terms of physical abilities and economic capabilities. For example, considering an imaginary urban square and its car oriented connections surrounded by vehicular traffic with narrow sidewalks; one might have economic power to obtain a car to enjoy the beautiful urban square; another might have desire to do the same but not afford driving; moreover, one another might afford

driving, have the same desire to have that experience, but not have physical ability to move without a wheelchair. Thus, a fact arises specific to this example; to enjoy this beautiful urban square having weak sustainable pedestrian connections, only one 'fortunate' person would have the chance to access to it by an unsustainable mobility mode; that is, have the right to mobility and to access in practice. The question is that the right virtually seems to be for all, but in practice, to whom does this right belong to?

Mobility and accessibility are human rights, and need to be for all. One of the contributors to the problem of allocation of the Right to the City for all in theory is that the concept remains quite abstract and it is not clearly perceived by individuals in practice -daily life- how to obtain the Right to the City, what the barriers are against it, and how mobility problems contribute to that problem. Şengül (2015) phrased the perception of the concept in practice and its relationship with the problem of inclusion of all. Once the concept of the Right to the City is rephrased as the right to public space or the right to housing or the right to access urban services to make it more concrete since the essence of the concept mostly remains abstract, it is obviously inevitable that those rights in question will be insufficient to bring together different segments and groups of people in the city. On the other hand, the Right to the City covers the entire group of individuals living in the city. It, as a right to reproduce urban space and self-actualization in the city, covers marginal groups, migrants, low-income people and the people who are not satisfied from urban daily life (Şen, 2012; Şengül, 2015). Therefore, it is expected to be a right for all; however, the society is not homogenous to obtain the right to mobility as well as the right to access to any urban service. One of the most remarkable reasoning of the failure of allocation of the right to access is to be built clearly upon existing social exclusion.

Excluding a person or a group of people from a specific urban place, process or activity is to be expressed as a process in which the ones are prevented to take part in daily urban activities (Raje, 2007). Urban mobility is a significant part of this process of social exclusion. According to research carried out by Mackett and Thoreau (2015), creating and sustaining barriers to accessibility is one of the main

factors affecting urban daily life negatively that contributes social exclusion through creating and accepting barriers against it. Those are the barriers preventing a part of the society to reach and experience urban space that put forth the fact that mobility-related social exclusion exists. In this manner, it is remarkable to mention that accessibility is a key indicator for the people to be included in economic, social and political life. Accessing social services and business networks in daily life is a prominent factor that makes the 'urban' belong to all as a right that needs to be ensured through sufficient mobility opportunities and alternatives for the whole society. (Kenyon, Lyons, & Rafferty, 2002). We all have been living in a world of social exclusion caused partly by problems in urban accessibility that makes the right to access not for all but for the fortunate ones having chance to be mobile.

The Right to the City is a concept to co-exist with the right to access to public space, which is one of the prior right of low-income and marginalized groups for them to produce urban space for the sake of a more just urban living. In addition, the complete use of urban space as a right brings the question of accessibility for also people with disabilities, whose mobility behavior has mainly been suppressed with the outcomes of modern industrial urban development as an area of social exclusion having many physical inaccessibility problems (Gleeson, 1999; Attoh, 2012).

The discussion so far aims to investigate the question: to whom does this right belong? Is it to the ones having car, or to the people having the ability to walk-hear-see, or to the ones at a early age without any difficulty to move? People with disabilities (Edwards, 2001) and the people having reduced ability of mobility have been exposed to stay as the external social beings in production of urban space and in decision-making processes as a significant part of participatory policy making. Therefore, the right to mobility does not simply belong to all in practice; the society varies by means of different factors disabler perception.

The main goal is to form cities having inclusive urban mobility pattern for the production of space; that is, co-production of space along with inclusive mobility systems as a collective right. Increasing accessibility opportunities for the whole

society will enable the capability of people to reach all urban social activities and to the city itself as a right to avoid unequal conditions in urban transport, for especially related to disadvantaged group of people in society (Soja, 2010).

To answer the question of belongingness for the right to mobility, it is noteworthy to mention three keywords arisen: right to mobility, inaccessible urban transport, and disadvantaged groups in society. To rephrase, mobility is a right for all, however, there are factors associated with the link between accessibility and urban mobility that makes mobility not to play its role as a right for all in practice, particularly for disadvantaged people.

2.1.5 Concluding Remarks with Questions on the Right to the City Concept

The Right to the City, right to mobility and accessibility are the interrelated set of concepts to be ensured for every single individual. It is inevitable to experience 'urban' along with the appropriation of space through participation within the Right to the City. Before the upcoming discussion on the right to access for Persons with Reduced Mobility and Independent mobility for all, it is worth to note some concluding remarks with a critical perspective on the concept as follows.

- Lefebvre's The Right to the City remains as an abstract concept, and what it practically means requires an inferential approach, which needs to be context specific. In other words, The Right to City and mobility do not express the same essence for a city in Middle East or the one in western Europe, which means that the Right to the City is a context-dependent concept.
- While making discussions on the Right to the City, the discourse lacks a mentioning about disabled or other disadvantaged people that stands out as a gap of the concept. It notes that the right of appropriation and participation needs to be guaranteed; however, what if the city does not allow some persons to be mobile?

- In the context of the Right to the City, the city belongs to the people living in through interaction and learning from each other. On the other hand, cities suffering from car dependent mobility structure remains as a question of the concept for two reasons: firstly, private car use is a barrier itself preventing people to have face-to-face interaction during the trip; secondly, as a result of neo-liberal urban development along with capitalist mode of urban mobility, the cities have been formed with wide roads, narrow sidewalks and traffic order facilitating fast mobility of motorized vehicles. And again, the same question arises: what if the city does not allow to be mobile?
- Since the formation and future of urban development are under control of private entrepreneurs for the related geographical contexts, the prominent concern of policy-makers is to support the continuation of the cycle of capitalism. In this respect, it is not that possible, for example, for a sidewalk to remain wide or get wider for the sake of the sustaining motorized fast mobility. Therefore, the current focus on the exchange value rather than use value of urban space might arise as a part of reasoning of inaccessible urban spaces.
- Related with the above-mentioned statement, on the other hand, some of the most neo-liberal cities in Europe and the USA stand out as some of the most favorable cities in terms of accessibility of Persons with Reduced Mobility. Therefore, there is a need to investigate the underlying reasoning about the accessibility problem.
- The mottos of ‘change the city and change ourselves’ have a causal relationship with each other: changing the city affects what and how we are. However, to change the city, the first step is to access the city, to be mobile in the city, which has been a remarkable question mark over the years. Without enabling sustainable accessibility of urban spaces as a first step, it is not possible to appropriate the ‘urban’ through participation.

In conclusion, passive individuals, neo-liberal urbanization, ignorance of policy-makers as well as other reasonings can all be the sources of the problem for not

having the right to access; however, the main concern of this research is the person who have been passivized along with inaccessible urban space. Accessibility is a right for all; prior to the right to mobility, prior to the Right to the City as well as right of appropriation and participation. In this respect, this research will focus on the Right to the City in relation with accessibility of urban space by staying the side of spatial aspect of the concept rather than analyzing the aspects of the concept that involves urban social movements and acquiring rights through political struggle.

2.2 Accessibility as a Right for All

The city and one of its main components, mobility, are the rights for all. While establishing the interrelation between mobility and accessibility, it is noteworthy that mobility a crucial factor to obtain and maintain the Right to the City including right to work, to have education or to purchase a house. Mobility conditions need to provide access to education, employment and leisure time activities including all practices to develop social capital. Therefore, the right to mobility is a prerequisite for the other rights providing accessibility as a precondition (Ascher, 2007). Accessibility is a link between individuals and public space that provides the condition to obtain those rights. Unless providing the required accessible urban environment for all for right to access and mobility, it is even impractical to mention appropriating urban space, participating social networks and the production of urban space. In this regard, the meaning and content of accessibility concept is presented in this part establishing the link towards Persons with Reduced Mobility. Consequently, this discussion aims to constitute a base for the condition that can be phrased with a question: what is the required condition that it is necessarily needed to put forth the significance of the motto, “accessibility for all”? Is it accessibility with the help of others, or accessibility through independent mobility? The latter is the answer forming the essence argument of this research.

2.2.1 Accessibility Concept

Prior to investigate the problems and experiences of Persons with Reduced Mobility, it is significant to understand what the accessibility concept and accessibility chain mean, which involve the definitions and approaches of different scholars, organizations and supranational institutions.

2.2.1.1 Defining Accessibility

Urban environment is an arena for the people to live, behave and interact with each other, and the connection between the components of these activities (e.g. employment, shopping, leisure time activities) can be achieved through accessibility. First of all, how the discourse about the meaning of accessibility has been formed needs to be put forth to prepare a base for the further discussions on the relationship between accessibility and independent mobility.

The ideal urban mobility structure is free from barriers to reach the public transport vehicles, stops, stations and their platforms. Accessing to these components needs to be guaranteed for the universal use (Heiser, 1995). In relation with cities, accessibility is a matter for the geography of urban space in various scales. It can be the subject matter for a building by means of its entrance, stairs and rooms; or for a certain part of urban space such as the metropolitan area of a city. The notable point here is that accessibility needs to be considered as one of the major components in urban planning and architecture (Church & Marston, 2002).

Accessibility represents enabling flexibility to fulfill the needs and preferences of individuals as well as the societies (Valdes, 1998). Being flexible means having the freedom to move, not restrained by the physical urban space and social biases. The most prominent legal document is the U.S., The American with Disabilities Act (ADA), states the characteristics of accessibility in section 4.3.2 under the title of "Accessibility Guidelines for Buildings and Facilities". The following definition emphasize that accessibility should not be limited to urban space (e.g., optimum

standards for sidewalk width, ramps, crossings); needs to be considered for all the components of the city that a person could encounter while commuting from one point to another in the city. The statement in The American with Disabilities Act is as follows:

> At least one accessible route within the boundary of the site shall be provided from public transportation stops, accessible parking, and accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance they serve. The accessible route shall, to the maximum extent feasible, coincide with the route for the general public (ADA, 2005).

Urban and social development is a dimension of accessibility concept. The measures taken to enhance accessibility can be utilized by not for only a specific group of people, but a wide range of world's population -get varied by means of physical condition, age or income- covering i.e., people with disabilities, elderly, children, refugees or visitors. Therefore, the outcome of the enhancement process for accessibility along with a progressive removal of barriers is expected to contribute the participation of social life and development, since the built environment has always the probability to prevent mobility and limit the access options of any individual, particularly of persons with reduced mobility (United Nations, 2013; Golledge, 1993).

Considering people with disabilities, accessibility can be associated with equal utilization of the city itself that involves urban physical environment (e.g., parks, squares, roads and the buildings with interior movements and entrances), urban mobility (e.g., walking opportunities, public transport with vehicles and stops/stations), the use of information and communication technologies, and other services open to public (United Nations, 2008). In other words, being a member of the public for people with disabilities providing to have equal rights with others is a human right that cannot be ignored by any single person, any institution, and specifically by the city itself. Consequently, urban space must give the opportunity to be mobile on an equal basis for all -starting from home to the reaching destination including information systems, walking, using public transport, benefiting

recreational areas, and ending with returning action to home. All these activities are called accessibility chain.

2.2.1.2 Accessibility Chain: A Combination of Accessibility of Urban Space and Public Transport

Accessibility starts from the origin location and ends up with the destination in the city. To achieve such a mobility flow, there is a clear need for a set of sustainable transport policies and design solutions. In this respect, accessibility of urban environment as well as public transport can be achieved through a proper design of urban space considering socio-spatial solutions. However, urban planning as well as transport design is sometimes about to originate accessibility problems and to become disablist against persons with reduced mobility (Zajac, 2016; Barnes, 1991). In fact, for example, considering accessibility problems in urban environment, a single disablist bus stop sidewalk height has the capacity to terminate the trip for a person with wheelchair. In other words, an amendment to be made to solve a single accessibility problem does not work to reorganize accessibility; instead, the question needs to be formulated by considering accessibility as a chain from the beginning of the trip until the end.

A journey in the city along with all the links of the chain needs to be sustainably accessible for the journey to become possible to carry out. The links of the chain generally consists of home to sidewalk, sidewalk to vehicle, getting on and off the vehicle, transfers, again sidewalk to the entrance of the building. Therefore, each single part of accessibility chain needs to be counted as the core challengeable issue to solve and improve, and needs to be accessible to accomplish the entire trip without barriers including information and communication at the beginning (Ling Suen & Mitchell, 2003; Wilson, 2003).

The physical urban environment is expected to give people with disabilities as well as other persons with reduced mobility the freedom and capacity to experience the city independently, safely, along with dignity and self-regarding. The journeys

forming this experience in urban environment -composed of various components as the matters of accessibility that are streets, open public spaces and buildings- need to be free from any physical barriers through sustainable urban design tools. In this respect, accessibility chain is the key concept unifying all the activities to be experienced as a chain and defining each link of the chain as the four moments of use that are approach, enter, use and exit. Considering this chain, accessibility analysis can be made in a way that if there is a brake or limitation on any link of the chain, the physical barrier needs to be identified (Gonzalez, 2016), e.g., an excessive gradient of the ramp on a sidewalk to be used by a person with wheelchair or a disrupted tactile pavement on the sidewalk to be used by a visually impaired person.

Urban transport systems need to be accessible for all, which has been a remarkable problematic in many cities that needs to be taken into account for each sub-component of the route such as accessibility of public transport systems (Jensen, Iwarsson, & Stahl, 2002) or the accessibility of built environment. Accessibility chain is not a flow as a door-to-door transport option; for example, from home to car, to the destination, and returning back to home again by car. It needs to be defined as a chain to be considered with public transport and walking as the most sustainable mobility options to access from one place to another.

Basically, accessibility chain is that an urban trip starts from the origin and ends at the destination (e.g., from home to work) including each trip leg as the vital component of the chain. Those trip legs can be identified as the sub-parts of the trip such as arriving to the curb, transition from bus stop to the bus or having rest at a park, which needs to be user friendly and accessible for all (Wilson, 2003). Keeping urban mobility system free from any spatial barriers paves the way for all persons with reduced mobility to obtain their Right to the City.

Public transport vehicles and stops/stations are the most prior components of accessibility chain. An efficiently working and accessible public transport system offers sustainable urban mobility along with its health and environmental benefits connecting people and locations that also contributes the decrease in car dependency

and traffic congestion as current unsustainable urban transport challenges (Yatskiv, Budilovich, & Gromule, 2017) Therefore, an efficiently working, well organized and accessible public transport system is required both for the future of sustainable urban transport and accessibility for all. In this respect, the user friendliness of public transport systems, as the most prior links of accessibility chain, can be defined by the level of accessibility of public transport vehicles, stops/stations and the quality of integrated mobility between different modes (Cheng & Chen, 2015).

Accessibility chain can be defined as a context dependent concept that necessarily changes depending on current mobility structure, sustainability level of transport, user behavior, city scale and other certain social indicators. An example of accessibility chain is presented in Table 2.2 consisting of four links starting from decision making for the trip, the journey itself, experiences at the destination and the return route.

Table 2.2. An Example of Accessibility Chain Approach (Sensory Trust, 2021)

Links of the chain	*Link-1*	*Link-2*	*Link-3*	*Link-4*
Visitor experience	Decision to visit	Journey and arrival	On-site experience	Return home
Examples of things to consider	Information about access and accessible facilities Accessible formats and choice of languages available Promotion and publicity present welcoming and inclusive image for all visitors Good publicity with targeted distribution	Public transport Accessible car parking for park-and-ride opportunities Welcoming entrances including the necessary signage and information Free entry for accompanying persons Inclusive toilets, cafes etc.	Accessible routes and signages Inclusive experience of the event Accessible and clear information and interpretations Inclusive toilets, cafes etc.	Efficient use of public transport Accessible car parking and pick-up for park-and-ride opportunities Feedback and involvement encouraged

Similarly, Figure 2.1 mentions accessibility chain, so called travel chain in this example as a cycle starting from planning the trip, the use of vehicle, arrival to the destination and providing feedback on the trip.

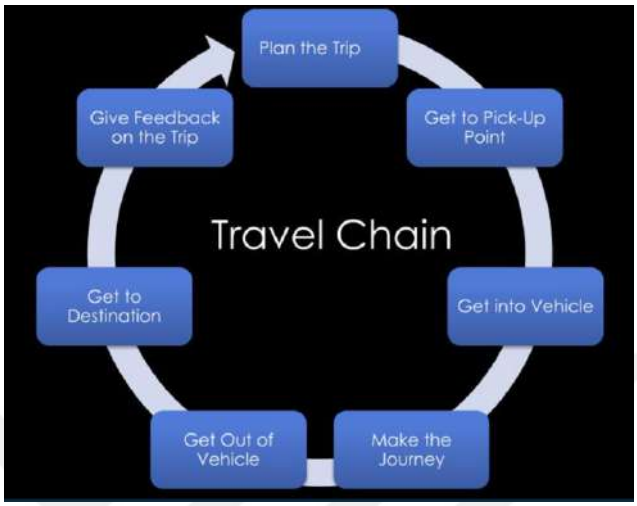


Figure 2.1. An Accessibility Chain Example (Hassan, 2014)

In Figure 2.2, accessibility chain is revealed as a composition of interrelated links of the chain with further explanatory examples about each link.

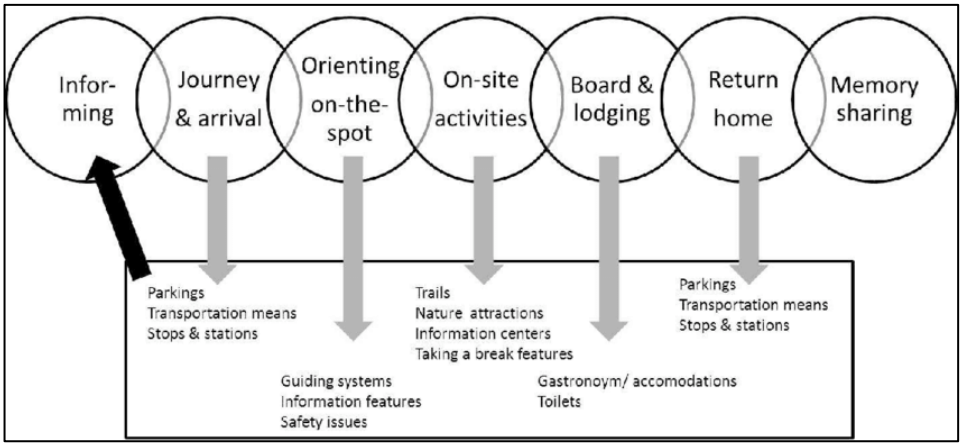


Figure 2.2. An Example of Tourism Service Chain in terms of Accessibility (Hennig, Sattler, Wasserburger, & Wasserburger, 2015)

In this part, accessibility concept is described and accessibility chain is elaborated to take the first step the initials of the matters of the research. After all the discussions

about accessibility concept and accessibility chain, two prominent points have been emerged:

- Accessibility is one of the most fundamental rights to experience the city.
- Accessibility is composed of interrelated links as a chain, therefore making only one single link accessible would not probably solve the accessibility problematic. The chain needs to be taken into account as a unity.

From the perspective of this research, the citations and discussions of these two concepts clearly show that it is not reasonable to study only accessibility of public transport or only accessibility of buildings and entrances. This first step shows that the research on accessibility problem definition needs to be done considering all the links of the chain.

2.2.2 Right to Access-Accessibility for All

In 2010, Strategy for the Rights of Persons with Disabilities 2021-2030 was published by the European Union with an emphasis on the rights of people with disabilities and their participation of social life and economic activities without facing any sort of discrimination and social exclusion. Under the title of the Strategy, 'Equal Access and non-discrimination', accessibility concept was issued by mentioning its relationship with access to justice, freedom, social protection, goods and services, art, culture, recreation and leisure (European Commission, 2010). In other words, the Strategy implies the Right to the City in accordance with the Right to access in the city. To obtain the right to enjoy those urban functions, increasing accessibility needs to be seen as one of the biggest steps in spatial planning and design.

Regarding the disability perspective, four domains become prominent with respect to accessibility that are social inclusion, sustainable environment policies, economic inclusion and participation to civil and political activities in daily urban life (United Nations, 2012). Accessibility must be regarded as a conjoint concept with the

inclusiveness of urban space that highlights the social dimension of the discussion. It is an inclusive right and, unquestionably, must for all -for the entire society covering each single individual of Persons with Reduced Mobility.

2.2.2.1 Inclusive Accessibility

Considering the social aspect of the discussion regarding each link of the accessibility chain, an urban mobility system, expected to be free from any spatial and physical barriers, needs to be correspondingly free from social exclusion (Hawas, Hassan, & Abulibdeh, 2016). Mobility-led social exclusion is highly related with the participation of persons in social life as well as economic and political activities. Barriers against accessibility contribute the level of mobility-related social exclusion even in the cities with high mobility (Kenyon, Lyons, & Rafferty, 2002). Cities sometimes call themselves as serving high mobility that means rapid transport between urban services by mostly motorized vehicles. In this respect, it is necessary to take the term mobility into account along with pedestrian movement in urban public spaces including the ones having reduced mobility. To prevent our minds to perceive mobility as a mere and individual action of going from one place to another, accessibility of urban environment along with public transport must be inclusively designed.

Accessibility is a concept to be considered as a chain with links that composed of different segments of the trip. Each single trip-leg links of the chain, needs to be inclusively accessible. Accessible mobility structure is composed of accessibility of sidewalks, crossings, stations/stops, information systems and many other features that must be designed in an inclusive manner for particularly persons having cognitive, sensory or linguistic impairments (Ling Suen & Mitchell, 2003). In other words, accessibility is for all -for each segment of the society no matter how the income levels, physical condition or the level of social well-being of individuals are.

There are many national and supra-national documents and researches related to the rights of people with disabilities and their well-being, which stands out as one of the

fundamental human rights. Inclusive society is the key component, which has the capacity to welcome the rights and well-being of people with disabilities. Therefore, there is a need for an effectively working inclusive society structure in which each individual is treated equally with having equal right of participation in economic, social and political life. In this framework, accessibility of information, education, housing, the city and other services is vitally significant, and the term accessibility significantly covers the group of people having special needs, which considerably includes people with disabilities (United Nations, 2013). It is noteworthy to mention that accessibility is prominent key factor for an inclusive society that put forth equality as one of the fundamental principles of human rights.

The emphasis on inclusive society that is highly related with accessibility is seen in The Millennium Development Goals Report (2005) as "the need for persons with disabilities to be guaranteed full enjoyment of their rights without discrimination". In this respect, accessibility plays a critical role in the establishment of a society having an equal basis for all as a precondition to participate in daily urban life activities for persons with disabilities (United Nations, 2013).

Consequently, accessibility is a right, a precondition for the Right to the City paving the most significant stones along the way towards an inclusive society. Accessibility of an urban fabric reveals the high dependency of inclusiveness as a social phenomenon with urban space as a socio-spatial outcome that still have remarkable gaps between the ideal case of inclusive accessibility and the current condition in many different geographical contexts. Prior to explain what the main subject of accessibility and the Right to the City discussion is -persons with reduced mobility-, it is significant to note the supranational context ensuring accessibility as a right.

2.2.2.2 Supranational Documents Ensuring Accessibility as A Right

Accessibility and persons with reduced mobility are a right recognized by supranational documents and reports of international institutions such as European Union, United Nations, World Bank and World Health Organization. Along with the

commitment of countries, accessibility is accepted as one of the most significant components of human rights, which constitute the ontological base of the relationship between the Right to the City and accessibility. In the legal section of this research, some of the reports and documents are dealt. To mention that a wide range of documents notes accessibility as a right in a direct or indirect manner, below Table 2.3 states the names, years and the founder institution of the documents.

Table 2.3. Supranational Documents Mentioning Accessibility as a Right

THE NAME OF THE DOCUMENT/REPORT	YEAR	RELATED INSTITUTION
European Convention on Human Rights	1953	Council of Europe
The World Programme of Action Concerning Disabled	1982	United Nations
The United Nations Standard Rules for the Equalization of Opportunities of Persons with Disabilities	1994	United Nations
World Health Organization (WHO) Mental Health Declaration for Europe	2005	World Health Organization
Council of Europe Action Plan to promote the rights and full participation of people with disabilities in society 2006-2015	2006	Council of Europe
United Nations Convention on the Rights of Persons with Disabilities	2006	United Nations
European Pact for Mental Health and Well-being	2008	European Union
European Disability Strategy (2010-2020)- A Renewed Commitment to a Barrier-Free Europe	2010	European Commission
2011 White Paper on Transport	2011	European Commission
The Charter of Fundamental Rights of the European Union	2012	European Commission
European Accessibility Act	2015	European Commission

The table demonstrates that the two concepts, accessibility and people with disabilities, are taken into account by the most prominent supranational institutions in the world, meaning that accessibility along with one of the most fundamental rights -the Right to the City- is an interdependent concept to be perceived with one

of the most disadvantaged group of parts of the society -persons with reduced mobility. It means that not only people with disabilities, low-income people, or only children are the subject of the discourse. Accessibility as a right for all as a matter for all persons with reduced mobility.

2.2.3 Why 'for All' As the Matter: from People with Disabilities to Persons with Reduced Mobility

Accessibility of places, services or any physical component of urban environment for people with disabilities means that any person can easily reach, enter, exit and use without facing barriers. People with disabilities must be ensured to practice all rights in the city to have their freedom and right of participation in the society in an equal manner with others (United Nations, 2013).

In most cases, people with disabilities are the main actors of vulnerable groups as the main stakeholders of urban mobility development processes related to accessibility (United Nations, 2012). Recent discourse enlarges the content of vulnerable groups that becomes a significant part of the society including people with disabilities as well as elderly, parents with baby stroller, travelers with heavy luggage, refugees etc. Therefore, it is worth to highlight that the research concern on accessibility is not only for people with disabilities but for the persons with reduced mobility.

A significant percentage of travelers live with a limitation or physical impairment, travel with baby stroller or luggage, or visit a city with an entire unfamiliarity. On average, almost 12-16% of the population of a country can be called as disabled; moreover, 20-25% to be called as persons having mobility difficulty. In this respect, urban transport systems and physical environment need to be user friendly in terms of accessibility in line with the worldwide accepted principles of universal design and accessibility for all that could make the whole transport system of a country easy to use for people with disabilities and other persons having mobility difficulties (Ling Suen & Mitchell, 2003; Hultgren, 1995).

Prior to understand persons with reduced mobility with respect to right to mobility and accessibility, it is noteworthy to explain the relationship between disability and universal design that is highly associated with accessibility and equal right to access to urban space.

2.2.3.1 Disability Theory and Equitable Use in Universal Design: A Right for All

Disability is not only a phenomenon experienced by a group of people in society, but it is a progressively ongoing concept having a theoretical background. Disability studies depend mainly on two models showing almost completely different characteristics from each other, which are medical model and social model. The characteristics of these two models are summarized by Meşe (2014) in comparison with each other in Table 2.4.

Table 2.4. Two Different Paradigms of Disability Concept (Meşe, 2014)

Medical Model (old paradigm)	Social Model (contemporary paradigm)
-based on the medical model of disability	-based on the social model or the new paradigm of disability
-pathology oriented	-having a systematical and social perspective
-disability as deficiency and developmental deviation	-solutions focusing on the well-being of the whole life span
-considering people with disabilities and their families at high risk against difficulties	-disability as a changeable process -supporting health and unyielding
-having a tendency to focus on the acute phase of the disability	-a special emphasis mostly on the chronic phase of disability
-using the concepts of “fixing” or “adaptation” for disability.	-valuing the history of disability and culture
-using the norms based on people without disabilities to make comparisons.	-collaboration with the people under research in the process

Table 2.4. (continued)

-The studies are about people with disabilities, but rarely done by them. -adapting the naming as “we” and “they” like two opposite sides	-explores the main social, political, economic and legal issues of disability. -approaches disability in a sense that the rights of people with disabilities are ignored -investigates new solutions for people with disabilities in policy-making. - giving priority to the opinions of people with disabilities by supporting their participation

In the medical model, disability is considered as an illness or a problem to be cured without enabling any participation or investigation for the essence of the problem. In this respect, people with disabilities have been alienated to their disability that needs to be considered as a process of comprehension of the fact that each individual is equal and the city belongs to all as a right. Without having the right to participate and access to policy-making processes and urban services, the alienation process begins for one of the most prominent rights that they own, which is the right to the city.

In the social model, basically the approach on disability and people with disabilities changes. The aim has become not saving the day by finding out a temporary solution to the previously so called ‘medical problem’, but attaching importance to each human social being in an inclusive manner. This research is going to be built upon the fact that people with disabilities and the ones with reduced mobility needs to be approached from the perspective of social model in a progressive manner.

The perception of disability also depends on how a person with reduced mobility considers her/his condition. This perception depends on the factors that are the outcomes coming from the condition of being disabled, the perception of disability by other people, and the level of the use of resources (Sawadsri, 2010). In short, from a disabled person’s perspective, those three factors are to be formulated in a way that what the meaning of him/her is from the self-perspective and the perspective of an outer lens, and to what extend the city enables them to participate, appropriate and

enjoy urban space. It can be noted that people with disabilities are the key actors of accessibility depending on the perception of disability in the daily life. Therefore, there is a need for understanding how much the consideration of people with disabilities is remarkable in researches, policy-making, participation practices, and for the city itself. The initial incentive in this manner is to be the statistical percentages showing how people with disabilities are significant in society. In 2010, research conducted by World Health Organization and World Bank (2011) stated that more than one billion people can be called as disabled that corresponds to approximately 15% of global population, a remarkable amount of which was living in developing countries. If this mentioning is approached by adding the families of people with disabilities, the affected percentage of population from the condition of having disability extremely rises. Considering that those facts are from the year of 2010, and that the population -particularly in the western world- has been aging, disability or having a condition reducing mobility stands out as a considerably important question mark, for especially developing countries. Additionally, each person has the need for mobility and access since the birth, ensuring accessibility as a right for people with disabilities is a core question.

Accessibility has the capacity to play a key role in disability discourse. In 2003, accessibility has become a key concept in the agenda of European Union with the announcement of European Year of Persons with Disabilities. In this sense, a remarkable importance has been attached to accessibility along with the awareness raising campaigns for the benefits of accessibility of cities for the sake of applying minimum standards to pursue a Design for All approach as a tool to implement accessibility of urban space (United Nations, 2013). Design for All is an inclusive component of universal design, in that, “for all” emphasis is one of the most prominent components that makes it” universal”.

Universal design means the design of environment, processes, services and outputs of industrial design that needs to be utilized by all without discrimination, any adaptation processes (United Nations, 2013). It was defined by seven principles by

Center for Universal Design (1997) that demonstrate the essence and underlying aim of the concept as:

-Equitable use

-Flexibility in use

-Simple and intuitive

-Perceptible information

-Tolerance for error

-Low physical effort

-Size and space for approach and use

Associated with right to mobility and accessibility, universal design emphasizes that each single component of urban space or service needs to ensure the right to access -reach, enter, exit or interact- for persons with reduced mobility having limited or varying capabilities. (United Nations, 2013). Accessibility has a direct integration with universal design ensuring inclusive design processes and orientations that generates equitable benefits for all. Accessibility along with universal design approach is not specific to a group or society, is for all providing no matter what the gender, demographic, socio-economic, cultural and historical setting is (Mace, Hardie, & Place, 1991).

Among the seven principles, equitable use puts forth the significance of accessibility as one of the most fundamental parts of the Right to the City. It corresponds to equality in use, in urban mobility and accessibility as a right. In this manner, the key factor is that it is and must be a right for all, not for only people with disabilities but for all persons with reduced mobility.

2.2.3.2 'For All' as the Matter: Persons with Reduced Mobility

Le Corbusier (1961) and Carpentier (2011) invented two different approaches that can be associated with current disability and accessibility discourse. Le Corbusier proposed 'Le Modulor' as a model to define the measurements of a sample human by creating an anthropometric scale to standardize architectural decisions (Le Corbusier, 1961). This model represents a healthy male figure showing the main standards of the body. However, there are many inconsistencies among people regarding, for example, gender, age or disability condition. The modulor of Le Corbusier neglects the relevance of a child, being female, having the need for a wheelchair for mobility since human body cannot be represented as a standardized model. In this respect, another modulor analysis was made by Carpentier (2011) emphasizing the variety of human body (Figure 2.3). It initiates the discussion with a counter argument from a more post-modernist point of view mentioning that the body is not standard showing the characteristics of being tall, fat, deformed, twisted or scalped (Chang, 2019). In this respect, the consideration of a single human body model is not acceptable in architecture as well as urban design, planning, and most remarkably in decision-making processes.

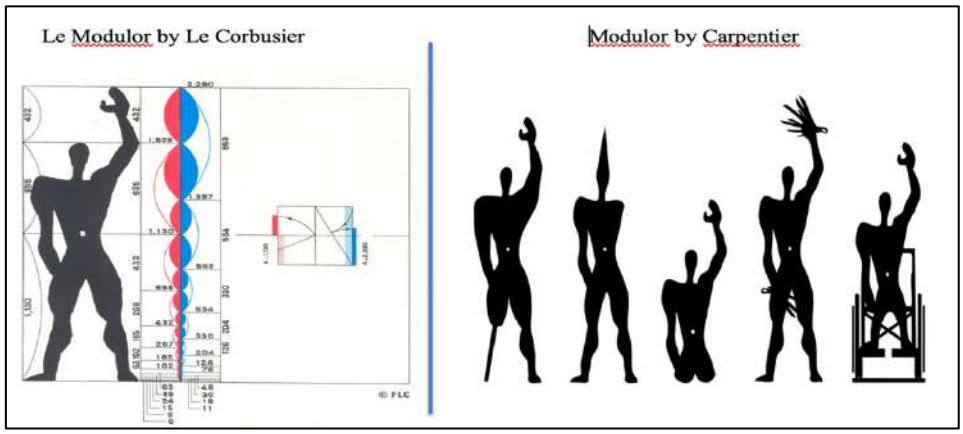


Figure 2.3. Two Different Approaches to the Standardized Human Body by Le Corbusier-1961 and by Carpentier-2011 (Chang, 2019)

Each human body is different. As a consequence, the urban setting needs to be adaptive and resilient enough to be compatible with urban experiences of each

member of the society. In this sense, the only matter is not people with disabilities, but all the persons with reduced mobility. The statement, of persons with reduced mobility (PRMs), means all people who have difficulty in utilizing urban services and the related transport infrastructure such as pedestrian sidewalk, public transport vehicles and stops/stations, parks and urban built environment. According to TSI PRM-European Commission (2008), the following categories are the ones officially accepted in the framework of PRMs:

-wheelchair users

-other mobility impaired including

-people with limb impairment

-people with ambulant difficulties

-people with children

-people with heavy or bulky luggage

-elderly people

-pregnant women

-visually impaired

-blind people

-hearing impaired

-deaf people

-communication impaired […]

-people of small stature (including children).

In newer version of the same regulation (European Commission, 2014) a much simpler definition was presented that does not list a concrete group of people:

> Person with disabilities and person with reduced mobility means any person who has a permanent or temporary physical, mental, intellectual or sensory impairment which, in interaction with various barriers, may hinder their full and effective use of transport on an equal basis with other passengers or whose mobility when using transport is reduced due to age.

According to the Article 2(a) of the 'Regulation (EC) No 1107/2006 of the European Parliament and of the Council of 5 July 2006 Concerning the Rights of Disabled Persons and Persons with Reduced Mobility When Travelling by Air' (European Commission, 2006), the definition of Persons with Reduced Mobility is stated as:

> …means any person whose mobility when using transport is reduced due to any physical disability (sensory or locomotor, permanent or temporary), intellectual disability or impairment, or any other cause of disability, or age, and whose situation needs appropriate attention and the adaptation to his or her particular needs of the service made available to all passengers .

The concept flow of the research has heretofore started with the Right to the City in relation to right to mobility and accessibility along with the additions of the analysis of accessibility and accessibility chain and the affected subject group of the research as people with disabilities -in a broader sense; persons with reduced mobility. In addition to this concept flow, a final complementary concept is involved as independent mobility to sustain achieving process of accessibility chain.

2.3 Sustainable Right to Access: Independent Mobility

Right to access needs to be ensured for not a single trial of an accessibility chain, but for the whole journeys and for each single member of persons with reduced mobility. In this respect, there is a need for sustainability of accessibility right without being in need of help for any link of the chain. Thinking a person with wheelchair; getting out of home, reaching the bus stop, getting the necessary information for the arrival of the bus without any help is a process to be called sustainable accessibility. However, once this person was in need of help to get on the bus due to level difference between pedestrian sidewalk and the bus door, the accessibility chain would have been broken due to lack of independent mobility. Therefore, it is worth

to mention that sustainable accessibility indispensably requires independent mobility.

2.3.1 Spatially and Socially Sustainable Right to Access

In case that people with disabilities and other persons with reduced mobility have the opportunity to interact with urban physical environment, they can be fully integrated with social, economic, political and cultural life in an equal manner with other able-bodied persons (United Nations, 2013). The interaction between a person and urban space is to be possible through providing achievable accessible chains in cities in terms of urban mobility.

The reason to make accessibility sustainable is that accessibility chain should not be broken for any reason whatsoever, and it should be experienced by any independent single urban traveler in society. European Commission (2011) stated that in order to achieve accessibility chain; efficient pre-journey information systems, accessibility of public transport and accessible urban space need to be provided. All the factors within accessibility chain should involve,
-measures against discrimination,
-accessible, correct and on-time information systems,
-immediate assistance once needed.

In 2012, one of the outcomes of the United Nations Conference on Sustainable Development was that disability and sustainable development are interrelated with each other. In addition, the report of the Secretary-General's High-Level Panel of Eminent Persons on the Post-2015 Agenda in 2013 stated that disability is an interlinked concept along with human rights and participation (United Nations, 2013).

In a socially sustainable urban setting, the matters to be addressed in the framework of this research need to be human rights, accessibility, urban mobility and participation. The point to be referred here is that accessibility must be sustainable

by means of independent achievement of mobility as a chain at any time and any place. For instance, the use of an urban bus system at a specific stop needs to enable a person with wheelchair to arrive and get on the bus by himself/herself, which is independent mobility. In this respect, persons with reduced mobility must have the right for independent mobility, except for persons having condition of being gravely disabled.

2.3.2 Independent Mobility for PRMs

For persons with reduced mobility, independent living and a seamless participation in all aspects of daily life is one of the ultimate aims to sustainably enable equality in terms of human rights. In this respect, accessibility is a significant factor to be ensured by local, governmental and international policy-making authorities (United Nations, 2008).

Achieving accessibility through independent mobility is a key factor in this research. The independence dimension of mobility brings quite significant practical and psychological outcomes for persons with reduced mobility. In practice, reaching a bus stop or having rest in a park without getting any help make people reflect their personal will to urban space by utilizing, affecting as well as changing it. In this way, there will not be any difference between any individual in social life meaning that they will be able to live urban setting in practice. As a consequence, self-determination of human psychology of any individual having mobility difficulty will be registered to urban social life successfully. As a more simplistic statement, practically, the ability of i.e., stepping from sidewalk to crossing by using an ideally designed ramp as any other able-bodied individuals do in their daily routine, and the positive self-determination feeling gained by this action collaboratively composes the concept of independent mobility.

To prevent deprivation and isolation from social life for people with disabilities as one of the most vulnerable groups of persons with reduced mobility, they need to be able to have their mobility right independently and easily in urban areas (Falkmer,

Fulland, & Gregersen, 2001). In this sense, independent mobility is the core part of the Right to the City as well as right to mobility. Ahmad (2015) puts forth similarly that "once the right of independent mobility is ensured, the feeling of being handicapped and disabled could vanish, albeit the existing impairment". The emphasis here to the self-feeling of being disabled or handicapped can be annihilated through independent mobility for all.

In the Convention on the Rights of Persons with Disabilities (2012) there is an emphasis on independent mobility by ensuring accessibility for independent living, effective participation in the society, and freedom to experience personal mobility without facing any barrier. In addition, accessibility has the capacity to contribute well-being of persons with reduced mobility as well as participation in the society that develops sense belonging, social and economic sustainability and elimination of poverty. Similarly, Olkin and Pledger (2003) state the significance of independence in daily life for persons with disabilities as that disability studies are highly related with independent living approach by putting emphasis on increasing their self-determination enabling full access to social, educational, political aspects of life.

Independent mobility is a matter of human rights. It is particularly for persons with disabilities as a citizenship right and a matter of equity in urban mobility for the promotion of disability rights in practice (Ahmad, 2015). In this respect, some of the core principles forming the core EU passenger rights are about independent mobility and about the significance of accessibility of persons with reduced mobility (European Commission, 2011), which are;

-right to non-discrimination for the accessibility of urban transport,

-right to mobility including accessibility and assistance,

-right to full application and effective enforcement of EU law.

Urban transport passengers need to indispensably have accessible urban transport modes without any discrimination, and urban mobility needs to be considered as a human right for all and should be guaranteed by EU legal documents. In this sense,

Çağlar (2012) notes that accessibility for the people with disabilities is not only a means of exercising their rights, but also a condition for living independently and fully participating in all areas of social life. In order for people with disabilities to lead an independent and dignified life, they should have equal access to the physical environment, transportation, information and communication, including information and communication technology, and other public facilities and services, on an equal basis with other members of the society. In line with this statement, the fact that most of the human rights are to be used through participation in social, political, economic and cultural life has led to discussion that accessibility must be accepted as an independent right beyond being a prerequisite for participation.

2.4 Concluding Remarks

Within the framework of this research, heretofore, there have been some keywords bonded with each other in a sequential order. To summarize, the initial inspiration of the research emerged from the concept of the Right to the City stating the city as a right for all. To obtain the Right to the City, the ability to be mobile between activities or urban land uses must be easily achievable. In relation with this, accessibility level of the city determines who could be able to enjoy and utilize the city in terms of urban setting, walking environment and public transport facilities, which constitute the sub-headings of the trip-legs, or the chains, of the journey that is called accessibility chain. At this point, a question arose: whose right is this? The answer is theoretically the Right to the City for all- for persons with reduced mobility; however, in practice there are significant problems in terms of social inclusion for mobility practices stem from accessibility. Consequently, accessibility is a matter for not only able-bodied persons and for persons with disabilities, but for any single person having mobility difficulty. To achieve this universal right - emphasized in universal design principles as “equitable use”- in a sustainable manner, the mobility practices need to enable independent mobility (Figure 2.4).

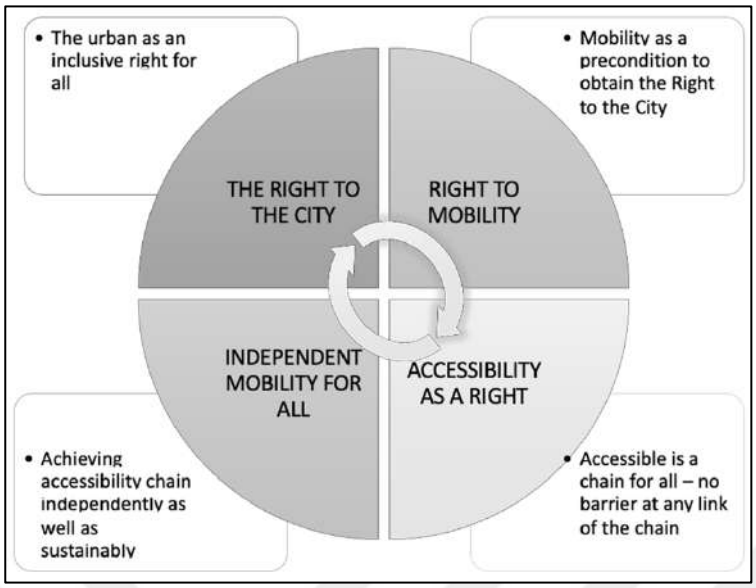


Figure 2.4. A Relational Representation of the Conceptual Research of the Thesis

After reviewing the conceptual literature on the Right to the City associated with accessibility, the accessibility context in Turkey associated with disability condition and legal structure need to be examined to understand the context in Turkey. At the end of the following section, a socio-demographic understanding about Turkish context, the main rules for accessibility and what is being studied regarding Turkey will have been processed within the content flow of the research.

CHAPTER 3

ACCESSIBILITY CONTEXT IN TURKEY

3.1 Socio-demographic Approach on the Beneficiaries of Accessibility in Turkey

There has been a mainstream understanding for years that Turkey's population is young. However, the question of this part is whether it will continue to stay young, or how about the aging process in Turkey that is highly associated with the future understanding and prospective evolution of urban planning and design.

The needs of each age group by means of accessibility are different. The ability to stepping on a sidewalk without ramp differs for an able-bodied person at the age of 20, a person with wheelchair at the age of 20, and an elderly person at the age of 80. Urban planning and design approaches in Turkey has to be modified accordingly. In this respect, what a socio-demographic understanding is the social implications of demographic indicators about population by age and percentages of people with disabilities.

The total population in Turkey is 83,614,362 as of the end of 2020. The young population percentage seems to be high compared to the other countries currently; however, it will definitely change in future, and in fact has already changed considering the years between 2007-2020. Table 3.1 shows the total population change and its distribution among the ages represented by 0-14 as the children, 15-64 as the youth and adults, and most importantly, 65+ as officially elderly. The total population in Turkey has gradually increased. Considering the age groups, 0-14 percentage decreases from 26.4% to 22.8%, and 65+ percentage increases from 7.1% to 9.5%. It clearly implies that the population in Turkey got older between 2007 and

2020 and will probably get older and older in future. Therefore, the elderly population will increase that will necessarily require more sensitive accessibility consideration in urban planning, design, legislative framework in Turkey.

Table 3.1. Population by Age Group and Proportion in Total Population between 2007-2020 (TurkStat, 2021)

		Proportion in total population (%)		
Year	**Total population**	0-14	15-64	65 +
2007	**70 586 256**	26,4	66,5	7,1
2008	**71 517 100**	26,3	66,9	6,8
2009	**72 561 312**	26,0	67,0	7,0
2010	**73 722 988**	25,6	67,2	7,2
2011	**74 724 269**	25,3	67,4	7,3
2012	**75 627 384**	24,9	67,6	7,5
2013	**76 667 864**	24,6	67,7	7,7
2014	**77 695 904**	24,3	67,8	8,0
2015	**78 741 053**	24,0	67,8	8,2
2016	**79 814 871**	23,7	68,0	8,3
2017	**80 810 525**	23,6	67,9	8,5
2018	**82 003 882**	23,4	67,8	8,8
2019	**83 154 997**	23,1	67,8	9,1
2020	**83 614 362**	22,8	67,7	9,5

In Turkey, elderly population, who are the most vulnerable age group to main beneficiaries of accessibility, has increased by 22.5% in last five years. Considering the population projections, the percentage of elderly population will become 11.0% in 2025, 16.3% in 2040 and 25.6% in 2080 (Figure 3.1).

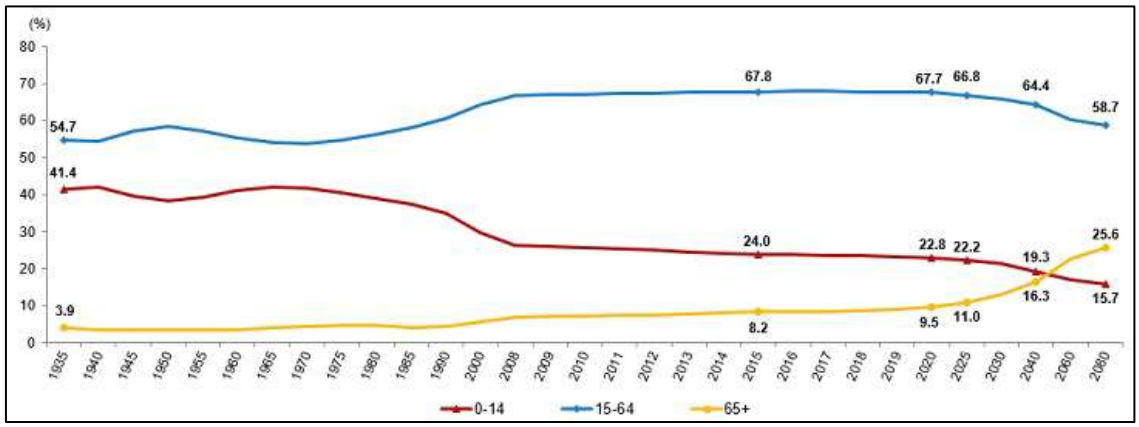


Figure 3.1. Percentages of Population by Age Groups; 0-14, 15-64 and 65+ (TurkStat, 2021)

Population pyramids are defined as graphs showing the change in the age and gender structure of the population. The history of evolution of population pyramid in Turkey justifies the same fact: the population is getting older that will bring new and challengeable social and spatial consequences (Figure 3.2). According to the population pyramid history in Turkey, the structure of the graph will become as in European countries of today's world in near future.

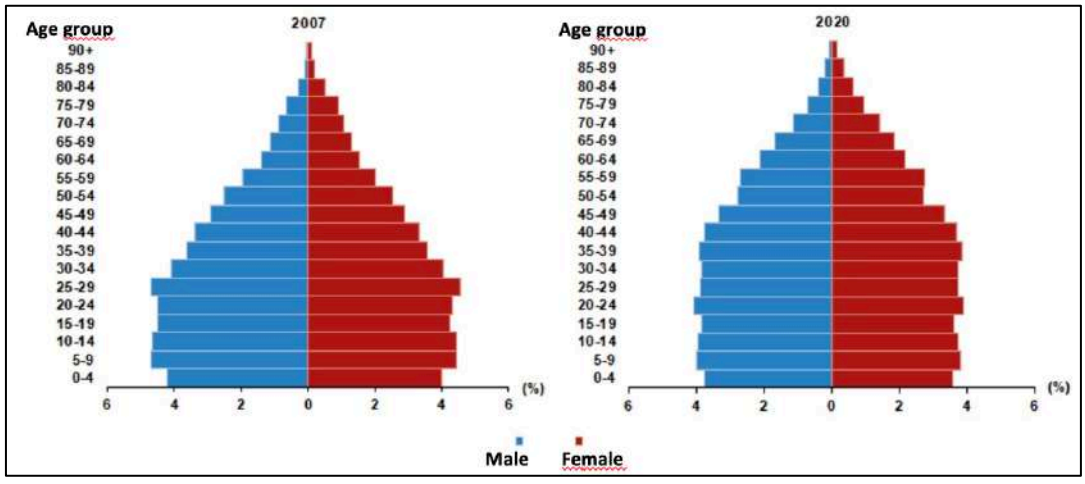


Figure 3.2. Population Pyramid in Turkey; 2007-2020 (TurkStat, 2021)

Table 3.2 states the population projection by age groups. From 2018 to 2080, for the ages between 65-69, the population is expected to increase almost 2.5 times; and for the ages between 90-94, it is to increase almost 11 times. In fact, it is noteworthy to mention that Turkey will not be a young country that requires new insights for urban planning and how urban forms need to be evolved.

Table 3.2. Population Projection by Age Group; 2018, 2023, 2040, 2060, 2080 (TurkStat, 2018)

Age group	2018	2023	2040	2060	2080
Total population	**81.867.223**	**86.907.367**	**100.331.233**	**107.095.998**	**107.100.904**
65-69	**2.604.978**	**3.258.389**	**5.134.906**	**6.000.215**	**6.275.407**
70-74	**1.849.910**	**2.367.384**	**3.924.187**	**5.585.785**	**5.870.277**
75-79	**1.257.817**	**1.561.777**	**3.448.546**	**5.077.366**	**5.201.735**
80-84	**790.992**	**935.541**	**2.137.314**	**3.948.214**	**4.658.887**
85-89	**484.644**	**477.476**	**1.183.678**	**2.333.809**	**3.143.210**
90-94	**146.412**	**215.080**	**426.626**	**927.564**	**1.586.068**
95-99	**23.611**	**45.952**	**97.388**	**306.241**	**536.303**
100+	**4.990**	**6.353**	**21.324**	**63.593**	**141.471**

After stating the increasing population of elderly in Turkey, which is one of the significant concerns of this research, people with disabilities are another prominent group of people in Turkey. It is not reasonable to state people with disabilities as marginal group or the minority within population anymore since a considerable proportion of population have a sort of disability -in 2014 and 2016, it was almost one-fifth of the total population-, as mentioned in Table 3.3. One of the remarkable points in this table is that in 2014 and 2016, almost half of the population has disability for the ages between 65-74, and almost three-quarter of the population has disability for the ages above 75. Therefore, aging population accompanied by disability is a prior fact to be considered by policy-makers in Turkey.

Table 3.3. The Distribution of People with Disabilities in Turkey regarding Age; 2012, 2014, 2016, 2019 (TurkStat, 2020)

	2012			2014			2016			2019		
Age group	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total	**11,6**	8,3	14,9	**17,4**	12,6	22,1	**17,5**	12,1	22,8	**15,3**	11,1	19,4
15-44	**4,2**	3,3	5,0	**7,6**	6,0	9,2	**6,5**	4,8	8,3	**5,7**	3,9	7,6
45-54	**13,2**	9,0	17,4	**22,3**	15,0	29,6	**21,8**	14,8	28,9	**17,0**	13,2	20,7
55-64	**21,1**	12,7	29,2	**31,0**	20,9	40,8	**30,0**	18,2	41,6	**24,5**	17,3	31,5
65-74	**38,6**	29,0	46,6	**48,4**	37,7	57,3	**50,5**	40,2	59,3	**40,3**	29,5	49,7
75+	**63,3**	57,7	67,1	**73,6**	65,5	79,0	**72,5**	60,0	80,7	**67,0**	62,1	70,3

Among disability types, the most prominent ones are orthopedical, visual and hearing impairments in Turkey. Below mentioned Figure 7 classifies the most prominent types of reasoning of reduced mobility as visual disability, hearing disability, difficulty in walking and difficulty in walking up and down stairs (Figure 3.3). Especially between 2012 and 2016, the proportion of each group increases that corresponds to the increase in the number of people with disabilities. More specifically, the proportion of the people having difficulty in walking and in using stairs was usually higher than the other impairments. This fact implies that orthopedically impaired people are to lead as the main actors of the field study of the research as one of the prominent beneficiaries of accessibility measures in Turkey.

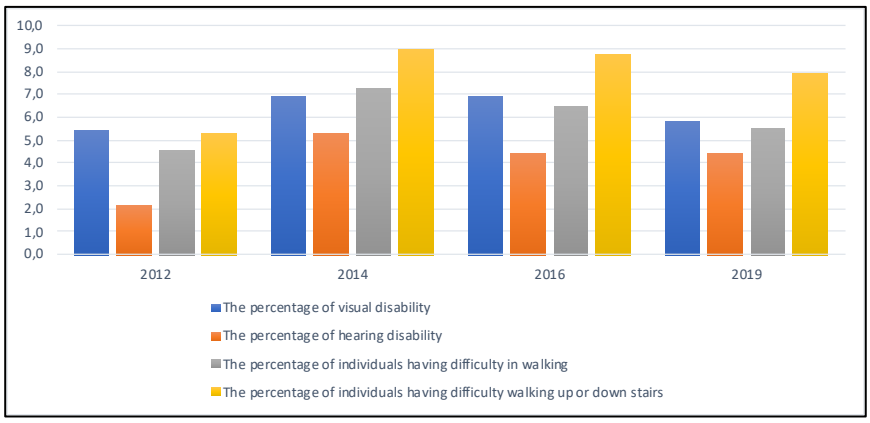


Figure 3.3. The Percentage of Some Groups of Persons with Reduced Mobility in Turkey (TurkStat, 2020)

Accessibility policies and practices need to be highly related with the user -beneficiaries- perspective. In 2010, a survey was carried out considering the registered people with disabilities in Turkey. The disability categorization was made as visual, hearing, language/speech, orthopedic, intellectual, mental-emotional, chronic and multiple. Several questions were addressed to them about accessibility of buildings and urban environment. Below Table 3.4 shows the ones related to the research topic, accessibility of physical environment, which are the accessibility of -inhabited building floors, mobility in the building,

-sidewalks, walkways and crosswalks,

-parks, green areas.

The survey states a clear dominance in the "not appropriate" percentages almost all disabilities for the three accessibility questions. It is also worthwhile to state that the percentages of "not appropriate" gathered from persons with hearing and orthopedical disability is remarkably high. In summary, considering the results of this survey, people with disabilities find accessibility not appropriate for buildings and the entrances (66.3%), walking environment (66.9%) and green areas (43.3%).

Table 3.4. Percentage of Registered Disabled Individuals' Opinions about Accessibility by Type of Disability, 2010 (TurkStat, 2010)

Physical environmental arrangements	Total	Visual disability	Hearing disability	Language and speech disability	Orthopedic disability	Intellectual disability	Mental and emotional disability	Chronic illness	Multiple disability
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Inhabited building (accessing floors, mobility in the building)									
Appropriate	**28,8**	27,2	34,1	41,6	25,4	31,3	33,5	26,5	27,6
Not appropriate	**66,3**	69,2	59,5	51,7	70,8	62,6	59,1	69,5	68,3
No idea	**4,9**	3,7	6,4	6,7	3,8	6,1	7,4	4,0	4,1
Sidewalks, walk ways and crosswalks									
Appropriate	**23,4**	19,2	31,3	37,9	19,3	26,5	28,6	21,5	20,9
Not appropriate	**66,9**	71,3	59,8	54,1	71,9	62,5	59,1	69,8	69,7
No idea	**9,8**	9,6	9,0	8,0	8,8	11,0	12,3	8,7	9,5
Parks, green areas									
Appropriate	**22,3**	19,4	29,1	36,4	22,2	24,7	23,8	20,4	20,0
Not appropriate	**43,3**	46,2	40,0	38,5	48,2	40,7	43,4	45,2	42,4
No idea	**34,4**	34,3	30,9	25,2	29,7	34,7	32,8	34,4	37,6

As a result of the analysis of these statistical indicators, each demographic table or figure reveals some social implications. The population in Turkey will continue to get older that refers to the need for a change in the understanding of "the Right to the City for all" discourse. Persons with reduced mobility are the main beneficiaries of accessibility measures for urban public space including all the sidewalks, crossings, green areas as a human right. Besides, the analysis of data for elderly and disabled population shows that the number of persons with reduced mobility has increased in the last decades and will expectedly continue to increase in near future in Turkey. As a result, it has become impossible to ignore policy-making and design measures of accessibility in Turkey, which is currently an emergent problematic issue. There are two sides in this regard; on one side there is a growing accessibility problem in urban space, on the other side there is an expectancy on the increasing number of persons with reduced mobility. This research mainly aims to put forth another side to overcome the consequences of these two question marks by making the problem definition and solution proposal.

3.2 Legislative Framework of Accessibility in Turkey

Public services are the amenities for the well-being of the whole society provided and maintained by central or local governments such as health, education, transport services and good quality urban environment. To be sustainably mobile independently and to benefit from those services, right to mobility and effectively provided accessibility stand as the prior determinants for the quality of life. The critical point here is the challenge of enabling equality for all persons, including persons with reduced mobility forming a remarkable segment of the total population in Turkey.

According to the 1st article of 'Universal Declaration of Human Rights' (1948), "All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood". As a binding reference with this internationally accepted article, each individual in

society has equal rights, including having the right to move from one place to another freely and safely. Taking this article as an inference to the field of urban transport and accessibility in urban mobility services, a further step reference exists in the article (21-2) as “Everyone has the right of equal access to public service in his country”. Considering urban mobility as one of the most prominent public services, each individual in society having reduced mobility needs to be taken into consideration with respect to accessibility.

Accessible urban services and amenities are basic rights as well as prerequisites for disabled and elderly people. Therefore, the significance of that group of people in society and their accessibility to public transport services have been put as remarkable emphasis by governing authorities of many countries in recent decades. As noted in the report by World Health Organization (WHO) (2011), while the percentage of people with disabilities in the world was 10% in 1970, it has increased to 15% in 2011. In many cities in the world, public or open-public access buildings and transport systems have problems of not being compatible with the needs of accessibility of PRMs. The fact that urban public transport vehicles and services are inaccessible discourages most of the people with disabilities to go out, socialize and benefit from urban services. Consequently, accessibility of the city as a whole is only possible with an effectively working accessibility chain. In addition, not each individual and PRMs has private car or use his/her car in daily life to be mobile for inner or inter-city trips. Therefore, accessibility of urban public transport services as well as walking environment are taken as the focus of the research.

In order to preserve the accessibility as a right for PRMs, the very first step must be legalizing the equality in that sense. Many countries legislated national laws and regulations, and some technical standards for especially people with disabilities including internationally accepted ruling documents to which the countries become party. In this sense, Turkey is one of the countries putting remarkable legalizing efforts to initiate the laws and regulations particularly in recent decades. In this part of the research, the aim is to present a legal framework on accessibility in Turkey. The reason why the legal framework is remarkably significant in this context is that

legislative measures are initial and indispensable steps for a country to make change on a certain issue. Legislative framework in Turkey about accessibility represents the set of rules to reach the level of an inclusive society.

The legislative analysis of the research aims to make a comprehensive and well-structured review of the legal framework for accessibility in Turkey for PRMs. This sub-section mainly consists of three main parts as international framework, national framework in Turkey, summary of technical requirements. The analysis starts with the identification and gathering relevant legal documents that was initiated by defining the international conventions and compromises assumed by Turkey on this respect. The reason why the international context assumed by Turkey is emphasized is that international agreements are have the highest binding legal force after Turkish Constitution in Turkey considering the hierarchy of norms.

Secondly, national laws and regulations are analyzed. The primary legal document here is the Constitution of Republic of Turkey revealing general rights of persons with reduced mobility in certain articles. The latter legal base is 'Law on People with Disability No. 5378' that elaborates the accessibility of passenger transport services for people with disabilities. Thirdly, Accessibility Monitoring and Auditing Regulation in Turkey is worth for the report to be mentioned within primary set of national legislations since it determines main practical requirements and liabilities for people with disabilities.

Thirdly, a summary of technical requirements to present a brief list as reference is mentioned as well as the technical requirements for the accessibility of urban environment. At the end of the analysis of legislative framework, the practical inferences are made to constitute a base for the field research.

3.2.1 Supranational Compromises on Accessibility

In 2007, Turkey signed and became a party to Convention on the Rights of Persons with Disabilities which the United Nations opened up the negotiations in 2000 and

approved in the council in 2006. The countries as parties of this convention accepted to get their internal laws and regulations prepared in compatible with the principles of this supranational legal context.

Article 9 of this convention, with the sub-title of 'accessibility', contains a set of requirements as;

- Living independently and participating all manners of life,
- Enabling access equally to physical environment, to transport, to information and communications as well as their technologies, to and to other facilities and services open or provided to the public, both in urban and in rural areas,
- Developing the implementation of minimum standards and guidelines for the accessibility of facilities and services,
- Training for stakeholders on accessibility issues,
- Providing readable and understandable public signage in braille.

It explicitly notes that PRMs must be enabled to have independent and easy access to urban services, information and communication technologies. Becoming a party of this convention for Turkey is quite meaningful since many serious legislative interventions have been started up thereafter.

Another example of a supra-national document as a policy strategy that focuses on Asian countries is "Incheon Strategy to 'Make the Right Real' for Persons with Disabilities in Asia and the Pacific" coordinated by United Nations and published in 2012. It is a binding strategy for the member countries of United Nations ESCAP (Economic and Social Commission for Asia and the Pacific) as Turkey is one of those countries. The strategy contains Ministerial Declaration on the Asian and Pacific Decade of Persons with Disabilities for 2013–2022 and the strategy involves components as key principles, policy directions, objectives and analysis on different levels as national, sub-regional and regional. Specifically, Target 3B puts emphasis

on public transport as the significant part of the accessibility chain as: "*Enhance the accessibility and usability of public transportation*".

A set of EU rules and standards for accessibility of PRMs is the level that national and local policy-makers in Turkey have been trying to reach, particularly started with the European Union candidate country process of Turkey. EU Passenger Rights Regulations frame the requirements and liabilities on four different sectors as aviation, road transport, maritime and rail transport. Below Table 3.5 demonstrates specifications about the content of those EU legislations

Table 3.5. EU Passenger Rights Regulations for PRMs with Content Summaries

Name of the Regulation on Passenger Rights	**Summary of Related Content on Accessibility of PRMs**
2006- Regulation (EC) No 1107/2006 of the European Parliament and of the Council, concerning the rights of disabled persons and persons with reduced mobility when travelling by air	Article 1 (1): This Regulation establishes rules for the protection of and provision of assistance to disabled persons and persons with reduced mobility travelling by air, both to protect them against discrimination and to ensure that they receive assistance. Article 3: Prevention of refusal of carriage Article 7 → Right to assistance at the airports: When a disabled person or person with reduced mobility arrives at an airport for travel by air, the managing body of the airport shall be responsible for ensuring the provision of the assistance in terms of; communicating and help inside the airport, movement to check-in counter and check-in making, assistance from counter to aircraft and aircraft to seat, baggage procedures, movement to toilet facilities, and all the reverse circumstances. Article 11 → Training: Air carriers and airport managing bodies shall provide knowledge of how to meet the needs of persons having various disabilities or mobility impairments, and provide disability-equality and disability-awareness training to all their personnel.
2011- Regulation (EU) No 181/2011 of the European Parliament and of the Council, concerning the rights of passengers in bus and coach transport and amending Regulation (EC) No 2006/2004	Article 1→ Subject matter: This Regulation establishes rules for bus and coach transport as regards; non-discrimination and mandatory assistance for disabled persons and PRM. Article 9: No additional cost for reservations and tickets to disabled persons and PRM. Article 10 (1b): Carriers, travel agents and tour operators may refuse to carry disabled persons and PRM where the design of the vehicle or the infrastructure, including bus stops and terminals, makes it physically impossible to take on board. Article 10 (4): Transportation of accompanying person free of charge where feasible seated next to the disabled person or PRM.

Table 3.5. (continued)

	Article 11 (1) → Accessibility and Information: Non-discriminatory access conditions for the transport of disabled persons by carrying organizations. Article 11 (5): Information concerning the journey and the conditions of carriage is available in appropriate and accessible formats for disabled persons and PRM. Article 13: Right to assistance at designated terminals and on-board buses and coaches for disabled persons and PRM. Article 25: Passengers are provided with appropriate and comprehensible information regarding their rights under this Regulation at terminals and where applicable, on the Internet.
2007- Regulation (EC) No 1371/2007 of the European Parliament and of the Council, on rail passengers' rights and obligations	Article 1→ Subject matter: The protection of, and assistance to, disabled persons and persons with reduced mobility travelling by rail. Article 19 → Right to Transport: Non-discriminatory access rules for the transport of disabled persons and persons with reduced mobility brought by responsible institutional bodies. Article 21 (1)→ Accessibility: The station, platforms, rolling stock and other facilities are accessible to disabled persons and PRM. Article 21 (2): In the absence of accompanying staff on board a train or of staff at a station, railway undertakings and station managers shall make all reasonable efforts. Article 22 and 23: Assistance at railway stations and on board.
2010- Regulation (EC) No 1177/2010 of the European Parliament and of the Council, concerning the rights of passengers when travelling by sea and inland waterway and amending Regulation (EC) No 2006/2004	Article 1→ Subject matter: Non-discrimination and assistance for disabled persons and persons with reduced mobility. Article 9 → Accessibility and Information: Non-discriminatory access conditions for the transport of disabled persons and PRM. Article 10 → Right to Assistance in ports and on-board ships: Assistance free of charge to disabled persons and PRM. Article 22 and 23: Right to travel information and information on passenger rights.

As a summary of EU accessibility rights table for PRMs, some points become commonly prominent, which are;

- Non-discrimination to be ensured,
- Right to get assistance,
- Encouraging measures (free ticketing including accompanying persons)
- Enabling effective information systems,
- Easily accessible transport systems.

Considering the analysis of those inferences, European Union puts forth significant rules to recognize accessibility as a right for PRMs including facilitating measures to encourage them to use transport systems as an equal right for all.

3.2.2 National Legislative Framework in Turkey

The rules are the measures framing the general context and determining how the system works in detail from a rights-based perspective. In the sense of accessibility in Turkey, the understanding of the concept as a right along with non-discrimination between specifically people with disabilities and others have developed through becoming a party country to supranational compromises as well as establishment of a national legislative framework.

For the analysis of national legal context in Turkey, the investigation begins with the Turkish Constitution to put forth the general upper titles of the rules. Later on, Law on People with Disability[3]-Law No. 5378, which draws the main framework for the rights and requirements of disabilities and PRMs in Turkey, and then Accessibility Monitoring and Auditing Regulation[4], No. 28713 is taken into account as it provides significant forms of eligibility checklists for accessibility of physical environment. In the further part, other related legal contents, and the documents arranging the technical standards will be revealed.

3.2.2.1 The TR Constitution

Constitution of the Republic of Turkey contains three articles regarding the rights, inclusion to social life and working conditions of disabled and elderly people. Main titles of those articles and contents are;

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[3] In Turkish: '*Engelliler Hakkında Kanun'*.
[4] In Turkish: '*Erişilebilirlik İzleme ve denetleme Yönetmeliği'*.

- Equality before the law (Article 10, paragraph added on September 12, 2010; Act No. 5982): "…Measures to be taken for children, the elderly, people with disabilities, widows and orphans of martyrs as well as for the invalid and veterans shall not be considered as violation of the principle of equality".
- Working conditions and right to rest and leisure (Article 50): "…Minors, women, and physically and mentally disabled persons, shall enjoy special protection with regard to working conditions".
- Persons requiring special protection in the field of social security (Article 61): "… The State shall take measures to protect the disabled and secure their integration into community life"

TR Constitution approaches the rights of PRMs by depicting the general framework. It guarantees the equality before law to elderly, people with disabilities and other potentially disadvantaged population, provides special protection to disabled persons and other collectives in the manner of working conditions, and requirement of measures to be taken to protect the disabled and secure their integration in community life. As the top binding document of all legislative framework in Turkey, TR Constitution paves the way for other legal arrangements, particularly for the Law No. 5378.

3.2.2.2 Law on People with Disability

Law No.5378 is the main legal document framing the definitions, rights and requirements of people with disabilities in Turkey. The law contains a set of articles, provisional articles and additions to worth analysis in this respect.

Article 3(f) defines accessibility as:

> Buildings, open spaces, transport and information services, and information and communication technology must be safely and independently accessible and usable by people with disabilities.

The emphasis of the need for being "independently accessible" has critical importance in the sense of the research, which implies the Right to the City and independent mobility principles. In Article 4(d), the emphasis on independent mobility is repeated as: "Ensuring accessibility is essential for people with disabilities to live independently and participate fully and effectively in society".

The 7th Article of the law, having the sub -heading of 'accessibility'- mentions a set of requirements to ensure accessibility standards in built environment and information systems along with information and communication technologies as follows:

> In order to ensure the accessibility of the people with disabilities in the built environment, compliance with accessibility standards must be ensured in the planning, design, construction, manufacturing, licensing and inspection processes. It is obligatory that public and privately owned public transport systems together with public and privately owned vehicles of public transport having nine or more seats excluding the driver's seat are suitable for the accessibility of people with disability.

This article ensures explicitly that accessibility of physical environment and built environment is a right including the requirements of accessibility of passenger transport services

In the Provisional Article-2, defines the first deadline to fulfill the accessibility requirements -for buildings, roads, green areas etc.- of people with disabilities as "…within eight years from the date on which the law enters into force". The eight years here corresponds to 2013, however a postponing was done and the very ultimate deadline was 07.07.2018 that has already passed. Therefore, this highlights the problem of implementation of the legal responsibilities by policy makers of local and central authorities.

In the Provisional Article-3, two main issues are mentioned. The first one gives the responsibility to take necessary measures to make transport services with nine or more seats -excluding driver's seats accessible to Metropolitan Municipalities and Municipalities. In addition, it also reminds local governments to take those measures

within eight years from the date on which the law enters into force. The second part of the article guarantees the accessibility of vehicles of touristic transport, public and private intercity transport services and passenger ships.

There was an addition in the law (as added: 06/02/2014-6518/75; as repealed: 10/09/2014-6552/144; as reissued: 14/11/2014-6567/1) not allowing urban transport vehicles to get authorization certificate, permission and working license unless they are accessible. Therefore, this shows that deadlines and serious consequences was planned and put into force in the law as the rule for accessibility. However, there are still quite remarkable challenges for the accessibility of PRMs currently.

Another additional subparagraph (subparagraph as added: 04/07/2012-6353/34) in the law contains a set of consequences for persons and institutions that do not fulfill the liabilities of accessibility of passenger transport services under their responsibility. The fine is one thousand Turkish Liras to five thousand Turkish Liras yearly for natural and legal persons (not exceeding fifty thousand Turkish Liras for the amount of such yearly administrative fines), and is five thousand Turkish Liras to twenty-five thousand Turkish Liras for Metropolitan municipalities, municipalities and other public entities and institutions imposed by Ministry of Family and Social Policies (not exceeding fifty hundred thousand Turkish Liras). Administrative fines begin from the expiration of time determined in this law for each determination.

The Law on People with Disability mainly encompasses accessibility requirements of urban environment, urban transport and other inter-city transport services, final dates to fulfill those liabilities, what the governing authority is, and consequences as fines in case of not fulfilling necessary arrangements on transport vehicles and their accessible surroundings. In practice, commissions are to be established in each province that enables monitoring the accessibility conditions based on Accessibility Monitoring and Auditing Regulation published in 2013, which also needs to be analyzed within the context of this research to elaborate the core of legal framework more explicitly.

3.2.2.3 Accessibility Monitoring and Auditing Regulation

The 3rd Article of Law on People with Disability, Law No. 5378, provides the necessity for all buildings open to public use, open spaces and the vehicles of public transport served or audited by municipalities to be accessible. Accessibility Monitoring and Auditing Regulation, from Ministry of Family and Social Services, published in 2013, aiming to define the representation and working principles of commissions to monitor an audit accessibility conditions for public buildings, open spaces and public transport vehicles. While Accessibility Monitoring and Auditing Regulation arranges the structure of commissions to control the requirements and liabilities of institutions or legal persons for people with disabilities and PRMs, the prominent source in this regulation is its annex, 'Accessibility Monitoring and Auditing Forms' that contains a set of forms with statements seeking yes/no type answers for accessibility, which are about;

- Buildings,
- Sidewalks,
- Pedestrian crossings,
- Stops,
- Car parking,
- Public telephone kiosk,
- Public toilets,
- Urban parks,
- Vehicles having more than eight seats in addition to the driver's seat and used to carry passengers,
- Rail system vehicles,
- Ships.

The quite detailed accessibility principles for the accessibility of vehicles and service areas give an in-depth content as a guide to make refurbishments or new physical interventions for particularly local governments. Above mentioned points will also be used as indicators of the first field research, defining accessibility condition of urban setting from the researcher perspective.

3.2.2.4 Legal Content Regarding Non-discrimination and Rights of PRMs in Turkey

Discrimination is included in many legal documents in Turkish Law system in the manner of the principle of equality and non-discrimination for all. Below Table 3.6 demonstrates how the Turkish law depicts the frame in respect of discrimination.

Table 3.6. Discrimination Framework in Turkish Legislative System

Name of the Legal Item	Summary of the Content regarding Discrimination
1982-TR Constitution	**Article 10:** Equality before the law without considering any discrimination. (Paragraph added on May 7, 2004; Act No. 5170): Equality between men and women. (Paragraph added on September 12, 2010; Act No. 5982): Not considering measures taken for disabled as the violation of the principle of equality, no privilege to anybody or group, obligation for state organs and administrative authorities to obey the principle of equality
2016-Law on Human Rights and Equality Institution of Turkey[5], Law No. 6701	Under the "Definitions" part; **Article 2 (a) → Discrimination:** Where persons are discriminated against or in favour of others as a result of an action or inaction for one or more than one reason listed in this Law. **(ç)→ Multiple Discrimination**: Where the discriminatory action is related to more than one ground. **(d)→ Direct Discrimination**: Any different treatment which prevents or makes difficult the equal exercise of legal rights and freedoms by a real or legal person when compared with other

[5] In Turkish: '*Türkiye İnsan Hakları ve Eşitlik Kurumu Kanunu'*

Table 3.6. (continued)

	persons having the same rights, on the grounds of discrimination cited in this Law. **(e)→ Indirect Discrimination**: Putting a real or legal person in a disadvantaged situation in the exercise of their legal rights and freedoms where it is not possible to justify the situation objectively, regarding the grounds of discrimination cited in this Law and as a result of actions, processes and applications which do not seem discriminatory. **(f)→ Disabled**: A person affected by behaviours and environmental conditions which restricts their equal, full and effective integration into the society compared with other individuals, due to losses in their physical, mental, spiritual and sensual abilities to a certain extent Under the principle of equality and prohibition of discrimination; **Article 3 (1):** Equal rights and freedom to everyone. **Article 3 (2):** Discrimination on the basis of gender, race, colour, language, religion, faith, sect, philosophical or political opinion, ethnic origin, wealth, birth, civil status, medical condition, disability or age is prohibited. Under the title of "types of discrimination"; **Article 4 (1):** a-Discriminate in favour of/against, b-Order discrimination and fulfil those orders, c-Multiple discrimination, ç-Direct discrimination, d-Indirect discrimination, e-Mobbing at the workplace, f-Not to make reasonable regulations, g-Harassment, ğ-Discrimination based on an assumed ground. Under the title of "the content of non-discrimination"; **Article 5:** No discrimination within the services of education, training, judicial services, law enforcement, health services, transportation, communication, social security, social services, social aid, sports, accommodation, cultural, touristic or similar services

Table 3.6. (continued)

2003-Labor Act[6], Law No. 4857	Under the principle of equal treatment; **Article 5:** No discrimination based on language, race, sex, political opinion, philosophical belief, religion and sex or similar reasons in employment, no discrimination due to the employee's sex or maternity.
2005-Law on the Amendment of some Laws and Decree Laws on the Disability Law No. 5378[7]	**Article 4 (a):** No discrimination against people with disabilities. **Article 13:** Freedom of vocational choice for people with disabilities. **Article 14:** No discrimination against people with disabilities in employment processes. **Article 15:** Equality in taking education.
2011-Law on Foundation of Radio and Television and Their Broadcast [8]Services, Law No. 6112	**Article 8 (e):** Broadcast services without practices of discrimination in terms of race, color, language, religion, nationality, gender, disability, political and philosophical thought, sect etc.

Legislative framework in Turkey to prevent discrimination contains well-defined framework of rules that indicates non-discrimination as a right for persons with reduced mobility.

3.2.2.5 Other Related Legal Contents Including Statement(s) for Accessibility or PRMs

The directly related legislative framework on accessibility of PRMs is also complemented by a set of laws and regulations that indirectly affects the rules in Turkey. Table 3.7 demonstrates the name of the item and a summary content related.

[6] In Turkish: '*İş Kanunu'*
[7] In Turkish: '*Özürlüler ve Bazı Kanun ve Kanun Hükmünde Kararnamelerde Değişiklik Yapılması Hakkında Kanun*'
[8] In Turkish: '*Radyo ve Televizyonların Kuruluş ve Yayın Hizmetleri hakkında Kanun'*

Table 3.7. Other Related Legal Contents for Accessibility

The Name of the Legislative Item	Content
1999-Development Law[9], Law No. 3194	In order to make the physical environment accessible and livable for the people with disability, it is obligatory to comply with the relevant standards of the Turkish Standards Institute in the zoning plans, urban, social and technical infrastructure areas and structures
1999-Planned Areas Type Development Regulation[10], No. 30113	The open-air facilities, building, and access to those structures with transport and communication interfaces to assure the accessibility - TSE disability standards must be considered as TS 23599, TS 12576, TS 9111, TS 12460, TS 12574, TS 12575, TS 12637 and TS 12694
2006-Prime Ministry Circular[11], No. 2006/18	All local governments must comply the people with disabilities standard of TSE for the purchased, leased or audited mass transport vehicles within 7 years and should prepare a short, mid and long-term action plans starting from 2005 within 7 years.
2009-Regulation (2001/85/EC) on Type Approval regarding Special Provisions for Vehicles Used for the Carriage of Passengers Comprising More Than Eight Seats in addition [12]to the Driver's Seat	The regulation contains a set of measures on disabled persons for priority seating, automatic door precaution, minimizing height of steps and handle positioning rules in public transport vehicles.
2009-Technical Regulations for Ships [13](Official Gazette Number: 27409)	Technical standards, rules and liabilities in terms of accessibility of maritime transport vehicles.
2011-The Ministry of Interior Circular for Urban	The need to make all Class I and II type busses under the operation or responsibility of the municipalities compatible with the technical requirements, provision of physical

[9] In Turkish: '*İmar Kanunu'*
[10] In Turkish: '*Planlı Alanlar Tip İmar Yönetmeliği'*
[11] In Turkish: '*Başbakanlık Genelgesi'*
[12] In Turkish: '*Sürücü Koltuğuna İlave Olarak Sekizden Fazla Koltuğu Bulunan ve Yolcu Taşımak Amacıyla Kullanılan Araçların Özel Hükümleri İle İlgili Tip Onayı Yönetmeliğinde (2001/85/At) Değişiklik Yapılmasına Dair Yönetmelik'*
[13] In Turkish: '*Gemilerin Teknik Yönetmeliği'*

Table 3.7. (continued)

Public Transportation Service Buses[14]	requirements for the location of bus stops used in urban public transport and enhancing getting on and off of people with disabilities, the necessity of addition of visual and voice warning information systems inside the bus.
2015-Instruction for Disabled or Passengers with Reduced Mobility in Aviation[15]	Article-8: Arrangements for physical conditions at airports enabling arrival of passengers, easy check-in at a special counter, enhancement of accessibility to toilets, restaurants, malls and communication equipment at the airport, separating at least 5% of seating capacity at airports for disabled and PRM. Article 10: Right to seek help for people with disabilities and PRM by declaring their situation at least before 48 hours from the flight.
2016-Regulation on Manufacturing, Modifying and Assembling Vehicles[16]	Article-17: Vehicle modification for disabled access "In case of modifying the vehicles for accessibility of the disabled persons in accordance with provisional Article 3 of the Law on the Disability of 5378, the regulation determines the required conditions".
2017-Regulation on Ensuring the Accessibility of Intercity Transport Service and Tourism and Service Transport Services[17], Official Gazette No. 29947	The purpose of this Regulation is to specify the procedures and principles regarding the making of passenger transport services and intercity transportation services accessible. The regulation contains accessibility arrangements for intercity road, maritime and railway transport and the ones with touristic aims.

Legal framework for accessibility of passenger transport services presents the general picture where requirements and liabilities for especially people with disabilities fit in. It is worth to mention that the rules in Turkey give national and local government the opportunity to take into action on developing accessibility as the Right to the City for PRMs.

[14] In Turkish: '*Toplu Taşıma Hizmetleri hakkında İçişleri Bakanlığı Genelgesi'*
[15] In Turkish: '*Engelli veya Hareket Kabiliyeti Kısıtlı Hava Yolu Yolcuları Talimatı'*
[16] In Turkish: '*Araçların İmal, Tadil ve Montajı Hakkında Yönetmelik'*
[17] In Turkish: '*Şehirler Arası Yolcu Taşıma Hizmeti ile Servis ve Turizm Taşımacılığı Hizmetinin Erişilebilir Hâle Getirilmesine Dair Yönetmelik'*

3.2.3 Technical Standards Related to Accessibility in Turkey

The set of technical standards on accessibility contains specific rules and liabilities with strict measurements with maximum and minimum numbers to standardize the order in the daily life of PRMs. The standards depict a comprehensive layout for the enhancement of accessibility that listed as follows:

- TS 9111 The requirements of accessibility in buildings for people with disabilities and mobility constraints (Approval date: 22.11.2011)
- TS 12576 Urban roads - Structural preventive and sign design criteria on accessibility in sidewalks and pedestrian crossings (Approval date: 14.06.2012)
- TS 13536 Complementary Turkish standard to TS ISO 23599 (Approval date: 27.12.2012)
- TS 13622 Access requirements in public transportation systems for disabled and handicapped people (Approval date: 25.06.2012)
- TS ISO 23600 Assistive products for persons with vision impairments and persons with vision and hearing impairments -- Acoustic and tactile signals for pedestrian traffic lights (Approval date: 12.04.2012)
- TS 12460 Rail rapid transit system in urban part 5- design criteria of facilities for handicap and elderly people (Approval date: 20.04.1998)
- TS 12694 Railway vehicles- Passenger coaches- Indications for the layout of coaches suitable for conveying disabled passengers in their wheelchairs (Approval date: 14.07.2011)
- TS 8237 Elevator placement and dimensions for disabled people Class I-II-III (Approval date: 10.04.1995)
- TS 8357 Public WC Categorization and General Rules (Approval date 14.06.2012)

- TS EN ISO 10535 Attributes for disabled people elevators and testing methods (Approval date: 03.07.2007)
- TS 11783 Urban road - bus stop placement rules (Approval date: 02.01.2014)
- TS 12127 Urban roads - Railway Transport System - Part 1: Underground station design (Approval date: 18.02.2017)
- TS 12174 Urban roads - pedestrian ways and zones design rules (Approval date: 14.06.2012)
- TS 12186 Urban roads - Railway Transport System - Part 2: Upper ground station design (Approval date: 02.04.1997)
- TS 12527 Urban roads - Railway Transport System - Part 14: Station platform seat components (Approval date: 24.02.1999)
- TS 12574 Urban roads - Railway Transport System - Part 10: Station indication and sign design rules (Approval date: 08.04.1999)
- TS 12575 Urban roads - Railway Transport System - Part 11: Information system and displays (Approval date: 08.04.1999)
- TS 12637 Urban roads - Railway Transport System - Part 22: Ticketing design rules (Approval date: 13.04.2000)
- TS ISO 23599 Supporting equipment for visually impaired people - sensible walking surface signs (Approval date: 14.06.2012)
- ECE-R 107 Annex 8- Concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions (Approval date: 16.11.1995)

- UIC 565-3 ED.2 Indications for the Layout of Coaches Suitable for Conveying Disabled Passengers in Their Wheelchairs (Approval date: 01.05.2003)

The technical standards of accessibility have measures mainly on accessibility in buildings, urban roads, public transport systems pedestrian crossings, for walking surface indicators, acoustic and tactile signals for pedestrian traffic, standards for railway vehicles, elevators, toilets, bus stops, railway stations, information system and displays for railway and road transport systems and ticketing design. All the standards and legal framework reveals that the general picture in Turkey demonstrates a well-designed legislative framework that has the quality to satisfy the requirements for people with disabilities and PRMs. In other words, by means of rules, accessibility of PRMs in Turkey is highly promoted. The rules of accessibility in Turkey are composed of the combination of supranational documents, national legal framework and technical standards resulting in a well-defined set of measures (Figure 3.4).

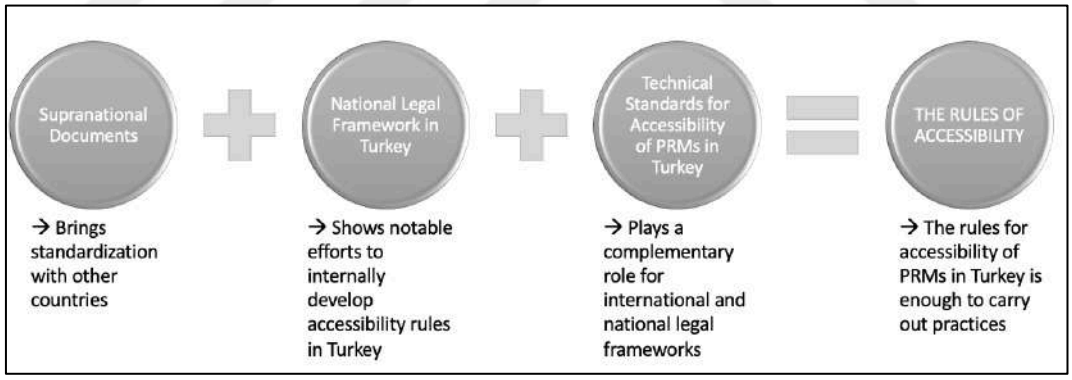


Figure 3.4. The Demonstration of the Composition of Accessibility Rules in Turkey

Consequently, Chapter 3, defining accessibility context in Turkey, is composed of two main sub-topics, which are socio-demographic approach and legislative framework. As a result of the analysis within this framework, below points represent the conclusive inferences.

- In terms of socio-demographic context, it is noteworthy to mention that the population is aging in Turkey that means the percentage of persons with reduced mobility will certainly increase in near future. Therefore, inferences from the current accessibility condition in Turkey and demographic data and projections imply that there is a high probability to have more vulnerable people deprived from their Right to the City in Turkey due to barriers against accessibility.
- In terms of the analysis of legislative framework, it is definite that Turkey has taken fundamental steps to ensure accessibility rights and the rights of people with disabilities. One of the research sub-questions was: *Is the legal framework one of the underlying reasoning behind inaccessibility of cities in Turkey?* The answer is no, despite some minor improvement is needed. In other words, the rules in Turkey are enough to open the way for PRMs to obtain their Right to the City through seamless journeys enabled by accessibility chains.

These gaps shed light on the general structure, research questions and research methods of the thesis.

CHAPTER 4

METHODOLOGY

In this chapter, the methodology of the research is explained by mentioning the research context paving the path towards research aims, hypothesis and guiding principles-assumptions, and research questions, a philosophical approach to reveal knowledge generation methods in accordance with research questions, and finally the explanation of each research methods. Firstly, a methodological content analysis is presented over international and national publications. Then, it is noteworthy to continue with a review of the context to justify why the thesis adopts right to access, accessibility of PRMs and independent mobility as underlying concerns of research methods. Finally, detailed analysis of research methods is stated along with philosophical approaches and research questions, hypothesis and aims.

4.1 Inferences from Accessibility Literature Review

The theoretical review of accessibility of PRMs as a right to access gives a framework asserting the current discussions and matters. As a connection of this theoretical review and thesis research, it is noteworthy to analyze the current literature to determine what will be the positioning of the thesis research among other publications in terms of research method, main research theme, target groups in the research, and main topic. This literature review analysis enables;

- what makes the thesis research unique and different, and

- which current gaps the thesis will fill through its contributions.

In this respect, the analysis will be divided into two parts: firstly, literature analysis over selected international publications, secondly specific analysis over selected

publications on Turkey. International publications review is done separately because it is important to see where can the thesis research be positioned within international perspectives. Besides, specific literature review analysis on Turkey is done separately, too because it is remarkable to have idea the position of the thesis research in the context of Turkey since the matters of the research focuses directly on Turkey along with researches conducted in Ankara.

Accessibility related national and international literature analysis is done by utilizing the method of content analysis. Content analysis is used to put forth what the data is about, what the main objectives are and how the methods are applied to the researches. Here, content analysis is applied to investigate the current literature. In this respect, according to Stone et al. (1966), "content analysis is a research technique to draw systematic and objective conclusions from the characters defined inside the text". According to Berelson (1952), made a definition of content analysis as "a research technique for the objective, systematic and quantitative description of the manifest content of communication". In addition, a more specific definition of content analysis was put forth by Krippendorff (2004) as "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use". Within this research, quantitative content analysis is utilized to generate frequencies and meanings over publications. Roberts (2000) explains the steps applied in quantitative content analysis. Quantitative content analysis is based on the premise that a large number of words in a text may be grouped into a smaller number of content groups or categories. By the mid-twentieth century, a group of Harvard academics had devised a mechanism for extracting content categories from text, counting their appearances in sampling text blocks, and examining correlations between categories using the frequency matrix.

A typical literature review is a written overview of major writings and other sources on a selected topic. However, the content analysis of a literature means that the ideas and discourse of different people or groups on a specific issue or a problem are addressed in a systematically drawn framework. The ideas, discourse and any

outputs obtained as a result of the review provide insights to analyze the research questions of the thesis through a systematic approach.

For the analysis of selected the most related 27 international publications, the data was separately inserted into an MS Office Excel file to generate tables and graphs. While selecting those documents, different search compositions of keywords are used putting a specific attention to include ‘accessibility’ and ‘disability’. The same procedure was applied for the selected most related 47 publications specifically written about Turkey. Publication selection criterion in terms of date is that only the ones written after 2000 and onwards were considered for the analysis. The outputs obtained as consequences of this analysis are presented in the form of graphs and tables.

4.1.1 Analysis over Selected International Publications

The outputs of analyzed 27 publications consist of research methods considering their use as pairs or triad, target groups of researches (people with disabilities, elderly etc.), main research themes inferred from publications, main topics included within publications and its comparison with this thesis research, and finally, what makes the thesis research unique and different from the examined international ones. Article codes, titles and main topic of publications are listed in Appendix A.

Before beginning the analysis of methods, it is important to keep in mind that the three research methods of this thesis are desk research for accessibility legal framework analysis, case study research for spatial accessibility analysis, and focus group discussion to infer the opinions of user perspective about spatial, societal and administrative accessibility barriers. As seen in Figure 4.1, the first output of international publications is about frequency of research methods used in publications. It needs to be noted that some of the researches use more than one method, which is analyzed in the next graph. The prominent three methods revealed as desk research (10 times), case study research (9 times) and questionnaire survey (7 times). It is worth to note that it is surprising to see focus group discussion method

as the least used one in frequency ranking (only 1 time), which had been expected to be utilized more in accessibility researches prior to beginning of this analysis. The other three methods used are GIS mapping (3 times), in-depth interview (3 times) and travel diary (2 times).

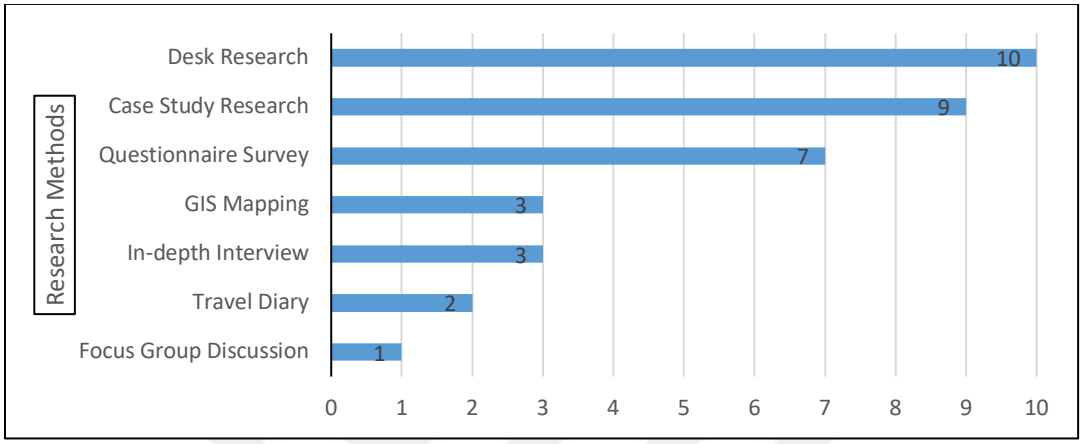


Figure 4.1. Frequency of the Methods Used in International Publications

In relation with the method analysis, some of the researches used two and one of them used three methods to conclude their ultimate aim. Figure 4.2 presents that three of the researches used case study research with GIS mapping, two of them used case study research with questionnaire survey, two of them used desk research with case study research, and one of them used three methods in one research: case study research, questionnaire survey and in-depth interview. Thesis research is an example of the last exceptional one using three methods in one research.

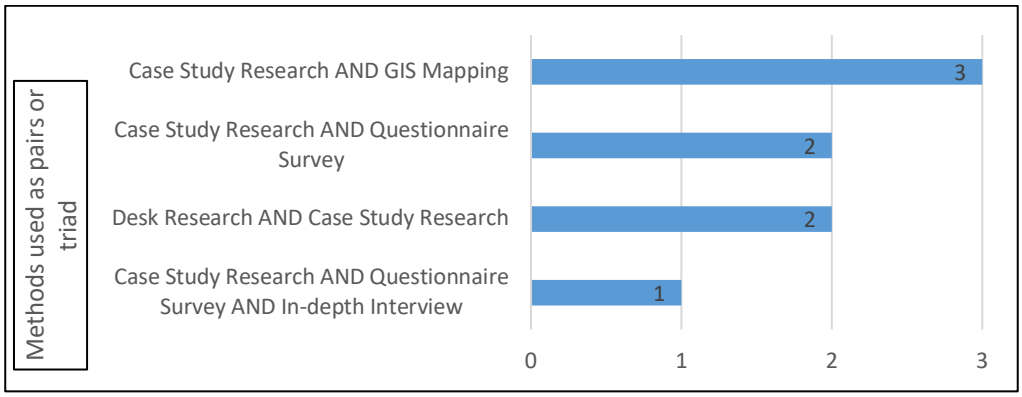


Figure 4.2. Frequency of the Methods Used as Pairs or Triad

Target group means the related group of people as the main beneficiary of the outcomes of the research. Prior to beginning, it was expected to see people with disabilities at the top since the mainstream discourse in this sense relates accessibility or spatial barriers with the matter disability. In accordance with this prior expectation, Figure 4.3 shows that people with disabilities are the most studied target groups in international publications (13 times). Then, people with disabilities along with elderly people comes (6 times). The remarkable point revealing from pair or triad method analysis is persons with reduced mobility (PRMs) is one of the least studied groups, which is the target group of the thesis research. For instance, accessibility needs, perception of spatial barriers, and quantity or type social barriers are different for a physically impaired and visually impaired person. Therefore, it is significant to consider not just as people with disabilities or elderly, but as any person having reduced mobility due to accessibility barriers. Moreover, one another exceptional aspect of the thesis research is considering parents with baby stroller among the group of people having reduced mobility in Turkey that are directly under investigation within one of the focus group discussions of the thesis.

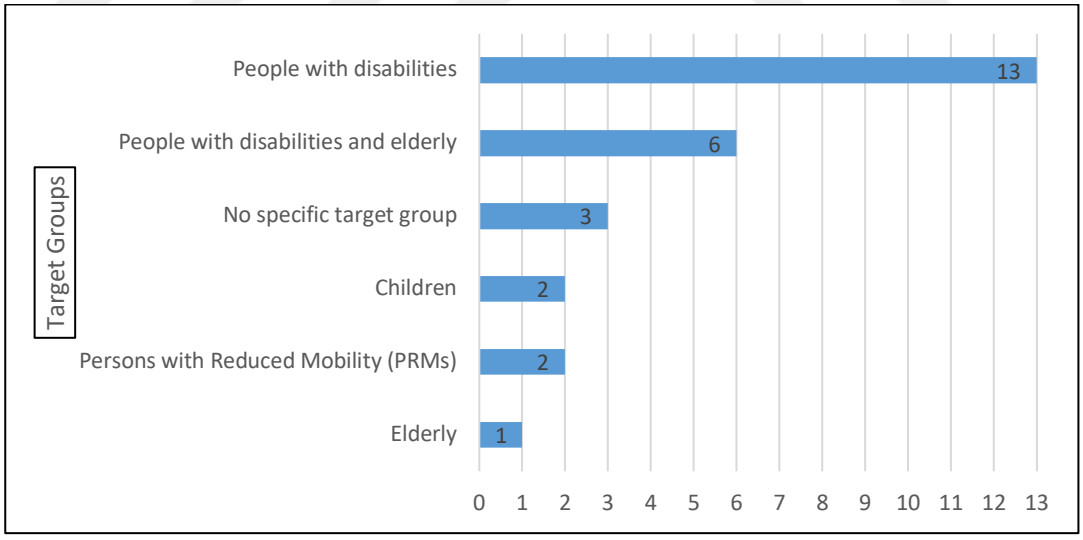


Figure 4.3. Frequency of Used Target Groups

Among the selected 27 publications, main themes are extracted on which the related researches depended (Figure 4.4). The two prominent ones are accessibility of public

transport -10 times- and accessibility of urban space -6 times- along with their use as a pair -5 times-. It means the examined researches are mainly about accessibility of public transport and urban space. As mentioned in theoretical review, accessibility is not a matter of accessing a single component of urban service or of achieving getting on and off a bus without problem. In Turkey, accessibility needs to be considered as a chain composed ideally of trip planning with efficient information and communication systems, accessing stop or station without facing any barrier, getting on public transport vehicle, and fulfilling going and return trips without facing any spatial, societal and administrative barriers. In line with this, the thesis approaches accessibility concept as spatial accessibility chain complemented by legal, societal, and administrative layers upon each other.

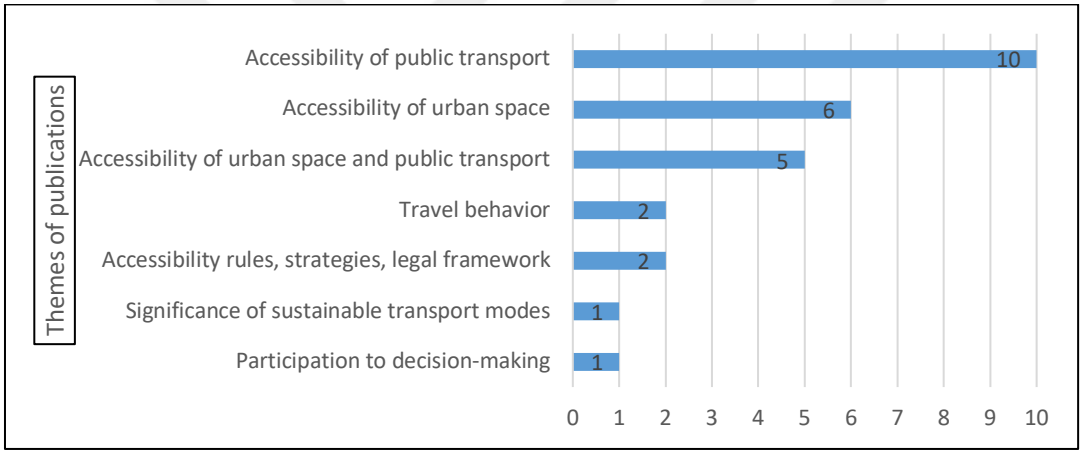


Figure 4.4. Main Research Themes of International Publications

Later on, main research topics of publications are inferred as topic statements and summarized under eight categories as seen in Table 4.1. Besides, main topics of the thesis research are also listed as right to access and independent mobility that were deeply investigated in the theoretical review, legal analysis of accessibility as a baseline map of rules of the research, and accessibility barriers under three aspects: spatial, societal and administrative. The thesis research depends not on one single topic, but necessarily on a set of topics interrelated with each other.

Table 4.1. Main Topics of International Publications and Thesis Research

Main Topics of Selected International Publications	Main Topics of Thesis Research
Inclusive urban transport and spatial design	- Right to access - Independent mobility - Legal framework analysis - Accessibility chain - Spatial accessibility barriers - Societal accessibility barriers - Administrative accessibility barriers
Analysis of accessibility barriers	
Legal framework analysis	
Social empowerment	
Rights and accessibility	
Universal design	
People with disabilities and sustainable mobility	
Analysis of travel behavior	

As a consequence, an accessibility photograph of current condition and gaps is taken. And, there are several obvious points that make my thesis research unique and different compared to other international approaches. The acquisitions shown in Table 4.2 indicates that the thesis outputs will be prominent candidates to fill the certain gaps emerging from literature review through content analysis. the ultimate analysis for selected international publications is done in terms of research method, main theme, target group, and finally research topic.

Table 4.2. The Uniqueness and Significance of My Thesis Research

In terms of What	What makes my research unique and different compared to other researches?
IN TERMS OF RESEARCH METHOD	Thesis research includes focus group discussion combined with spatial GIS case study analysis and desk research for legal analysis. In thesis research, case study method with respect to creating spatial accessibility barriers GIS database is used. None of the international researches have attend to create GIS database and analyze accessibility barriers. In thesis research, focus group discussion is one of the core methods to investigate user perspective, which has been the least used method in international literature. (The significance of focus group discussions is explained in Methodology chapter)

Table 4.2. (continued)

IN TERMS OF MAIN THEME	Thesis research includes three research themes within one research that are the mostly included top two research themes and accessibility legal framework analysis in international publications: Accessibility of urban space Accessibility of public transport Accessibility legal framework
IN TERMS OF TARGET GROUP	Persons with reduced mobility (PRMs) are analyzed only in two researches in international literature, which stands as a gap in terms of target group considering the significance of PRMs mentioned in theoretical content of the thesis. In thesis research, the significance of PRMs in accessibility has been adopted and used as the main beneficiaries of accessibility in Turkey. Besides, thesis research is the first and only one studying the perspective of parents with baby stroller for accessibility.
IN TERMS OF MAIN RESEARCH TOPIC	Thesis research proposes that accessibility contains a set of sub-topics that needs to be synthesized without separating one topic from another. Because, these sub-topics are interdependent to each other. For example, without being aware of legal condition, it would be a mistake to depend all accessibility problems merely to urban space. The same relationship is applicable for right to access, independent mobility, social and administrative barriers. There is no research studying accessibility chain. International publications combine only accessibility of urban space and public transport. However, the thesis research approaches accessibility as a chain starting from trip planning and information along with combining other parts of accessibility as links of the chain.

Keeping the outputs content analysis obtained from international literature review, one more additional content analysis review is made over the selected researches that were directly conducted about Turkey. This examination will bring about a conceptually broader but geographically localized approach to accessibility concept along with a deeper understanding of current condition and gaps.

4.1.2 Specific Analysis over Selected Publications on Turkey (National Publications)

Content analysis gives a comprehensive quick-view of the general picture on accessibility in Turkey with respect to what the main problem areas are, which topics have been intensively investigated, and from which perspective the problems are defined. The outputs of analyzed 47 publications specifically studied about Turkey are composed of which research disciplines have studied accessibility, frequency of the methods used, main theme, main topic, grouping of objectives, and main inferences. Article codes, titles and main topic of publications are listed in Appendix B.[18]

First of all, the scholars of 47 publications studied on Turkey were from various disciplines. It is worth initially to understand which discipline has intensively been studying accessibility in Turkey. Prior to beginning of this analysis, it was expected that spatial and built environment-oriented disciplines become prominent. And among them, urban planning was specifically expected to be somewhere at the top of the list due to the ability to synthesize and define problems comprehensively. As expected, scholars from city and regional planning departments have been the ones mostly studied accessibility. Figure 4.5 shows how many publications belong to which research discipline that demonstrates the most prominent research outputs are from the departments of City and Regional Planning (9 publications) and Architecture (8 publications) followed by Landscape Architecture (5 publications) and Public Administration Departments (4 publications). In addition, what the meaning of this output is to show how accessibility has become a cross-cutting concept and area of research.

[18] For national literature review content analysis and legislative framework analysis on Turkey, the related deliverables produced specifically by the author for the Project -*Technical Assistance for Accessibility of Passenger Transport Services in Turkey; Project Code: DOGER/APTST/TR2013/0740.10-2/SER/007/001*- are partially utilized

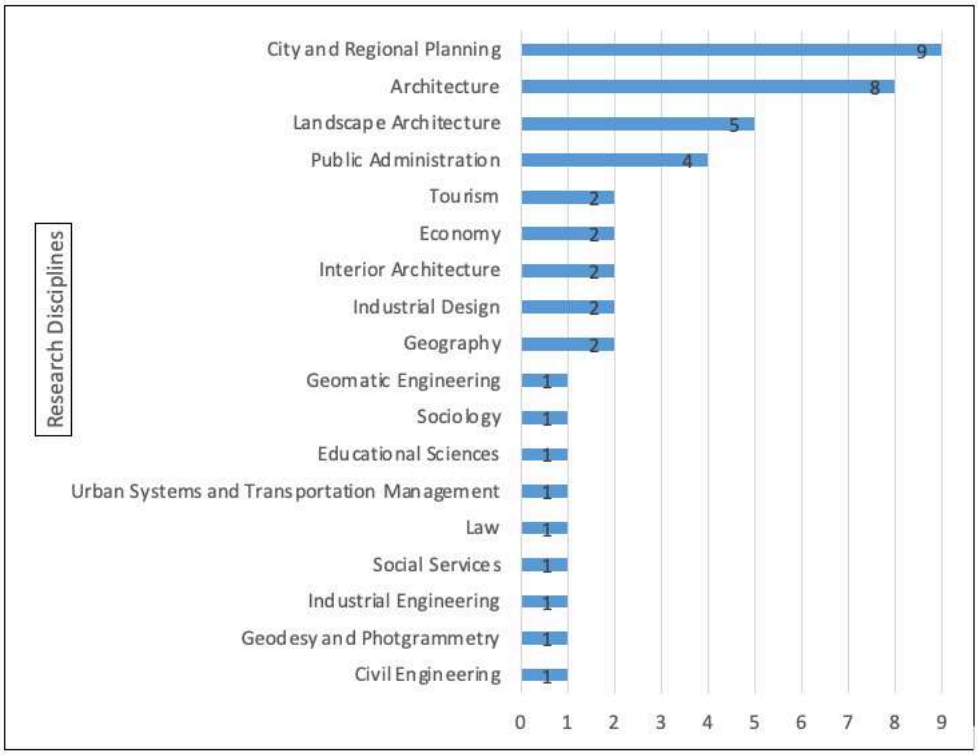


Figure 4.5. The Research Disciplines of the Publications

The research methods used for the analysis on Turkey give insight for what the general tendency has been in accessibility analysis in Turkey by means of data collection and processing method. While some publications use one single method to conduct research, different methods are also used in some others simultaneously. According to Figure 4.6, the prominent three methods revealed as desk research (25 times), case study research (21 times) and questionnaire survey (12 times). Compared with the previous international publications content analysis, standings of the first three ranking remain exactly the same. However, focus group discussion has been adopted 5 times by the scholars studying accessibility on Turkey whilst it was the last ranking in the other content analysis.

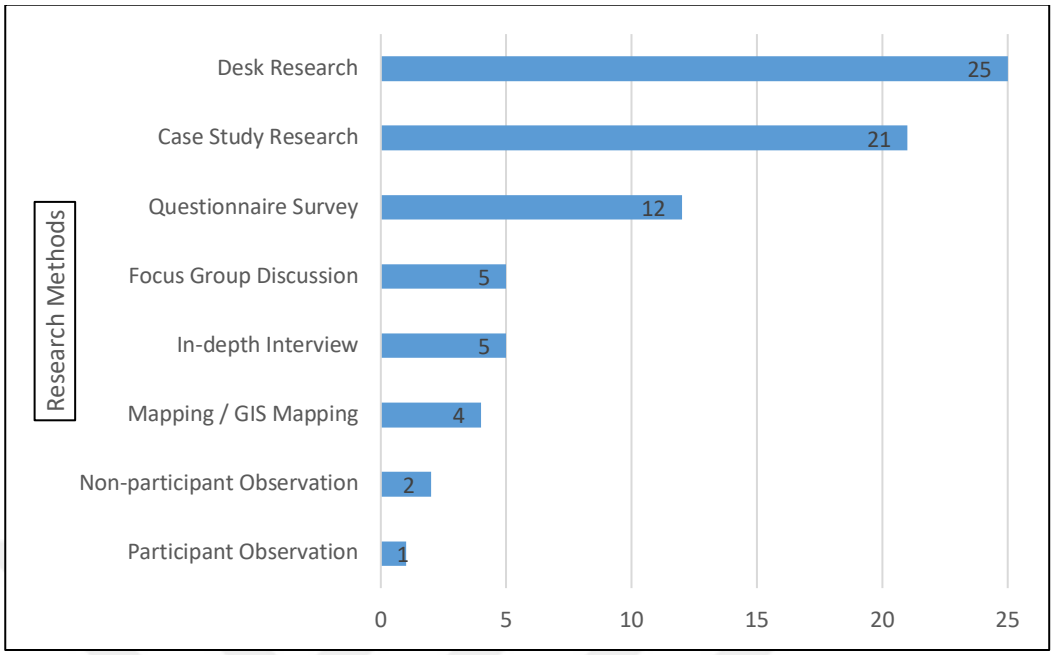


Figure 4.6. Frequency of the Methods Used in the Publications on Turkey

The question of what the researches on Turkey are about is important to understand the main emphasis of the researches on Turkey to shape the current discourse. A seen in Figure 4.7, the publications focus on accessibility of urban space, accessibility as a conceptual focus along with legal accessibility analysis, and accessibility of public transport. These prominent themes have also been observed in previous international publications' content analysis except for legal and conceptual analysis.

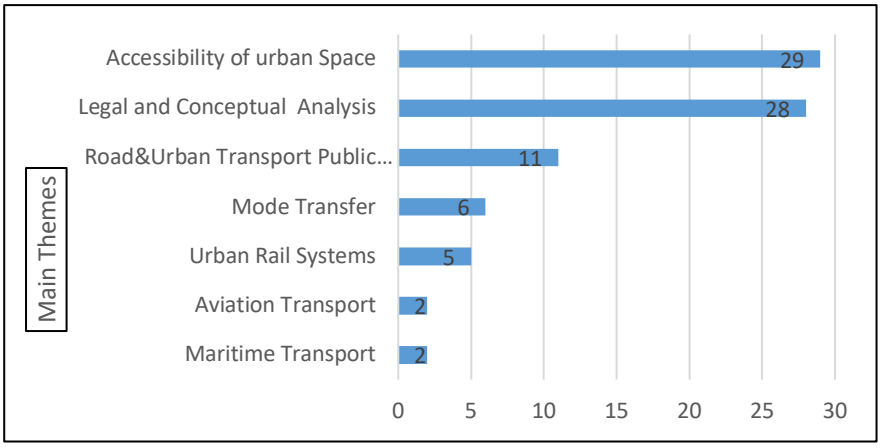


Figure 4.7. The Main Theme of the Publications

As a more detailed presentation of the research themes, the demonstration of main research content of the publications is seen (Figure 4.8). 37 publications contain sections or are entirely studied related to the accessibility of urban space standing at the top of the list. Legal framework including administrative analyses and explanations is the second frequently used one (15 publications). It is worth to note that participation, awareness raising, information systems, and training are the ones emerged publications on Turkey different from the content analysis outputs of international publications. These four topics were also revealed during focus group discussions, lack of which stands as significant accessibility barrier.

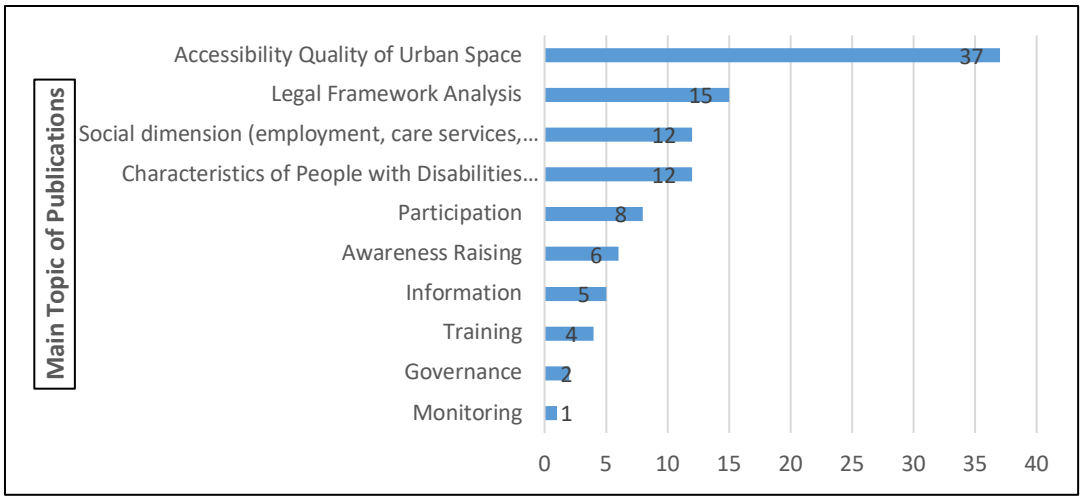


Figure 4.8. Research Content of Publications

Heretofore, the content analysis of the researches on Turkey notes a systematic picture of what the current situation of accessibility is, which can be summarized as:

- Accessibility has been a significant research topic for the scholars and researchers of urban planning that means accessibility is a significant matter of urban space and therefore mobility planning and design.
- The three mostly preferred accessibility research methods in Turkey are desk research (making researches as compilation of the previous studies), case study research, and questionnaire survey that are same with the previous content analysis on international publications. It is significant to vary the types of research methods for accessibility studies. Having focus group

discussions with persons with reduced mobility could be one of the most effective qualitative research alternatives to enable a deeper understanding of barriers from the user perspective.

- Considering research topics, similar with the outcomes of content analysis of international publications, a gap is visible for the researches on Turkey studying the concept only as accessibility like one single trip-leg or link of a chain, not as an entire chain that needs to start from trip planning until going back home.
- Accessibility of urban environment is the topic that has been mostly studied. However, different further approaches upon accessibility of urban space needs to developed in Turkey as seamless accessibility chain and the analysis of user perspective.

To obtain the most highlighted benchmarking points about the contents of the publications written on Turkey along with the gaps, the content data is filtered out step by step. As the first step, grouping the content of the publications under more general headings is expected to give first insights about what the foci of the researchers in Turkey regarding accessibility and disability are (Table 4.3).

Table 4.3. Grouping the Objectives of Publications

Main Objectives of the Publications Reviewed on Turkey	**A More Detailed Sub-Content**
Universal design	-Understanding the concept
	-Comparison between the rules and case study area
	-Implementation
Awareness raising	-for designers
	-for educators, students
	-for local governments
	-for the society
	-for the people with disabilities themselves
Analysis of barriers face by people with disabilities	-in pedestrian environment
	-in public transport
	-social and psychological manners

Table 4.3. (continued)

	-difficulty in increasing quality of life
Participation of people with disabilities	-Preventing discrimination
	-into social life
	-into urban life
	-into decision making process
Barrier-free design	-proposing a framework for it
	-urban infrastructure
	-building entrances
Analysis of legislative framework	-in terms of central government policies
	-implementation of Accessibility Monitoring and Auditing Regulation
	-sufficiency of existing legal measures
	-comparison between international and local legal agenda
Accessible tourism	-in terms of disabled access to coaches and other facilities related to touristic intercity trips

As the second step, key findings of each publication were analyzed and, as a result, the conclusions are summarized as the ultimate conclusive analysis of publications on Turkey prior to creating a list of conclusive benchmarking points, which is mentioned in Appendix C.

Among the publications, there is not any of them deeply focusing on the user perspective. It is seen that there are ones merely focusing on in depth interview, questionnaire survey and focus group discussions, however the perspective of the main beneficiaries of accessibility measures in Turkey, namely PRMs, have not been supported with other sorts of approaches as legal analysis or spatial case study analysis. The thesis research gives an exact methodological framework combining legal analysis as desk research, case study analysis through GIS mapping, and focus group discussions to reveal user perspective.

As a result of the literature review on Turkey, considering the detailed content of publications, several points stand as the main inferences of accessibility. Such a limited number publication analysis does not surely represent the general current condition in Turkey, however the outputs, which are mentioned below, give a general idea about the discourse regarding accessibility in Turkey.

- The lacking issues have emerged as;

  - awareness raising (training, education etc.)

  - physical drawbacks for the accessibility of vehicles, stations/stops,

  - urban spatial barriers,

  - lack of smart information systems at public transport stops and vehicles,

  - lack of independent mobility perception,

  - the need for user involved participatory design processes,

  - excessive car traffic discouraging people with disabilities to go out,

  -ignorance of the solution to make urban mobility more sustainable (encouraging public transport, walking and cycling).

- Accessibility has not been a matter of accessibility chain -taking into account what theoretical review proposes- in Turkey. Taking the links of the chain into account as a whole is a gap as in previous content analysis on international publications. In addition, there are even very few researches on accessibility of public transport systems.

- Legal-administrative analysis is highly taken into account in the literature. The prominent output obtained from the analysis of publications in this respect is that the rules of accessibility of PRMs in Turkey has already reached a satisfactory level paving the way for a well-designed and efficiently working accessibility chain enabling seamless journeys. In other words, the legislative framework has already been created as a base map that expects barrier-free accessibility layers upon itself. These are spatial, societal, and administrative barriers that need to be eliminated and then complement the legislative basis.

In terms of the analysis of selected publications focusing on Turkey, several gaps emerge as;

- On the one hand, a specific concern on the consideration of accessibility chain does not exist within the researches in Turkey. On the other hand, accessibility chain is a prerequisite to enhance the Right to the City for PRMs since if one single link of the chain is missing, the accessibility of entire journey could be terminated.
- Accessibility policies are to be made by different perspectives in Turkey such as user perspective, administrative perspective (measures taken by central and local government), academic perspective and researcher's perspective. Most of the studies in Turkey have been conducted from researcher's perspective that means the owner of the research carries out the works from an external approach. However, the user perspective -users' (PRMs') approach on the problematic since they are the main beneficiaries of accessibility measures- has not been taken as the core emphasis of the researches that needs to be complemented by other perspectives (administrative and academic perspectives).
- Persons with reduced mobility has not been a component of the discourse in accessibility or disability researches. The main focus has been on people with disabilities; however, there are others affected by inaccessible urban space.
- The Right to the City and the consideration of urban mobility as a matter of right have not been a component of the discourse in the literature on accessibility and disability in Turkey.
- Among the selected relevant publications, there is no research combining spatial quantitative and qualitative research methods.

The inferences and gaps mentioned above are also cross-checked with the outputs of spatial case study analysis and focus group discussions, which are discussed in detail in the 5th and 6th chapters as the fact that accessibility barriers are composed of a set of aspects interrelated with each other: legal, spatial, societal, and administrative.

4.2 Research Context

Mentioning the context of thesis research aims to make an initial filtering process to the information given in Chapter 2 and Chapter 3, which are theoretical literature review and accessibility context in Turkey. Summary tables of these chapters are revealed respectively under the headings of key concepts, main content, and main outputs. Particularly, 'main outputs' as the last column is identified by statements and questions. Statements represent what the content concludes considering the related issue. For example, as seen in table 15, content named 'The Right to the City Concept' generated one statement and two questions. Therefore, some questions have also been inferred in the last column referring that the issue in the related content addresses us to question. Some of these statements and questions have been directly transformed into a research question or hypothesis, or have leaded the path to infer a hypothesis or research question.

Table 4.4 presents the first analysis in this respect for Chapter 2 and analysis of accessibility literature. It shows three columns from a general key concept to a specific conclusive statement or question from the left to the right. Main key concepts are divided into four groups considering the heading system of the chapter, which are;

- the Right to the City

- accessibility concept and persons with reduced mobility,

- independent mobility

- analysis of accessibility literature.

Table 4.4. Summary of Chapter 2: Key Concepts, Content, and Main Outputs Inferred

Key concept(s)	Content	Main Outputs from Chapter 2- Theoretical Review: Conclusive Statements and Questions
The Right to the City	The Right to the City Concept	The Right to the City and right to access are interrelated concepts with each other
		What is the meaning of right to participation by means of accessibility of PRMs?
		The Right to the City is a collective right for Harvey (2008); what does this mean for accessibility of PRMs?
	Contemporary Urbanization, Mobility and Inaccessible Urban Space	Is car dependency an accessibility barrier for PRMs?
		If yes, is car dependency a spatial, administrative or both spatial and administrative accessibility barrier?
		What would be the way for a city to become accessible within the current system of neo-liberal urbanization? (from administrative aspect)
	Whose Right to Mobility?	Mobility related social exclusion is a significant barrier of accessibility (meaning societal barriers)
	Critical Approach to the Right to the City	If the city is spatially, societally and administratively inaccessible, it is not possible to obtain the Right to the City.
Accessibility concept	Accessibility Concept	Accessibility is one of the fundamental human rights.
	Accessibility Chain	Accessibility is composed of interrelated links as a chain, therefore making only one single link accessible will not solve entire accessibility problematic.
	Inclusive Accessibility	Right to access has a spatial and societal dimension.
	Supranational Documents Ensuring Accessibility as A Right	Right to access is a right ensured by supranational documents.
Persons with Reduced Mobility	Why 'for All' As the Matter: from People with Disabilities to Persons with Reduced Mobility	Why should not only disabled but PRMs be defined as the main beneficiaries of accessibility?
	Disability Theory and Universal Design	Contemporary social model of disability is the main assumption of the thesis research.
Independent mobility	Spatially and Societally Sustainable Right to Access	Right to access is a right to be ensured by enabling independent mobility.
	Independent Mobility for PRMs	What does independent mobility bring about by means of right to access?

Table 4.4. (continued)

Analysis of accessibility literature	Analysis over Selected International Publications	-Thesis research is unique and fills the certain gaps inferred from international and national publications. - None of the international researches have had attend to create GIS database and analyze accessibility barriers while it is one of the core methods in the thesis research. -Focus group discussion is one of the core methods to investigate user perspective, which has been the least used method in international literature. -Persons with reduced mobility (PRMs) has not been a component of the discourse in accessibility or disability researches, which stands as a gap. -Besides, thesis research is the first and only one studying the perspective of parents with baby stroller for accessibility. -There is no research within selected publications studying accessibility chain. The thesis research approaches accessibility as a chain. -Most of the studies in Turkey have been conducted from researcher's perspective that means the owner of the research carries out the works from an external approach in Turkey. -Right-based approach is missing in studies on Turkey.
	Specific Analysis over Selected Publications on Turkey	

Considering summary analysis of Chapter 2 and analysis of accessibility literature in Table 15, each content item is briefly explained to constitute what Chapter 2 puts forward.

- The Right to the City Concept: As the starting point of the thesis, the Right to the City concept initiated by Henri Lefebvre constitutes the basis of the research. It was primarily proposed at the beginning of the thesis that there are accessibility barriers in urban space, however it is not only spatial but also a matter of human rights. Then, theoretical review indicated that the Right to the City and right to access are interrelated concepts with each other. In addition, Lefebvre contributed this concept by discussing two main components that are right of appropriation and right of participation. In this respect, the question of 'What is the meaning of right to participation by means of accessibility of PRMs?' is asked to learn if users have had any demand or attempt to participate in decision-making processes for accessibility. Another question, 'The Right to the City is a collective right for

Harvey (2008); what does this mean for accessibility of PRMs?', is related with what collective thinking and action processes mean in terms of right to access. In other words, it questions whether PRMs are able to arrive at a consensus and act about their rights.

- Contemporary Urbanization, Mobility and Inaccessible Urban Space: The reflections of neo-liberal urbanization can be easily seen in built environment as a commodity in which the system reproduces itself. Those reflections are highly related with urban mobility since huge highways, junctions, overpasses and underpasses, lane additions to roads have been increasingly seen in cities to separate vehicular traffic and pedestrians giving almost all privileges to car dominance. Therefore, increasing car dependency gives more of the public spaces to cars, and narrow sidewalks to pedestrians. In this respect, one of the questions is asked as: 'Is car dependent transport infrastructure and mobility behavior an accessibility barrier for PRMs?'. In other words, it asks if car to be considered as accessibility barrier or not. Then, questioning continues over the same issue: 'If yes, is car dependency a spatial, administrative or both spatial and administrative accessibility barrier?', because there are implications about the fact that car is not only a matter of addition of lanes or constructing grade-separated junctions, but also a preference of administration to keep urban transport as an arena of neo-liberal urbanization.
- Whose Right to Mobility: There is a right to access and theoretically it belongs to all. However, in practice, some external determinants -such as socio-economic condition, physical ability to move or social and mental well-being- deliver this right to a specific group of people. Persons with reduced mobility are the ones devoid of the right to access. Therefore, it stated that mobility related social exclusion -societal barriers- is a significant barrier of accessibility.
- Critical Approach to the Right to the City: At the end of the discussion about relating urban mobility and the Right to the City, the concept is criticized,

which derived a significant causality as if the city is spatially, societally and administratively inaccessible, it is not possible to obtain the Right to the City. If a sort of right related to city is said to be for all, then it firstly needs to make sure that the city itself needs to be accessible as a prerequisite.

- Accessibility Concept: Accessibility is ensured in supranational documents and sustainable Development Goals of UN. And, its definitions revealed by scholars contains implications of the fact that, as one of the guiding principles of the thesis research, 'accessibility is a right for all'.
- Accessibility chain: Accessibility as a chain that is deeply discussed in spatial accessibility analysis in Ankara and in the outcomes of focus group discussions revealing the statement as accessibility is composed of interrelated links as a chain, therefore making only one single link accessible will not solve entire accessibility problematic.
- Inclusive Accessibility: To enable accessibility as a human right, first urban space needs to be inclusive with its walking environment and buildings, and then the society itself needs to be inclusive, too. Scholars clearly state that accessibility surely has a spatial, and also societal requirements to enable right to access. As the statement 'right to access has a spatial and societal dimension', which constitutes the basis of considering accessibility barriers from spatial and societal aspects since the beginning of the thesis.
- Supranational Documents Ensuring Accessibility as A Right: Inclusion of accessibility as a right in supranational documents verifies how accurate to select this matter as the topic of the research. It can be stated that 'right to access is a right ensured by supranational documents'.
- Why 'for All' As the Matter from People with Disabilities to Persons with Reduced Mobility: People with disabilities seem to be the most prominent beneficiaries of accessibility, however, any single individual with reduced mobility needs to be among the beneficiary actors. For example, a 2-year-old kid most probably have challenges in climbing a 30-cm sidewalk, or a parent with baby stroller mostly experiences the same accessibility problems with

physically impaired people. Therefore, a question is formed since its answers are given in theoretical review, case study research and focus group discussions: ‘Are people with disabilities the only group of beneficiaries for accessibility measures?’.

- Disability Theory and Universal Design: There are two prominent disability approaches in literature as medical and social models. To show the stance of the thesis research, the statement is formed as ‘contemporary social model of disability is the main assumption of the thesis research’.
- Spatially and societally sustainable right to access: Dependent mobility has remarkable social consequences that is verified in focus group discussions of the research. Once it is accepted that all persons with reduced mobility are equal members of society, then it needs to be ensured that the city must be so spatially and socially accessible that no single person faces barriers while going from one point to another without seeking help. Therefore, the statement is formed as ‘right to access is a right to be ensured by enabling independent mobility’.
- Independent Mobility for PRMs: Independent mobility is a part of right to access. In Turkey, to see an accompanying person, mostly a friend or a parent, beside the person with disability is not surprising on the streets or sidewalks in Turkey due to spatial barriers as the challenges of accessibility chain. Therefore, independent mobility concept is a significant complement mainly of focus group discussions. Therefore, a research sub-question emerges as ‘What does independent mobility bring about by means of right to access?’
- Analysis over Selected International Publications: After review of theoretical basis of the research, the acquisitions are complemented with two content analysis over selected international publications and selected publications on Turkey.
- Specific Analysis over Selected Publications on Turkey: Selected publications are examined through content analysis revealed statement about;

- uniqueness of thesis research,
- being the first attempt to create accessibility GIS database for accessibility research,
- focus group discussion as one of the least utilized methods,
- persons with reduced mobility (PRMs) as one of the least studied beneficiary groups in the literature,
- thesis research as the only one studying parents with baby stroller,
- thesis research as the only one approaching accessibility as a chain,
- the fact that there is a dominance of researcher perspective through desk research and case study research methods for the ones on Turkey,
- thesis research as a complementary to the gap for the ones on Turkey about the lack of right-based approach for accessibility topic.

As a complementary to the main outputs gathered from Chapter 2, Table 4.5 presents the second analysis as a summary for Chapter 3, which is about accessibility content in Turkey. It presents three columns within the same structure from a general key concept to a specific conclusive statement or question from the left to the right. Main key concepts are divided into two groups considering the heading system of the chapter, which are;

- Socio-demographic Approach

- Legislative Framework Analysis

Table 4.5. Summary of Chapter 3: Key Concepts, Content, and Main Outputs Inferred

Key concept(s)	**Content**	**Main Outputs from Chapter 3-Accessibility Context in Turkey: Conclusive Statements and Questions**
Socio-demographic Approach	Total population in Turkey considering age groups	Population in Turkey gets older between 2007 and 2020 and it will keep its trend (16.3% in 2040). The number of elderly populations has been increasing. Therefore, the population share of PRMs will increase in Turkey.

Table 4.5. (continued)

	Change in Population Pyramid in Turkey (2007-2020)	The number of elderly populations has been increasing. Therefore, the population share of PRMs will increase in Turkey.
	Population Projection by Age Group (2018-2080)	Turkey will not be a young country that requires new insights for urban planning and how urban forms need to be evolved (new discussions on compact city, 15-min city)
	Percentage of People with disabilities (2012-2019)	For ages 65-74, half of the population was disabled; For the ages 75+, almost three-quarter of the population was disabled by 2019. The number of people with disabilities has been increasing along with the aging population in Turkey.
	Distribution of types of disability groups	The number of people with physical impairments is the highest among people with disabilities.
	Percentage of opinions of registered people with disabilities about accessibility	People with disabilities find accessibility not appropriate for walking environment (66.9%), buildings and the entrances (66.3%), and green areas (43.3%)
Legislative Framework Analysis	Supranational compromises of Turkey about accessibility	There is a well-defined framework of rules of accessibility
	'TR Constitution' and 'Law on People with Disability Law No. 5378'	There is a well-defined framework of rules of accessibility
	'Accessibility Monitoring and Auditing Regulation' and 'Technical standards of accessibility in Turkey'	There is a well-defined framework of rules of accessibility. These two legislative items are used for case study research GIS analysis of the thesis.
	Legal content regarding non-discrimination and rights of PRMs in Turkey	Legislative framework in Turkey to prevent discrimination contains well-defined framework of rules that indicates non-discrimination as a right for persons with reduced mobility. Question: Are there any discriminative measures towards people with disabilities in Turkey by means of accessibility?

Considering summary analysis of Chapter 3 in Table 16, each content item is briefly explained to constitute what Chapter 3 puts forward.

- Total population in Turkey considering age groups: Socio-demographic part of this chapter is designed with graphs and tables to justify why the topic of the thesis is significant. The first graph is about total population change in Turkey. The point to focus the attention is a continuous increase in the number of elderly people in Turkey, which will be projected as 16.3% for

2040. The group of elderly people is among PRMs that makes the accessibility concern of this research notable.

- Change in population pyramid in Turkey (2007-2020): A similar fact is supported with mentioning the change in population pyramid from 2007 to 2020 in Turkey. It clearly reveals a shape approaching to a more cylindrical type meaning that elderly population has been increasing.
- Population Projection by Age Group (2018-2080): As a consequence of insights about new future age distribution of the population in Turkey, urban planning and design approaches are seem to be required to update. Considering Ankara, the city has a car dependent urban mobility pattern and the distances are quite long between urban services; between residential areas and city center, working areas, green areas. In other words, the city has deeply been experiencing urban sprawl. Long distances require an increase in daily commuting, which makes accessible and walkable mixed-use urban patterns far beyond imagination. On the other hand, as more sustainable and walkable solutions, an idea of '15-min city' was firstly initiated in Paris in 2015 and has become a noteworthy discourse for urban form and planning discussions. Another example is the 'Superblock' initiative in Eixmaple District in Barcelona. As a result of environmental and health problems as an emerging urban mobility crisis, this idea aims to decrease the occupancy of cars on streets, increase the percentage of green areas and green streets and eliminate air pollution in the city through a new public transport and accessibility re-designing on grid system.
- Percentage of people with disabilities (2012-2019): It is obvious for Turkey that the number of people with disabilities has been increasing with an aging population. This necessarily requires new solutions for accessibility.
- Distribution of types of disability groups: In the context of the research, which types of disabilities have the dominance in Turkey give an insight for the research group selection of focus group discussion. It was assumed that the ones having the highest proportion in Turkey could be reasonable to have

the dominance in focus group discussions, too. In this respect, physically impaired people are the dominant group (74% of all participants) in focus group discussions.

- Percentage of opinions of registered people with disabilities about accessibility: According to the survey, the most inaccessible components of built environment are walking environment, buildings (kept out of sample research items of spatial accessibility GIS analysis), and green areas. In accordance with this, the determined list of research items focuses on walking environment and green areas for spatial accessibility GIS analysis that are pedestrian sidewalk, ramps, crossings, public transport stops/stations, and open/green areas.
- Supranational compromises of Turkey about accessibility: Addressing accessibility and disability issues in supranational documents refers to how reasonable to make research in this sense. The well-defined supranational set of rules sheds light to legislative framework in Turkey.
- TR Constitution and Law on People with Disability Law No. 5378: The constitution is the main binding document above all the norms that includes articles as basis of accessibility research. In accordance with the constitution, the main law ensuring rights of people with disabilities is Law on People with Disabilities having clear statements about accessibility of urban space and public transport systems.
- 'Accessibility Monitoring and Auditing Regulation' and 'Technical standards of accessibility in Turkey': These two items state the detailed rules and standards with measurements are used for case study research GIS analysis of the thesis.
- Legal content regarding non-discrimination and rights of PRMs in Turkey: There is a well-defined set of rules ensuring non-discrimination in Turkey for all. On the other hand, theoretical review indicates that discriminative approach is one of the maters of accessibility. As a consequence, this content item of the table generates a research sub-question: 'Are there any

discriminative measures towards people with disabilities in Turkey by means of accessibility?'

In the last 'main outputs' columns of the above tables make meaningful and well-justified contributions to hypothesis, guiding principles-assumptions and research questions through conclusive statements and questions emerged.

4.3 Research Questions and Hypothesis

Specific initial triggering forces composed the initial research enthusiasm of my research that led me to work on accessibility concept. My initial sources of inspiration as a researcher are composed of;

- personal spatial and societal observations,

- my concerns about the lack of sustainable urban mobility with spatial, social and administrative aspects in Turkey fed by my previous researches,

- random chats with people with disabilities and parents with baby stroller,

- the fact that I have become one of the persons with reduced mobility once I go out with my son with his baby stroller.

While walking on a sidewalk of a street in Ankara -and most probably in the most of other cities in Turkey-, there is no need to be an expert to notice barriers as sudden level differences, narrow sidewalk, street furniture elements interrupting the continuity of trips. The most significant one of above-mentioned sources of my inspiration is that I had a newborn baby at the time I was about to determine thesis research topic in 2017. Therefore, I have experienced many of the urban spatial barriers of a person with physical impairment in my hometown Ankara, and in Antalya (Manavgat), İzmir (Çeşme), Şanlıurfa, Eskişehir, Konya and İstanbul with the baby stroller. However, all the experiences, observations and chats were surely not scientific evidences of the problem. Later on, personal knowledge and

preliminary researches of this thesis revealed that accessibility of persons with reduced mobility is remarkably worth to study.

In addition, research outputs mentioned in Chapter 2 (theoretical framework) and Chapter 3 (accessibility context in Turkey) had significant guidance to determine aims, research questions, and hypothesis alongside of initial inspirations of mine as the researcher.

- **Main Research Question**

- How do legal, spatial, societal, and administrative aspects of accessibility, as interdependent processes, create barriers that prevent PRMs from exercising their right to access in Turkey?

- **Research Sub-questions**

In terms of right to access

- What is the relationship between the concepts of accessibility and the right to the city?

- What is the meaning of right to participation by means of accessibility of PRMs?

- The Right to the City is a collective right for Harvey (2008); what does this mean for accessibility of PRMs?

- What does independent mobility bring about by means of right to access?

In terms of legal aspect of accessibility

- Is the legal framework one of the underlying reasoning behind inaccessibility of cities in Turkey?

In terms of spatial aspect of accessibility

- Are there spatial accessibility barriers in Turkey? If yes, what is spatial accessibility level?
- Do the spatial accessibility barriers prevent PRMs to ensure their right to access?

- Is car dependency an accessibility barrier for PRMs to ensure their right to access?

- Can accessibility be related with urban land-use structure, socio-economic status, and service of urban rail systems?

- What are the spatial accessibility barriers experienced by parents with baby stroller?

In terms of societal aspect of accessibility

- Are there any discriminative measures towards people with disabilities in Turkey by means of accessibility?

- Are people with disabilities the only group of beneficiaries for accessibility measures?

In terms of administrative aspect of accessibility

- If car dependency is an accessibility barrier for PRMs, is it a spatial, or administrative or both spatial and administrative accessibility barrier?

- What would be the way for a city to become accessible within the current system of neo-liberal urbanization? (from administrative aspect)

- **Hypothesis and Guiding Principles-Assumptions**

-**Main hypothesis:** Right to access is a right for all and the way to have accessible cities is possible as long as a comprehensive accessibility framework is ensured, including four interdependent aspects: legal, spatial, societal, and administrative.

-**Guiding Principles and Assumptions:**

- Accessibility is a right for all.

- In Turkey, there are accessibility barriers about spatial, societal, and administrative aspects interdependent to each other. Eliminating only spatial, or only societal, or only administrative barriers will not be able to solve accessibility problematic.

- Independent mobility is a prerequisite for sustainable right to access.

- Persons with reduced mobility are the primary beneficiaries who can define barriers of right to access in the most accurate manner.

- Car dependency creates spatially inaccessible urban spaces and social exclusion between PRMs and able-bodied people.

- Mobility related social exclusion is a significant barrier of accessibility

- Accessibility is composed of interrelated links as a chain, therefore making only one single link accessible will not solve entire accessibility problematic.

- Creating spatial accessibility GIS database needs to be one of the primary objectives of policy-makers.

- Focus group discussions are one the most effective way to acquire user perspective.

- Accessibility analysis over parents with baby stroller is a reasonable start for the change the perception from people with disabilities to PRMs.

- Combination of user perspective with researcher perspective gives the closest understanding of barriers against right to access to the reality.

- Along with aging population in Turkey, unless necessary planning, societal and administrative precautions are taken, accessibility of cities will get worse.

Main research question of the thesis represents the main research concern that is ultimately aimed to answer at the end of the research. Sub-questions are the other questions that will be answered or investigated during the research. In relation with questions, hypothesis and guiding principles-assumptions are formulated as suggestions or proposals that the research intends to prove or disprove. Finally, main aims of the research constitute the stones of the path towards investigating the hypothesis. It is worth to note that main heading classification of sub-questions constitute the sub-headings of conclusion chapter that implies investigation results and discussions of all research questions this research will be presented in the last conclusion chapter.

4.4 Philosophical Approaches of Research Methods

Three main research methods are used to acquire data in the thesis: desk research, case study research, and focus group discussions. Desk research in this thesis, which basically is searching existing documents (i.e., articles and legal documents) to understand what the current circumstance is, stands as a part of positivist approach. However, in the analysis of philosophical approaches to research methods, the main objective is to present what positivism (case study method) and interpretivism (focus group discussions method) means for the other two research methods of the thesis. The combination of positivist and interpretivist approaches within one research is expected to generate the closest and most accurate data about the reality through the use of quantitative and qualitative research methods in the thesis.

Positivism ensures that there is a complete and accurate knowledge of the world as the reality. Collins (2010) describes the basics of positivist approach as:

> As a philosophy, positivism is in accordance with the empiricist view that knowledge stems from human experience. It has an atomistic, ontological view of the world as comprising discrete, observable elements and events that interact in an observable, determined and regular manner.

Positivism implies to something that has been given, not to a re-constructed knowledge. The positivist viewpoint is grounded on firsthand experience rather than speculation. In positivism, the knowledge is firmly and entirely based on something that has already been determined as the reality, and it is not arrived at speculatively (Crotty, 1998). The approach mainly indicates that there is a researcher who makes an investigation on the research questions objectively and does not aim to affect the real problem under investigation. In addition, the positivist philosophical approach requires a well-structured methodology, quantifiable observations, and statistical analysis (Remenyi, Williams, Money, & Swartz, 2005). As a quantitative research method, case study research for the analysis of spatial accessibility barriers depends on positivist philosophical approach. The reason why it is called as ‘researcher perspective’ is that the researcher is only the external implementer pursuing an already existing reality by positioning barriers on GIS platform to generate statistical

facts and mapping. All these outcomes are free from any interpretations as already existing reality by means of accessibility.

Interpretivism (or phenomenology) is another philosophical approach adopted in thesis research to complement the data obtained from case study research. The interpretivism philosophy entails researchers interpreting study elements by incorporating human factor into the research. Interpretive researchers believe that only social constructions such as language, consciousness, common meanings, and instruments provide access to given or socially constructed reality. The philosophy of interpretivism arose from a critique of positivism in the social sciences, which emphasized qualitative rather than quantitative method (Dudovskiy, 2021; Myers, 2009). Collins (2010) also describes interpretivism by highlighting its differences from positivism. Interpretivism is a term that is associated with the philosophical position of idealism, and it is used to combine together here various approaches such as social constructivism, phenomenology, and hermeneutics. The researcher rejects the objectivist view that meaning exists in the world independent of consciousness. For positivists, the world is objectively real, even though we can only learn about it through experience. Positivists strive to separate subjective perception from objective observations; however, social constructionists believe that this is impossible since things do not have meaning until they are interpreted by the meaning-making subject. As a qualitative research method, focus group discussions method for the analysis of user perspective on accessibility barriers on interpretivist philosophical approach. The meaning is produced through the opinions of the participants of focus group discussions.

In the thesis research, both positivism and interpretivism philosophies are combined to generate spatial, societal, and administrative barriers to ensure right to access for PRMs. Lin (2005) clearly puts forth the advantages of combining these two approaches.

> The combination of positivist and interpretivist approaches in policy studies thus provides both the causal "what" and the causal "how"-something neither

approach can provide alone. It allows the policy researcher not only to add qualitative data to a problem, but to train different kinds of questions on it.

In this research, a quantitative research method is used from a positivist approach (case study research) and a qualitative research method from an interpretivist approach (focus group discussions). The use of both approaches through the use of two different quantitative and qualitative methods provide opportunities to obtain detailed data for the sake of the effort to understand barriers as comprehensively as possible.

4.5 Research Methods

As a consequence of in-depth analysis of theoretical review and accessibility context in Turkey, four main aspects of right to access are:

- Legal Aspect,

- Spatial Aspect,

- Societal Aspect, and

- Administrative Aspect.

To examine these aspects, three different research methods are utilized which are desk research, case study research, and focus group discussions. Desk research is used for the analysis of legal aspect, case study research is for spatial aspect, and focus group discussions are for spatial, societal and administrative aspects (Figure 4.9).

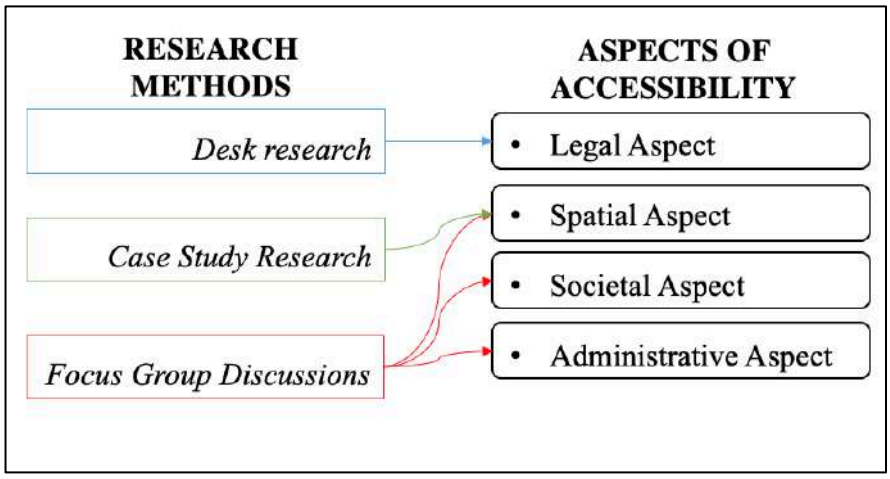


Figure 4.9. Which Research Method Is Utilized for Which Aspect of Right to Access

In this section, how these research methods are used, by processing what kind of data, and under which processes are mentioned for each method.

4.5.1 Desk Research

Desk research is the process of gathering information from existing sources. This method has surely been utilized for also the chapters of theoretical review and accessibility context in Turkey through online articles, statistical data, reports and books. In Chapter 3, there is a section called 'Legislative Framework of Accessibility in Turkey', which constitutes a remarkably core part of analysis of barriers of the right to the city. Therefore, as along with the desk research, a comprehensive legislative framework review was carried out. One of the aims of the thesis is 'to investigate the legal framework of accessibility, disability and discrimination in Turkey.' In accordance with this aim, it is concluded from desk research that Turkey has a well-framed and comprehensive legislative structure ensuring rights of people with disabilities, measures for accessibility and discrimination, and accessibility standards.

4.5.1.1 Material Selection

Main materials used within this part of the research are the documents that bring about binding rules in Turkey about disability, accessibility and discrimination. The legal materials studied are;

- Supranational compromises on accessibility (i.e., Convention on the Rights of Persons with Disabilities, EU Passenger Rights Regulations)

- National legislative documents in Turkey (i.e., TR Constitution, Law on People with Disability, Accessibility Monitoring and Auditing Regulation -with its annexes)

- Legal documents including measures for non-discrimination (i.e., TR Constitution, Law on Human Rights and Equality Institution of Turkey)

- Other legal Documents including statement(s) for Accessibility or people with disabilities (i.e., Law No. 3194 development Law, Planned Areas Type Development Regulation)

- Technical standards related to accessibility in Turkey (TS 9111- The requirements of accessibility in buildings for people with disabilities and mobility constraints, TS 12576- Urban roads - Structural preventive and sign design criteria on accessibility in sidewalks and pedestrian crossings).

Legislative framework analysis was carried out under those five topics sequentially.

4.5.1.2 Research Design

A deductive desk research design flow was followed for the analysis of legislative framework. Websites were searched online to reach the related document and outputs from official governmental or intergovernmental websites were utilized. The strategy for the analysis of each topic was reading necessary parts of the most related ones, skimming less related ones, and determining prominent points. For example,

EU accessibility rights were analyzed and prior conclusive key points were mentioned as;

- Non-discrimination to be ensured,

- Right to get assistance,

- Encouraging measures (free ticketing including accompanying persons)

- Enabling effective information systems,

- Easily accessible transport systems.

Deduction was made from supranational compromises as the broadest topic to the technical standards as the most specific one. One of the most comprehensive as well as significant- document for the research is 'Accessibility Monitoring and Auditing Regulation'. It is the regulation in Turkey bringing about all standards and rules of accessibility for buildings, sidewalks, pedestrian crossings, stops, car parking, public telephone kiosks, public toilets, urban parks, vehicles, trains, and ships. In addition, TS 12576 and TS 9111 standards determine detailed rules of accessibility related with urban space. For the case study research, as mentioned spatial case study analysis in Chapter 5, main criteria and sub-indicators are determined by using these three components of legislative framework.

4.5.2 Case Study Research

Case study research is one of the mostly used research method in accessibility researches with different versions. According to Yin (2009) case study research is defined as: "A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". According to Farquhar (2012) case studies are empirical analysis in the sense that they are based on knowledge and experience, or, in more practical terms, on data gathering and analysis. The case study researcher is able to explore in depth at a topic of interest

or phenomena by restricting the study's scope to a limited number of units. To mention under which conditions to prefer case study method is described by Yin (2009) as:

- in the researches that includes when, how or why questions,

- when the researcher, having an outer outlook on the research, has little control over events,

- if the emphasis is on a contemporary phenomenon.

Case study research is a positivist comprehension of obtaining the knowledge of the real world, called for this research as the ‘researcher perspective’. Within the context of the thesis research, researcher perspective indicates that the research is carried out by an external outlook to demonstrate the current facts of spatial accessibility barriers over a set of rationally selected case study areas. The logic of this positivist approach to the research was designed as;

- cases were determined with respect to certain criteria,

- the indicators and sub-parameters of the research were strictly framed through depending on legally enacted accessibility rules,

- accessibility rules were processed into selected case areas,

- outputs were mapped and demonstrated through graphs, tables and photographs,

- an ultimate scoring table were created to demonstrate numerical level representation of each indicator (sidewalks, ramps etc.) and each case research area.

Data collection and its analysis depend on asking correct questions to urban space to obtain relevant accessibility data. The basis of research methodology is about asking questions to urban space through field visit by using ArcGIS Survey123 tool. In this sense, firstly, the question of why to choose Bahçelievler, Beştepe, Söğütözü Neighborhoods and one segment of Atatürk Boulevard in Ankara as case study areas are examined. Then, the functioning of field research data collection tool, ArcGIS

Survey123, is summarized with a special emphasis on concluding how to generate spatial accessibility indicators.

4.5.2.1 Rationale of Case Area Selection

The field researches were conducted in Ankara. Ankara is the second most populated city in Turkey. It consists of 25 districts and 1425 neighborhoods in total on 25.632 km^2 area. The total population of Ankara region for the whole provincial boundaries is 5.503.985 as of the end of 2018. Ankara is a city developed especially after Republican Era in terms of population and spatial growth. Remarkably, after 1950s, the population of Ankara exceeded 1 million, and has continued to increase gradually.

Besides being a crowded city, population pyramid of Ankara shows that the intensification on the age group above 65 has been increasing that is similar to the trend of the population pyramid of Turkey. In Europe as well as in Turkey, one of the most prominent facts is that the elderly population percentage has been increasing over years. Similarly, population of Ankara has been following the same trend as seen in population pyramid towards becoming cylindrical (Figure 4.10).

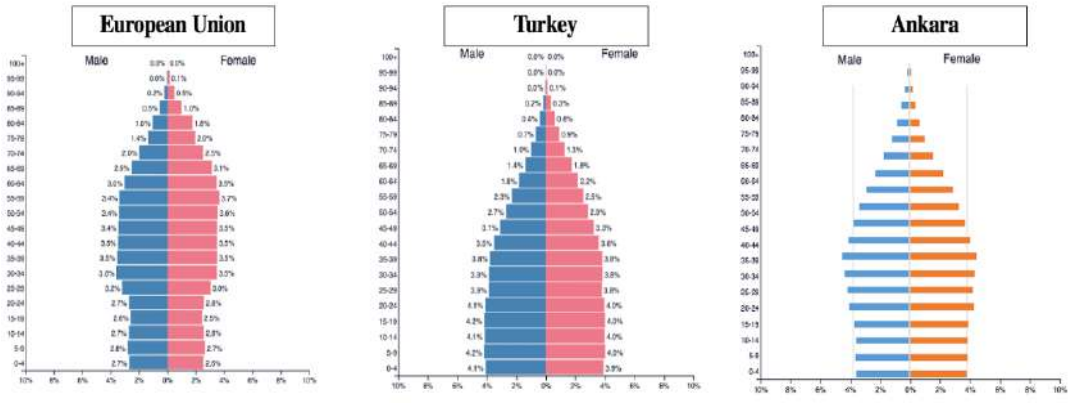


Figure 4.10. Population Pyramid Comparison between EU-2019, Turkey-2019- and Ankara-2020 (PopulationPyramid.net, 2019; TurkStat, 2020)

In Ankara, 7% of the total population is above 65, and considering the districts, Çankaya, Keçiören and Yenimahalle are the three most populated ones in Ankara. 12% of Çankaya population, 8% of Keçiören Population and 7% of Yenimahalle population are above 65 that represents the percentage of vulnerable group of people in terms of age, which presents the significance of accessibility policies in those districts (Table 4.6).

Table 4.6. Population Characteristics by Districts of Ankara (AMM, 2020)

Name of the District	Population	Dependent Population (0-14)- [%]	Active Population (15-65) –[%]	Population above 65 – [%]
ÇANKAYA	921.999	14,8	72,8	12,4
KEÇİÖREN	917.759	22,1	69,5	8,4
YENİMAHALLE	659.603	20,8	71,4	7,9
MAMAK	637.935	22,9	71,7	5,4
ETİMESGUT	566.500	23,1	72,3	4,6
SİNCAN	523.409	24,7	69,0	6,3
ALTINDAĞ	371.366	23,0	69,5	7,5
PURSAKLAR	142.317	26,9	68,9	4,2
GÖLBAŞI	130.363	22,4	74,0	3,6
TOTAL ANKARA	**5.445.026**	**1.166.417**	**3.883.744**	**394.865 (7% of the total population)**

Considering the districts of Ankara, it is worth to reveal the population and percentage of elderly, young and women, who constitute a remarkable part of PRMs. among the population of Ankara, the total number of women, young people and elderly as underrepresented groups is 3.773.611, corresponding to 69% of total population of the city. This reveals the significance of considering PRMs by means of accessibility policies. In this sense, Figure 4.11 presents total population and total number of underrepresented groups with a percentage by central districts in Ankara.

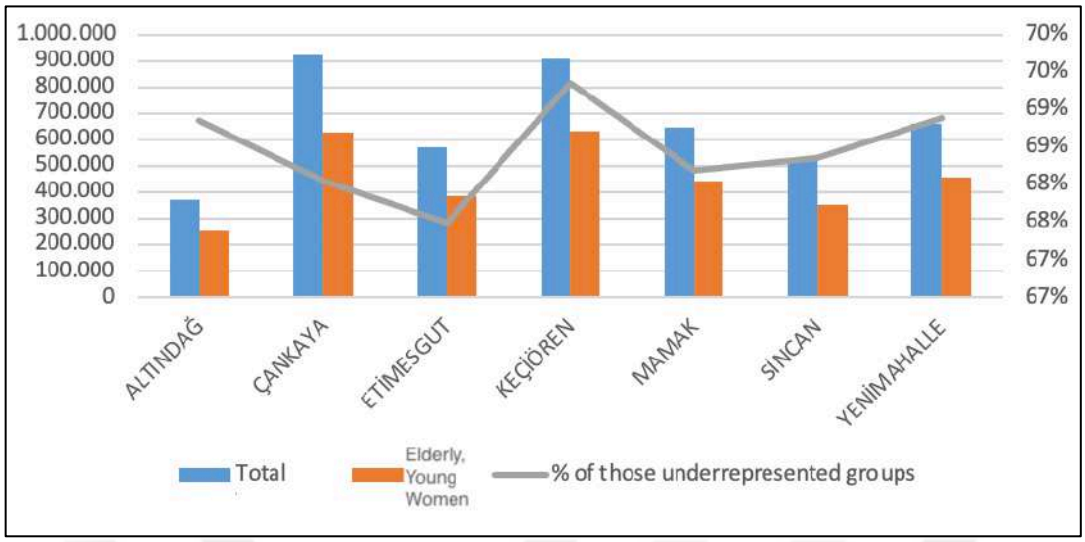


Figure 4.11. Total Population and Total Number of Underrepresented Groups with Percentage (AMM, 2020)

For the field research, road gradient is another important criterion to process accessibility indicators on urban space. To provide an accessible trip for especially people with manual wheelchair, Figure 23 shows that Söğütözü, Beştepe and Bahçelievler-Yukarı Bahçeliekler-Emek Neighborhoods and Kızılay are a set of the finest ones in terms of gradient. Since road gradient should not be a challenge to carry out case study research to investigate accessibility barriers, as seen in Figure 4.12, the red labelled area does not have any gradient exceeding the practical standards of gradients below and equal to 4% for people with disabilities.

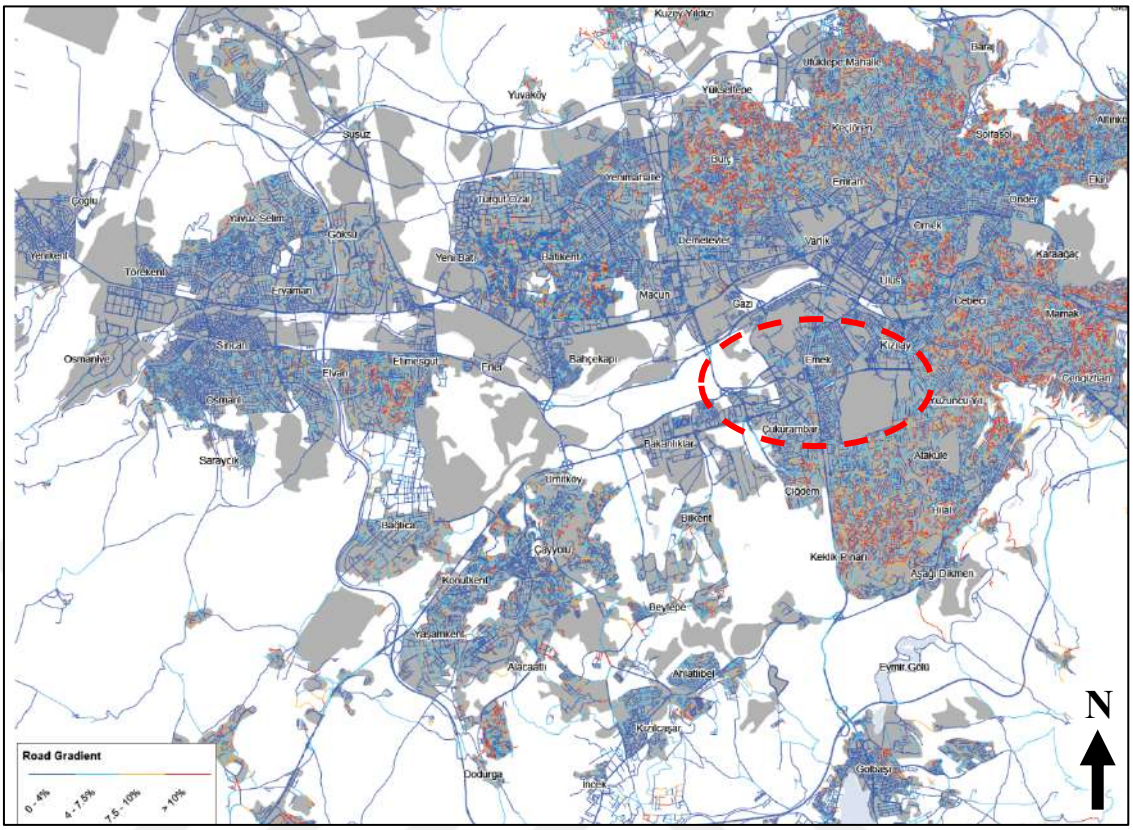


Figure 4.12. Road Gradients in Ankara (AMM, 2020)

Another case study selection criterion is the connection of selected areas with urban rail systems. Figure 4.13 demonstrates M1-2-3 Metro lines as well as Ankaray LRT line and the connection of their stations with the research areas. It is easily seen that those areas served by main rail public transport network of Ankara, which gives an opportunity to make an effective investigation including accessibility of public transport stations and their connection with pedestrian sidewalk.

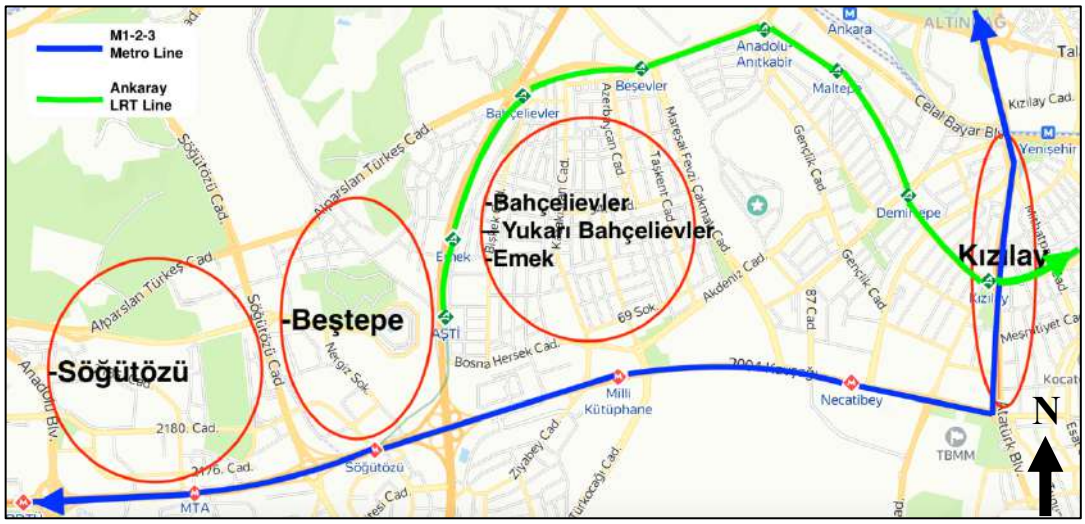


Figure 4.13. Urban Rail Stations and Case Study Areas (Produced by the Author- by using basemap from https://yandex.com/maps/)

The selected areas for the spatial accessibility research are three neighborhoods -Bahçelievler, Beştepe, Söğütözü- and one specific part of central spine of the city -a segment from Atatürk Boulevard-. The initial idea at the beginning of the research was to select adjacent neighborhoods in Ankara that are connected with each other with rail system networks as well as road connections. Söğütözü, Beştepe and Bahçelievler-Yukarı Bahçeliekler-Emek are the five neighborhoods to be intended at the beginning of the research. Later on, it was realized that Bahçelievler, Yukarı Bahçeliekler and Emek Neighborhoods shows similar characteristics in terms of sidewalk characteristics, land use structure and socio-economic status group. Therefore, among those three, Bahçelievler was selected as one of the case study areas that also hosts the primary Bahçelievler settlement -an important part of Ankara's settlement history- designed by Hermann Jansen between 1935-1938. At that point, Söğütözü, Beştepe and Bahçelievler were decided as case study areas (Figure 4.14).

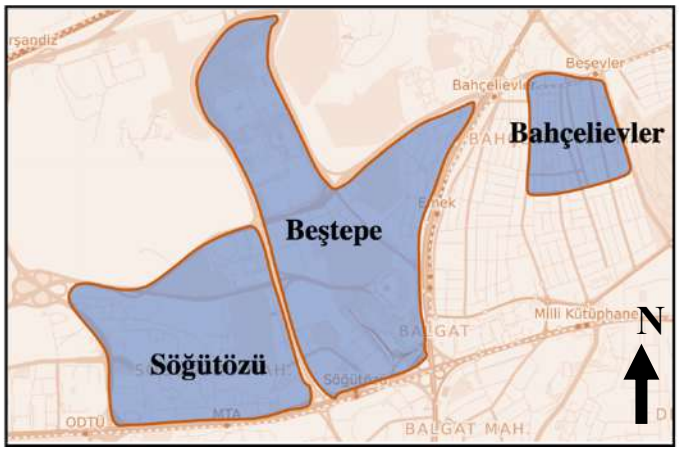


Figure 4.14. Administrative Boundaries of Three Case Study Neighborhoods (Produced by the Author by using base map from https://www.openstreetmap.org/)

To elaborate the content of the research, a specific part of city center- a part of Atatürk Boulevard- was added as the fourth study area since it completely consists of non-residential uses and it is one of the most crowded destinations in the city (Figure 4.15). The segment on Atatürk Boulevard starts at Sıhhiye in the north, and ends with Güvenpark in the south. This part can be considered as the core city center of Ankara.

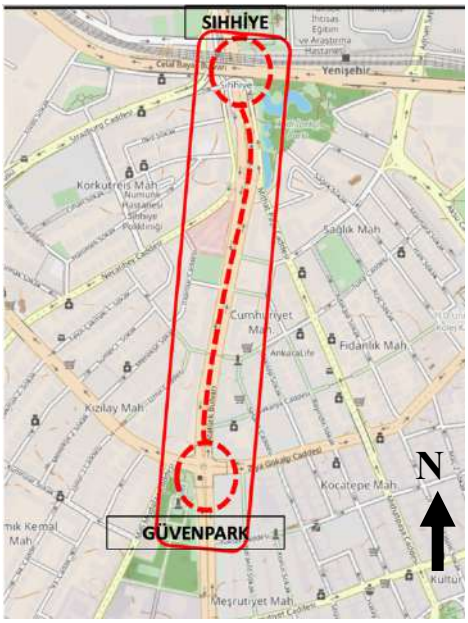


Figure 4.15. The Segment Analyzed on Atatürk Boulevard/Kızılay in Ankara (Produced by the Author by using base map from https://www.openstreetmap.org/)

To provide a general picture of the selected areas, Table 4.7 shows the population and areal characteristics of the three neighborhoods. One of the remarkable points is that female population in three neighborhoods is more than male population (7% more in Bahçelievler, 2% more in Beştepe and 4% more in Söğütözü). Keeping in mind that women having reduced mobility are one of the members of PRMs, the selection of these three neighborhoods makes sense. Besides, in terms accessibility, population between the ages 0-4 means a potential use of baby stroller by the parents of this group that makes them one of the main beneficiaries of accessibility policies. Similarly, the population for the ages above 65 means one of the most vulnerable groups in terms of accessibility. The percentages of the population above 65 is sequentially %9, %11.8 and %10.7 in Bahçelievler, Beştepe and Söğütözü Neighborhoods. Approximate hectare areas of data collection points are similar to each other despite the variety in administrative boundaries. Lastly, the differentiation in socio-economic status was another factor to determine case study areas. In this respect, Bahçelievler is at the top followed by Söğütözü and Beştepe comes at the third ranking.

Table 4.7. Population, Areal and Socio-economic Status Characteristics of the Areas (AMM, 2020)

	Bahçelievler Neighborhood	**Beştepe Neighborhood**	**Söğütözü Neighborhood**	**Atatürk Boulevard (Between Sıhhiye Metro Station and Güvenpark)**
Total Population	2636	12059	8695	No residential population
Total Male Population	1225	5851	4167	
Total Female Population	1411	6208	4528	
Population between ages 0-4	161 (%6 of total neighborhood population)	633 (%5 of total neighborhood population)	433 (%4 of total neighborhood population)	
Population above 65	241 (%9 of total	1427 (%11.8 of total	932 (%10.7 of total	

Table 4.7. (continued)

	neighborhood population)	neighborhood population)	neighborhood population)	
Area Framed by Administrative Boundaries (ha)	58 ha	270 ha	190 ha	--
Approximate Area of Collected Data Points (ha)	62.1 ha	86.1 ha	71.5 ha	7 ha
Socio-economic Status Group	A	C1	B	--

As a concluding remark, Bahçelievler, Beştepe, Söğütözü Neighborhoods and a part of Atatürk Boulevard from Kızılay are selected as case study data collection areas. Under the light of the criteria demonstrated so far, justification factors of the selection are listed as follows;

- A variety in urban land use in determining the areas: in this respect, the land use structure of the areas is;
    - residential and commercial use (an important leisure time destination for the entire city) for Bahçelievler,
    - old and new prestigious residential uses, public institutions, business centers and shopping malls and main coach terminal of Ankara (AŞTİ) for Beştepe,
    - residential uses, public institutions, health facility and congress center for Söğütözü,
    - a specific part from city center of Ankara with only commercial use for Atatürk Boulevard.
- Areas composed of residents from different socio-economic status,
- Areas served by urban rail systems and connected to each other on a continuous line network,

- Areas that should have roads not exceeding the gradient standards; in other words, any part of the roads in the case study areas needs to enable making accessibility analysis as much as possible.
- Picking areas from Çankaya, Keçiören and Yenimahalle districts make sense in terms of the number and percentage of underrepresented groups, elderly and dependent population. Selecting area from Keçiören district is eliminated due to high gradient. Therefore, Çankaya and Yenimahalle seem to be the most probable districts to select research areas.

Under the light of above-mentioned factors, the questions to be investigated in consequence of field research are emerged as that;

- Does urban space consist of accessibility barriers?
- Do the barriers against accessibility prevents PRMs to obtain their right to access?
- Is the car-dependent city a factor creating barrier against right to access of PRMs?
- Is there any relationship between accessibility level and land-use structure?
- Is there any relationship between accessibility level and socio-economic status for different areas?
- Does the same urban rail system offer different accessibility levels in different neighborhoods?

Before presenting the analysis and results of fieldwork, a brief summary is mentioned about how the research was conducted including the use of ArcGIS Online Suvey123 software tool.

4.5.2.2 Data Collection

Prior to conducting the research, initial step was determining the indicators of accessibility in Turkey. To achieve this, main sources of the rules of accessibility are TS 9111 (The Requirements of Accessibility in Buildings for People with

Disabilities and Mobility Constraints) and TS 12576 (Urban Roads - Structural Preventive and Sign Design Criteria on Accessibility In Sidewalks And Pedestrian Crossings) standards and Accessibility Monitoring and Auditing Regulation-Annexed forms (Annex-a: sidewalks, Annex-b: pedestrian crossings-stops). According to the analysis of these rules of accessibility, the indicators and sub-criteria are formed as question-like phrases and inserted into ArcGIS Survey123 tool. In other words, a question set is prepared to enter data into the software through ArcGIS online mobile application interface. The primary aim is entering accessibility data into Survey123 while walking on the roads and streets. In brief, the research method is to be stated step-by-step as follows.

- The aim of using a GIS oriented data collection as the research tool is to create a database for the barriers against accessibility
- Accessibility indicators are inferred from the related standards and legislative item. Among them, one of the indicators - “disabled car parking”- is not included within the scope of the analysis since enabling accessibility chain has nothing to do with private car ownership and encouraging car use for walking and public transport distance trips. These indicators are;
    - Pedestrian sidewalk
    - Ramp
    - Pedestrian crossing
    - Public transport
    - Open and green areas
    - Disabled car parking (omitted indicator)
- A question set was prepared with Survey123 ArcGIS software tool taking the indicators gathered as top headings of the questions. These questions are for entering related data into the application. For instance, once a sidewalk ramp is met, the characteristics of this ramp is entered into Survey123 mobile application such as the slope, surface and width. Or a tree might be blocking the passing on a narrow sidewalk, once this tree is met the location of it is entered into the application including its width.

- Trial walks were done on some segments of streets in İstanbul and Ankara.
- The data were gathered by walking all possible roads and streets since some of them are not appropriate for pedestrian movements.
- Once the raw data set was created, the analyses are to be done by associating the results with other related determinants

At first glance, since the research method is a GIS based data collection, a barrier-based accessibility threshold analysis might be expected as an output of this research. However, as a primary assumption, keeping sustainably working accessibility chain is one of the very first bases of this research, a threshold analysis at the end of data collection by assigning specific ranking for the indicators is not possible. In other words, it cannot be said that one single or a set of barriers are more significant than the other ones in accessibility analysis. Accessibility is a chain and one missing single ring can cause the disruption of entire journey. Therefore, this is a part of the research conducted by an outer view of accessibility problems as researcher's perspective towards defining barriers of accessibility.

For the analysis of accessibility barrier points gathered into ArcGIS Online tool from the areas in Ankara, intensification mapping demonstration is used as output images. Intensification maps show the positioning of barriers where they become closer. In terms of the algorithm used to generate those mapping outputs, density values are calculated using the technique included in ArcGIS Pro's Kernel Density tool. If the input features are points, the geodesic technique is used to calculate the distances. If the input features are lines, the planar approach is used to calculate the distances. The Kernel Density tool generates a raster output, whereas the analysis tools in ArcGIS Online generate vector output (ArcGIS Online, 2022).

As an ultimate consequence, a scoring table with accessibility levels is produced that shows what to be inferred for urban accessibility by means of case areas and of indicators. The table's first two columns list five accessibility indicators and their associated sub-parameters. The numbers and colors in the table show scores for each accessibility criteria (such as sidewalk width or ramp slope) based on case area (such

as Bahçelievler or Atatürk Boulevard). Scoring was done on four distinct levels of accessibility, which are described below:

- Strong → gets 4 points; represented with dark green,

- Room for improvement → gets 3 points; represented with light green,

- Weak → gets 2 points; represented with yellow and,

- Extremely weak-urgently requires intervention → gets 1 point; represented red color.

In addition to accessibility level scores of each parameter related with each case study area, last two rows and last two columns represent overall and average accessibility scores.

4.5.3 Focus Group Discussions

Focus group discussions are a sort of group interview in which participants are asked to discuss certain themes in a somewhat casual setting in order to reveal underlying issues and concerns about norms, beliefs and values (Bloor, Frankland, Thomas, & Robson, 2001). This qualitative research method aims to gain a deeper understanding of social issues. Rather than a statistically representative sample of a larger population, the approach tries to acquire data from a purposefully selected group of individuals (Nyumba, Wilson, Derrick, & Mukherjee , 2018).

Interviews, particularly semi-structured face-to-face and group interviews, are easily confused with focus group discussions. The role of the researcher and the relationship with the participants indicates that the two methodologies are fundamentally different (Smithson, 2000). Interviews are face-to-face, qualitative, in-depth conversations in which the researcher plays the role of an investigator. This suggests that the researcher asks questions, manages the dynamics of the debate, or interacts with a single person. For focus group method, however, researcher takes on the position of a facilitator or a moderator of the discussion taking a supporting

position rather than playing a central role (Bloor, Frankland, Thomas, & Robson, 2001).

For basic research topics, some scholars propose a minimum of three to four focus group discussions to obtain the required data. For researches encompassing broader study areas, wider interest groups, and complicated issues, the principle of theoretical saturation has been implemented. Arriving a theoretical saturation means that focus group discussion sessions are conducted until a clear pattern emerges and further groups generate no new information (Burrows & Kendall, 1997; Krueger, 1997). A kind of dynamism is developed in focus groups, enabling underlying perspectives, meanings, emotions, behaviors, and beliefs to emerge along with the descriptions of subjective experiences. As a result, examining not just the outcomes gathered from participants of the discussion but also the interaction between participants is a crucial part of data analysis (Kitzinger, 1995).

Focus group discussions provide for a more in-depth investigation of complicated subjects than other types of qualitative surveys since listening what the participants mention provokes replies or counter-thoughts that participants had not considered previously. It is possible that the findings cannot be generalized to other contexts. Because of the limited sample size, focus groups are mainly utilized for exploratory research rather than descriptive or explanatory research (Bhattacherjee, 2012).

Quotations have been used in focus group discussions to demonstrate the relationships in between participants. Longer passages from transcripts of the opinions gathered in the meetings could be appropriate to quote or they could be shortened to highlight a specific relation or condition (Flick, 2018). To examine the outputs of focus group discussions on accessibility, quotations are used to express participants' opinions and relations. In this respect, Parker and Tritter (2006) put fort the significance of giving specific quotations in the analysis process of focus group discussions.

> …(There) is the need to contextualize quotations in order to understand them in the group context. It is important to place a quotation within the temporal

context of the group as participant's positions shift. A quote from an individual may be typical of their initial view but radically different from the one they hold when they leave the focus group.

In the analysis of user perspective, 12 focus group discussions were carried out between 04.03.2021-05.05.2021 in Ankara with different members of PRMs. Survey questions were discussed within groups and useful outputs were generated contributing the formation process for accessibility problem definition. In this section, case study area and research group selection are summarized along with the explanation of focus group discussions.

4.5.3.1 Rationale of Sample Group and Case Area Selection

The very first criterion for participants of focus group discussions was being in the category of persons with reduced mobility. 36 people was registered as the candidates of focus group participants, and discussions were carried out with 32 participants in 12 focus group discussions in total. The reason to stop the number of focus group discussions at 12 is that the scope of the discussions to obtain the required answers satisfactorily regarding accessibility and right to access reached its saturation level. Details of the participants is given below including which focus group discussions include which kinds of people with disabilities (Table 4.8).

Table 4.8. Number of Participants to Focus Group Discussions with disability types

	The number of participants of focus group discussions	**Which focus group discussion (FGD) includes which disability types**
The ones responded positive to register discussions	36	--
The total number of participants attended	32	--
Physically impaired	21	FGD-1, FGD-2, FGD-3, FGD-5, FGD-6, FGD-7, FGD-8, FGD-9, FGD-10, FGD-11
Visually impaired	7	FGD-1, FGD-4, FGD-7, FGD-9
Parents with baby stroller	4	FGD-12

The participants of focus group discussions were randomly selected from the people living in Ankara, who have different reduced mobility characteristics as:

- Physical impairment: Persons with wheelchair or walking stick (or using both),

- Visual impairment: Persons with at most 20% or no visual ability,

- Parents with baby stroller: Parents using single baby stroller and twin baby stroller.

Among people with disabilities in Turkey, the ones with physical impairment and visual impairment have the highest population percentage as mentioned with a graphical representation in 'Accessibility Context in Turkey' chapter. The percentage of individuals having difficulty in walking up or down stairs without using any aid or assistance is 7,9%, the percentage of individuals having difficulty in walking without using any aid or assistance is 5,5% and the percentage of individuals having seeing problem is 5,8% as of 2019. Therefore, it is assumed that selecting group of PRMs from the ones having highest percentage in Turkey could indicate a meaningful representation of population of PRMs in Ankara.

In total, 36 people were invited and registered, and 32 of them participated in focus group discussions. 28 of participants were people with disability (21 of them have physical impairment and 7 of them have visual impairment) and 4 of them were parents with baby stroller. Selected PRMs are living in Ankara, in differentiated parts of the city. There are two prominent reasoning to select Ankara as case study area for the focus group survey:

- The first reason is that spatial case study analysis on accessibility of urban environment was carried out in Ankara by selecting sample areas of three neighborhoods and a part from city center. To sustain consistency within the thesis research, participants of user perspective analysis were selected from PRMs living in Ankara.

- The second reason is that Ankara hosts a considerable number of NGOs related with disability. The challenge of finding the most relevant participant for focus group discussions has been minimized by contacting related NGOs in Ankara. Some

specific participants of focus group discussions are selected as the Head of Ankara Provincial Disability Assembly, Head of Yenimahalle Disability Assembly, Head of Orthopedically Disabled Solidarity Association, Head of Turkey Confederation of People with Disabilities, Head of the Association of People with Disabilities Working in the Public Service, Member of METU without Barriers Student Club, Head of the Memursen Disability Commission, and Head of Active Visually Impaired Association.

In the text, opinions of participants of focus group discussions are presented without mentioning their names. Instead, pseudonyms are used such as F1-A that is read as '1st focus group discussion-opinion of the participant A (A is the first letter of the name of the participant) to respect personal privacy principles. In some focus group discussions, there could be more than one participant having the name starting with the same first letter. In such cases, the pseudonym is formed as F1-K1 and F1-K2. Focus group discussion number and date, participant's pseudonym, and reason of reduced mobility is mentioned in Appendix E.

4.5.3.2 Data Collection

User perspective has been investigated through focus group discussions as a reasonable method to obtain approaches of directly affected groups of PRMs. Making group discussions rather than individual in-depth interviews has a reasoning behind that face-to-face interaction and discussions have probability to generate new ideas, new approaches from conflicting or compromising ideas of different participants. Accessibility is an argumentative issue in Turkey under the pressure of different interest groups, challenging ideas and socially exclusive behaviors and urban transport policies. Therefore, within group discussions, interaction with each other for participant PRMs was expected to create a new learning arena and emergence of new ideas and questions.

Some certain steps defining characteristics of focus group discussions are as follows:

- All focus group discussions were conducted through online Zoom meetings in case of COVID-19 pandemic.

- Making groups with a mix of persons with physical impairment and visual impairment was prioritized. Only the last meeting was composed of four parents using baby stroller.

- For each meeting, the optimum number of participants was determined as three people. In some of the discussions, the number of participants became four and sometimes two due to absent participants.

-Each meeting lasted for about 60 to 120 minutes depending on the number of participants and content of discussions.

The questions asked during focus group discussions are separated into two categories: spatial accessibility questions and open discussion questions about the social, administrative, and right-based context of accessibility. However, there were justifications for asking the first category's questions -spatial accessibility questions- to users, because the corresponding spatial accessibility questions had previously been asked directly to urban space in the previous chapter (Chapter 5). The goal was to see if there was a link between researcher and user perspectives, as well as to get user thoughts on spatial accessibility through these warm-up questions. In the second part, the aim is to open discussions about what the underlying reasoning of accessibility barriers are, how to consider accessibility as a right, and if car use affects accessibility or not. Accessibility focus group discussions question set is mentioned in Appendix D.

Outputs of each meeting were categorized and analyzed in detail under certain sub-headings, which are spatial, societal, administrative barriers. At the end of presenting results user perspective, a conclusive analysis is done in conclusion chapter.

CHAPTER 5

SPATIAL ACCESSIBILITY ANALYSIS IN ANKARA THROUGH RESEARCHER PERSPECTIVE

Urban space is one of the matters of accessibility. Spatial accessibility analysis aims to involve the investigation on spatial accessibility problems that stand as barriers against PRMs and a pursue of a set of insight about the reasoning behind inaccessible urban space. Researcher perspective gives an external approach to accessibility problem through case study research. With this respect, three neighborhoods - Bahçelievler, Beştepe and Söğütözü- and one segment of Atatürk Boulevard from city center is selected as the case study area in Ankara. In this chapter, outputs of the data gathered from the related areas in Ankara are presented with graphs, tables, maps and photographs. Finally, concluding remarks and inferences are revealed to constitute a baseline for the spatial aspect of problem of right to access in Turkey[19].

5.1 Accessibility Field Research Results

Accessibility field research was conducted depending on below mentioned indicators and their sub-items to draw conclusions and further analyses in detail[20].

- Pedestrian sidewalk
    - Width of sidewalk
    - Surface of sidewalk

[19] For spatial accessibility case stdudy analysis, the related deliverables produced specifically by the author for the Project -developed through the partnership with 'GeoInsight Data Analytics Co. Ltd.' Middle East Technical University Technopolis: *Barrier-free Smart City Analytics GIS Software database and System Architecture*"- are partially utilized.

[20] Indicators related to car parking are omited in the content of this research.

    - Barriers on sidewalk
    - Tactile pavement
- Ramp
    - Existence of ramp for the level differences above 2cm
    - Width of ramp
    - Slope of ramp
    - Surface of ramp
    - Ramp at junctions
- Pedestrian crossing
    - Barriers to access crossing
    - The condition of at-grade crossings
    - Pedestrian crossing sign at uncontrolled crossings
    - Visual and hearing features at signalized junctions
    - The height of button (if any)
    - Pedestrian overpass and underpass
- Public transport
    - Bus stop platform height
    - Accessibility of entrances of rail system stations
    - Signages warning people with disabilities
    - Cover of bus stops
    - Sitting bench at bus stops
    - Enough space at bus stops for people with wheelchair
    - Braille alphabet info at stops
    - Voice warning for hearing impaired people at stops
- Open and green areas
    - Lighting for main paths in parks
    - The width of main paths
    - Slope and surface of main paths
    - Urban furniture as a barrier in parks
    - Position of resting area: on the path/side of the path

- Frequency of sitting benches
- A space to be designed next to sitting bench with at least 1.2m width
- The height of tables

It is noteworthy to mention that a few of those indicators seen in the list were omitted during the anaylses in this chapter as an outcome of case study research since data quality of those missing sub-items were not at a satisfactory level (i.e., lighting for main paths in parks, cover of bus stop, or slope or surface of main paths)

In this part, the aim is to reveal the results of the field research in Bahçelievler, Beştepe, Söğütözü Neighborhoods and Atatürk Boulevard in Kızılay by using graphs, tables, maps and photographs. At the end of this chapter, conclusive analyses are made to draw conclusion associated with the Right to the City.

In total, data entered at 720 points. Bahçelievler is neighborhood from which most data were obtained with 41%. Bestepe follows with 31% and Söğütözü with 20% and the part of Ataturk Boulevard with 8% (Figure 5.1).

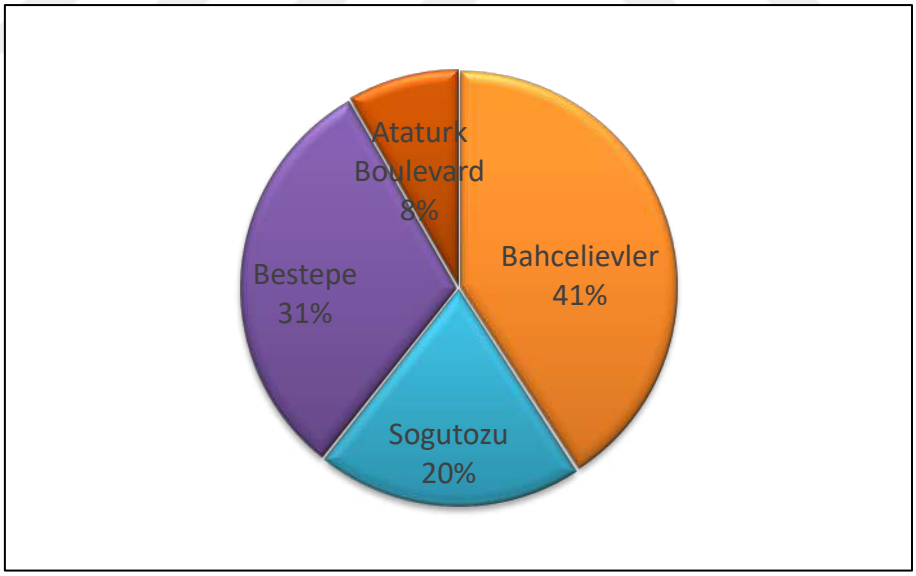


Figure 5.1. Percentage Distribution of Data Gathered

Henceforward, the results of detailed analysis of each indicator of accessibility are mentioned starting with pedestrian sidewalk.

5.1.1 Pedestrian Sidewalk

Sidewalk is one of the most prior components of accessibility of PRMs since the walking part of accessibility chain takes place on sidewalk. The analysis was carried out considering the factors affecting accessibility which are width, surface structure, barriers and tactile pavement on sidewalk.

In this introductory part of sidewalk analysis, prior to the detailed analysis of accessibility parameters for sidewalk indicator, two different mapping style will be mentioned. In the first one, all the problematic points are presented for Bahçelievler, Beştepe, Söğütözü and Atatürk Boulevard. The data were filtered in ArcGIS Online by considering the following parameters about the sidewalk providing that display features match any of the following expressions:

-Width of sidewalk is less than 1.5 m.

-There is a barrier on sidewalk.

-Surface cover is rough.

-Tactile pavement does not follow the main pedestrian flow.

-Tactile pavement does not transform from stripe to bubble layout once a barrier is met.

-There is a sudden level difference (more than 2 cm[21]).

-The material of tactile pavement creates barrier.

If any single piece of above-mentioned expressions exists on sidewalk, accessibility chain is interrupted for any person having reduced mobility targeting to travel from one point to another. Below Figures (Figure 20-21-22 and 23) shows the points

[21] 2 cm level difference is considered as a barrier for people with disabilities in Turkey with respect to the related legislative measures.

where accessibility chain as well as the right to access is problematic in Bahçelievler, Beştepe, Söğütözü and Atatürk Bouleverd by means of sidewalk.

Figure 5.2 shows inaccessible points with red dots on sidewalks in Bahçelievler Neighborhood. It is one of the mostly visited attraction place in Ankara with its shopping, café-restaurant uses, therefore accessibility measures need to be considered not only for residents but also for the visitor PRMs. With this respect, current accessibility condition of sidewalks in the area would be expected to serve well to all. However, it is obvious that there are so many inaccessible points detected, which makes sustaining accessibility chain almost impossible in Bahçelievler. Moreover, this is a condition for only pedestrian sidewalk structure, further analysis on ramps, public transport stops/stations and green areas will make the situation worse for accessibility of PRMs.

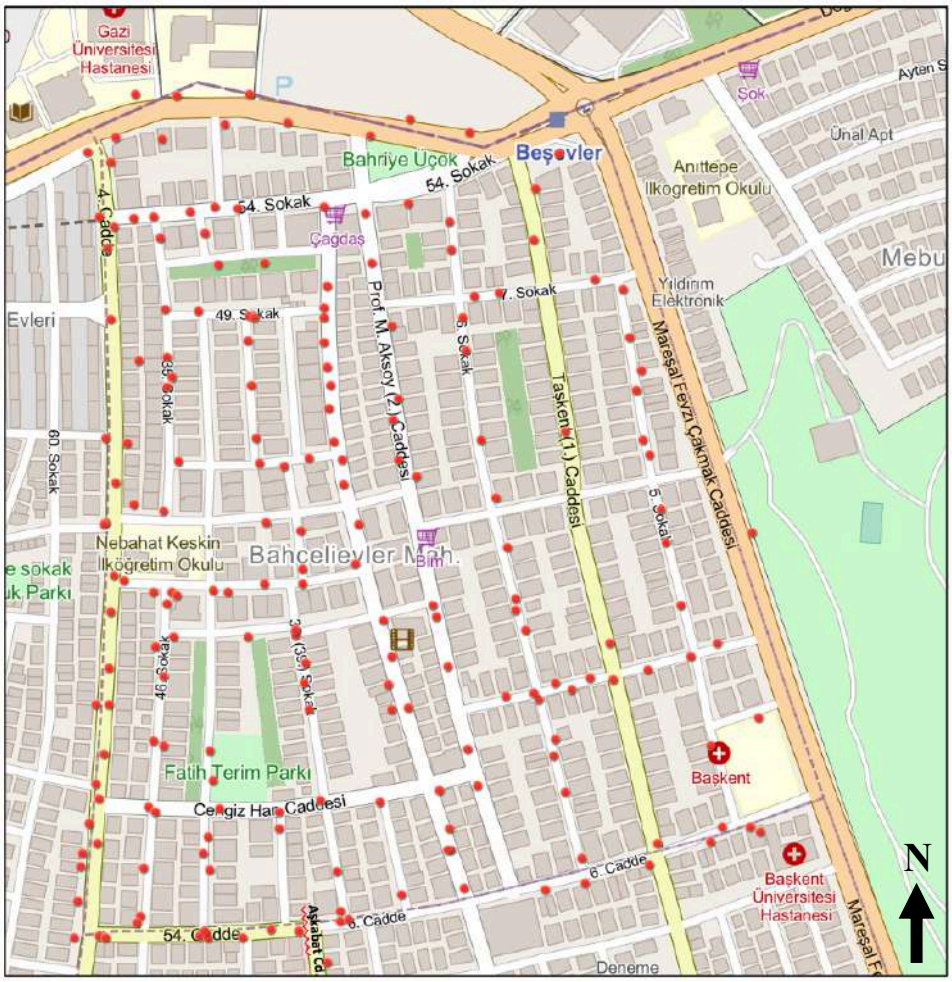


Figure 5.2. Problematic Points about Sidewalk where Accessibility is Interrupted in Bahçelievler Neighborhood (Produced by the Author Using ArcGIS Online)

Beştepe Neighborhood is composed of four different land use structure: old Beştepe settlement, newly built prestigious residential area, AŞTİ Coach Terminal and shopping mall-hospital-business centers. Considering Figure 5.3, among these areas, old and new residential settlement areas in Beştepe step forth. In addition, Yaşam Cd.[22] serving primarily to TOBB ETÜ Hospital has many inaccessible points creating barriers although the opposite scenario would be expected since a hospital is intensively used by Persons with Reduced Mobility.

[22] The abbreviation, Cd., is used for the term Road -in Turkish '*Cadde'*



Figure 5.3. Problematic Points about Sidewalk where Accessibility is Interrupted in Beştepe Neighborhood (Produced by the Author Using ArcGIS Online)

Söğütözü Neighborhood is composed of big building blocks having public institutions, business centers with cafes-restaurants and housing areas. Considering Figure 5.4, it is noteworthy that the entrances of uses from Eskişehir Road (Dumlupınar Boulevard) seem to have problematic sidewalk structure. In addition, red dots are intensified on the streets serving to residential areas on the east (multi-storey gated housing sites) and northwest of the neighborhood (*Emsan Sitesi*).

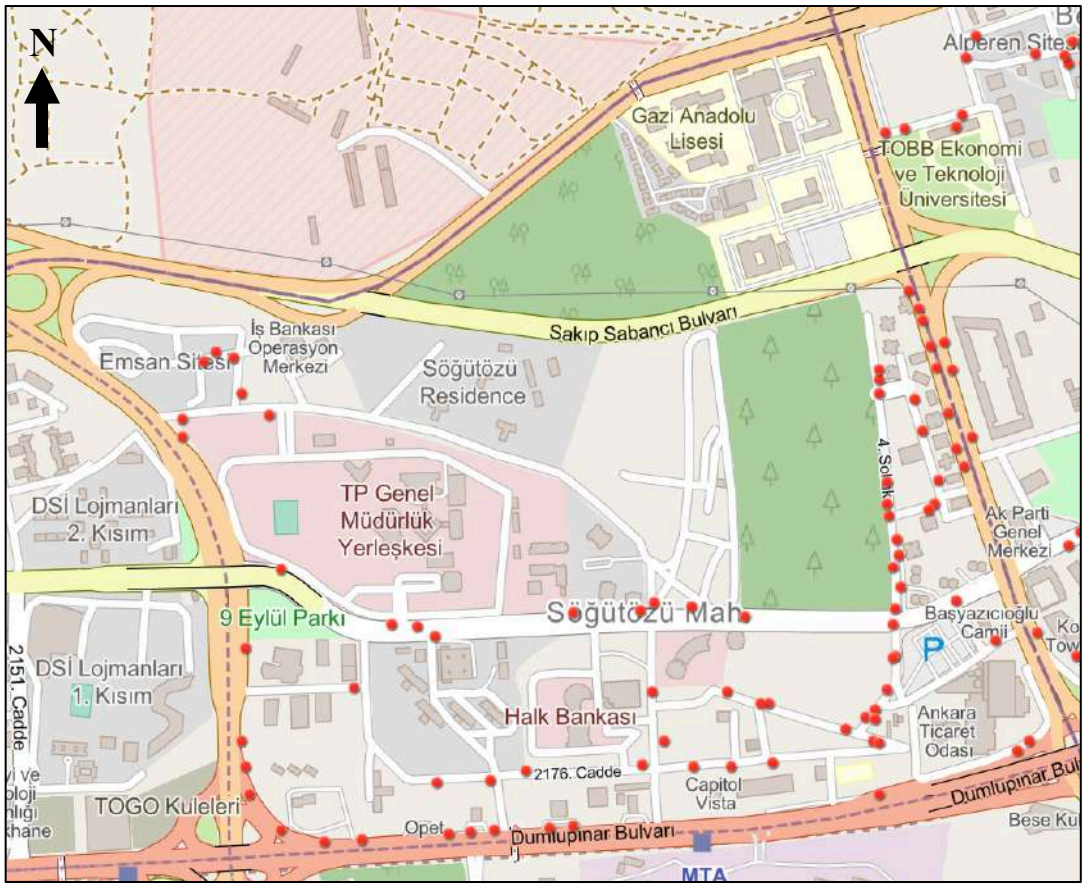


Figure 5.4. Problematic Points about Sidewalk where Accessibility is Interrupted in Söğütözü Neighborhood (Produced by the Author Using ArcGIS Online)

Figure 5.5 shows problematic points on sidewalks of Atatürk Boulevard, which is completely composed of commercial uses as the city center of Ankara as one another mostly visited attraction place. Any intensification was not observed in this area.

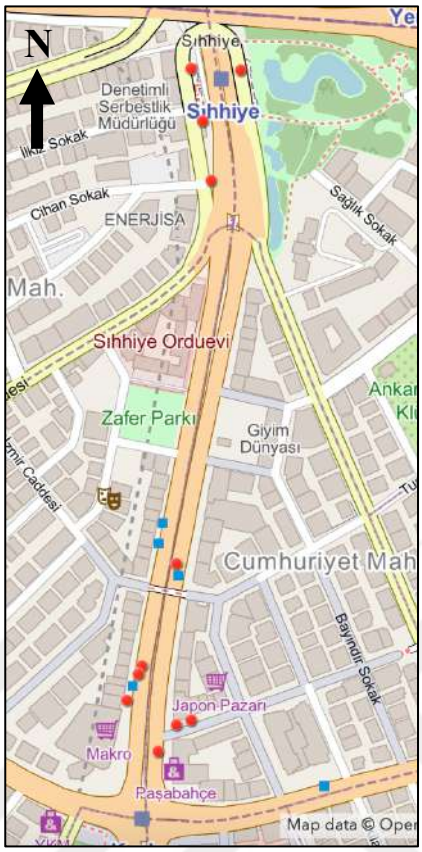


Figure 5.5. Problematic Points about Sidewalk where Accessibility is Interrupted on the Analyzed Segment of Atatürk Boulevard (Produced by the Author Using ArcGIS Online)

Demonstration of problematic points as a map might cause an insight that all accessibility problems related to sidewalk are allocated homogenously within those urban areas in Ankara. However, Accessibility problems intensification mapping, created through ArcGIS Online tool, reveals another dimension. When all these four case study areas are analyzed in this regard, it is seen that the barriers about sidewalk structure intensifies on three certain locations in Bahçelievler (old Bahçelievler area designed by Jansen) and Beştepe (old Beştepe Residences and new Beştepe

residential areas) Neighborhoods. Figure 5.6 shows these areas as intensification mapping for sidewalk problems[23].

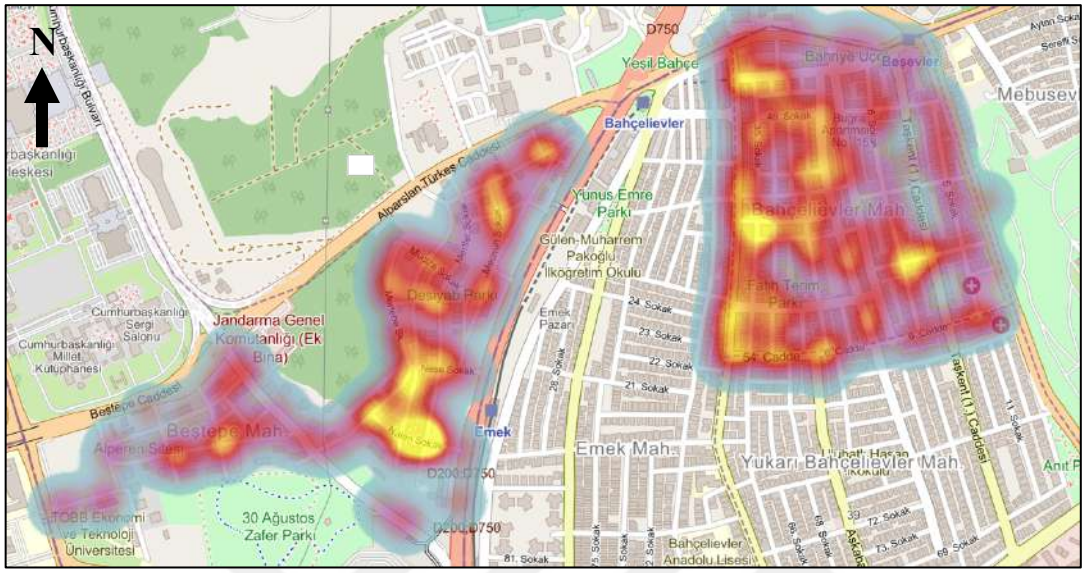


Figure 5.6. Prominent Areas in Accessibility Barriers Intensification Mapping by means of Sidewalk (Produced by the Author Using ArcGIS Online)

In Bahçelievler Neighborhood, the very first Bahçelievler design was made by Jansen in 1930s framed by Kazakistan Cd. in the west, Prof. Muammer Aksoy Cd. in the east, 54. Cd. in the south and Bahriye Üçok Cd. in the north. Accessibility problems on sidewalk obviously intensifies in this old Bahçelievler residential area where some buildings still stand designed by Jansen in 1930s.

Beştepe Neighborhood includes two completely different housing typologies: the first one is old Beştepe residential area at the northeast of the neighborhood and second one is newly built (constructed around 2010s) prestigious residential area at the northwest of the neighborhood. It is remarkable that the most inaccessible sidewalks are in old Beştepe residential area. Despite not being in the same level of inaccessibility considering sidewalks compared to old Bahçelievler and old Beştepe

[23] The map shows the part that intensification color turn out to be yellow meaning the most intensified areas composed of the proximity of the inaccessibile points.

residential areas, the new Beştepe residential area -composed of high-rise gated buildings- shows an inaccessible characteristic. Figure 5.7 states housing and street morphology of these three areas.

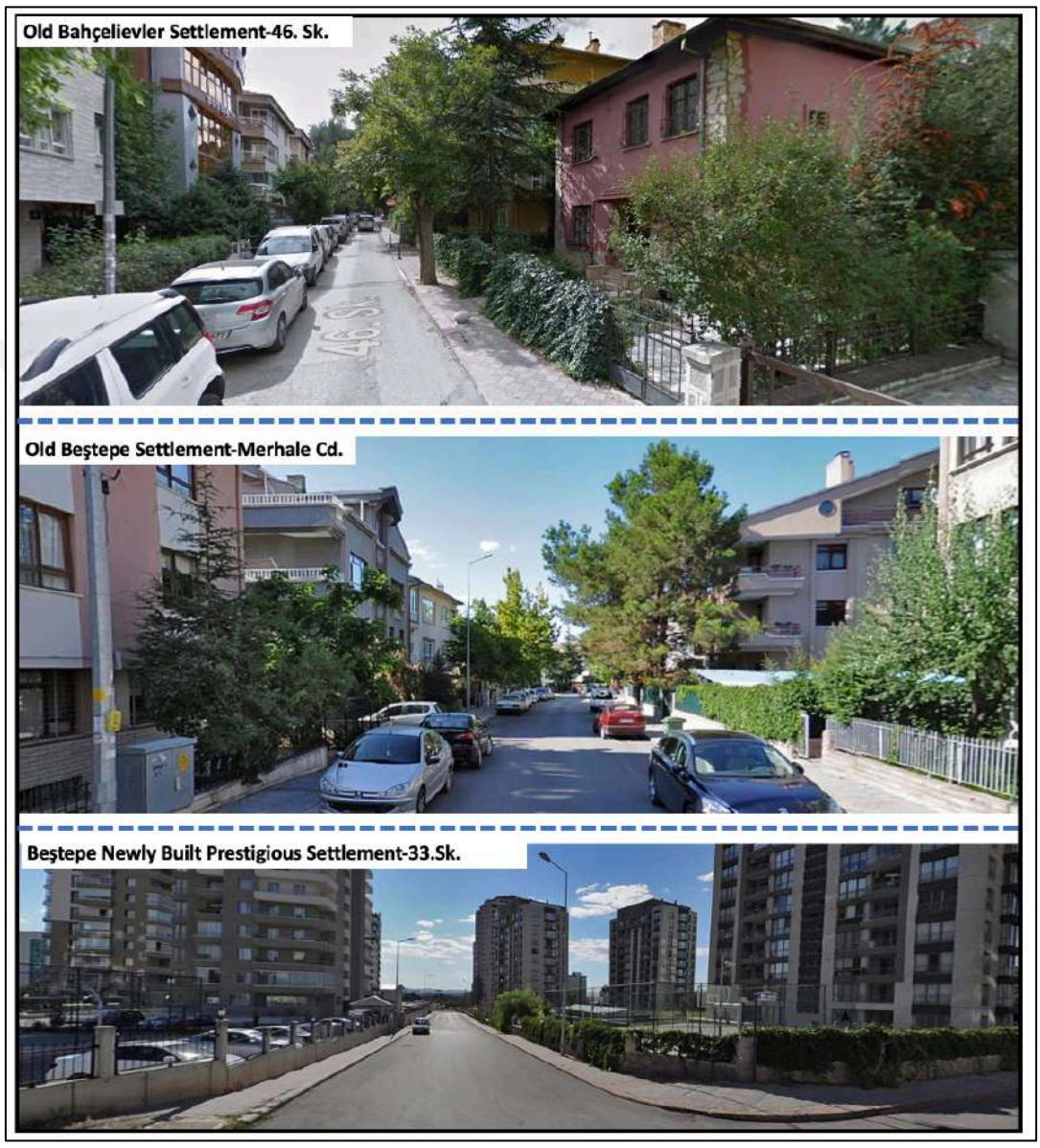


Figure 5.7. Street and Housing Morphology Views from Three Most Inaccessible Areas in terms of Pedestrian Analysis (Images are Captioned by using Street views of https://www.google.com/maps and https://yandex.com.tr/harita, -in sequential order)

In this introductory part of sidewalk analysis, a general picture is depicted with a comprehensive perspective composed of an effort to establish a relationship between accessibility of sidewalk and land use structure. Henceforward, accessibility of sidewalk is analyzed in detail with respect to the parameters of width, surface, barriers and tactile pavement.

5.1.1.1 Width of Sidewalk

Depending on the related legislative analysis and standards, width of sidewalk should not be less than 1.5m[24]; at least, it needs to be between 1.5m-2m. Ideally, it should have more than 2m width. Sidewalk width with less than 1.5m makes urban mobility quite difficult for especially some members PRMs such as persons with battery-operated wheelchair, manual wheelchair, parents with baby stroller -both for single and twin babies-. Figure 33 demonstrates sidewalk analysis data collection points in terms of width. Considering that green dots show points in which the sidewalk continues as 2m width or more, blue dots as the ones in between 1.5m-2m width, and red dots -the most critical ones- as the ones less than 1.5m width; all the areas other than Atatürk Boulevard, which has sidewalks almost completely having more than 2m width, have accessibility problems as one of the most significant barriers in reaching from one point to another. It is even quite challengeable to find alternative streets in Bahçelievler, Beştepe and Söğütözü to eliminate sidewalk width less than 1.5m as a barrier as seen in Figure 5.8.

[24] 1,5 m width for a sidewalk is to provide enough space for two persons with wheelchair passing adjacent to each other.



Figure 5.8. The Analysis of Sidewalk Width in Bahçelievler, Beştepe, Söğütözü and Atatürk Boulevard (Produced by the Author Using ArcGIS Online)

To emphasize the problematic current condition, below Figure 5.9 shows example views from narrow sidewalks in Bahçelievler, Beştepe and Söğütözü Neighborhoods. In addition to the problem with sidewalk width, there are serious barriers such as trees, pits, level differences and infrastructural facilities preventing accessibility that doubles the level of complexity of this spatial problem.



Figure 5.9. Example Views of Sidewalk Width problem in Bahçelievler, Beştepe and Söğütözü Neighborhoods (Photographs Taken During Fieldwork)

5.1.1.2 Surface of Sidewalk

The standards and rules in Turkey note that surface of sidewalk should prevent sliding, have smooth surface and be free from sudden level differences. First of all, 2 cm level difference is counted as a surface barrier for people with disability. In other words, the surface on which all PRMs practice their mobility right needs to provide a comfortable and safe condition free from any risk of termination of accessibility. Figure 5.10 shows views from surface problems from case study areas. For an able-bodied person, a 2cm level difference or the use of cobblestone as surface material on sidewalk might not even be noticeable. However, considering Figure 28, the example view from Bahçelievler shows that there is a deterioration of surface material of sidewalk creating level differences. Besides, the material used for tactile

pavement (stripes are sticked onto the sidewalk) as a part of the sidewalk is remarkably sliding in rainy weathers, which doubles surface problem of this point with having level differences and sliding tactile pavement. In the view from Beştepe, the manhole shaft creates level differences as well as decreasing the width of sidewalk. The views from Söğütözü and Atatürk Boulevard includes manhole shafts, broken paving stones that create level differences more than 2cm.



Figure 5.10. Surface Problems on Sidewalk (Photographs Taken During Fieldwork)

5.1.1.3 Barriers on Sidewalk

Trees, lampposts, ornamental planting, infrastructural boxes, street infrastructure (benches, garbage bins etc.) and any other objects occupying space on sidewalk need to have a reasonable width in order not to prevent accessibility on sidewalk. The standard in this regard, corresponds to the space occupied on sidewalk, is that object needs to have a width in the range of min75cm-max120cm. therefore, objects below 75cm and above 120cm width are accepted to have potential to create accessibility problem. However, it is worth to mention that if there is a problem with the width of sidewalk, for example a sidewalk having 60 cm width, any object with any sort of dimension could play a role as a barrier. Figure 5.11 presents the results of data gathered in study areas by means of width of barriers shown as a graph. The orange bar represents barriers having width between 75cm-120cm, which is not accepted as barrier considering the standards in Turkey. however, blue and gray percentages are accepted as barriers for people with disabilities. Atatürk Boulevard that has wide sidewalks seems not having too many accessibility problems related to width of objects on sidewalk. In addition, in Bahçelievler and Söğütözü more than half of the objects on the sidewalk have width less than 75 cm, which decreases the noticeability of objects by especially people with wheelchair and having hearing impairment.

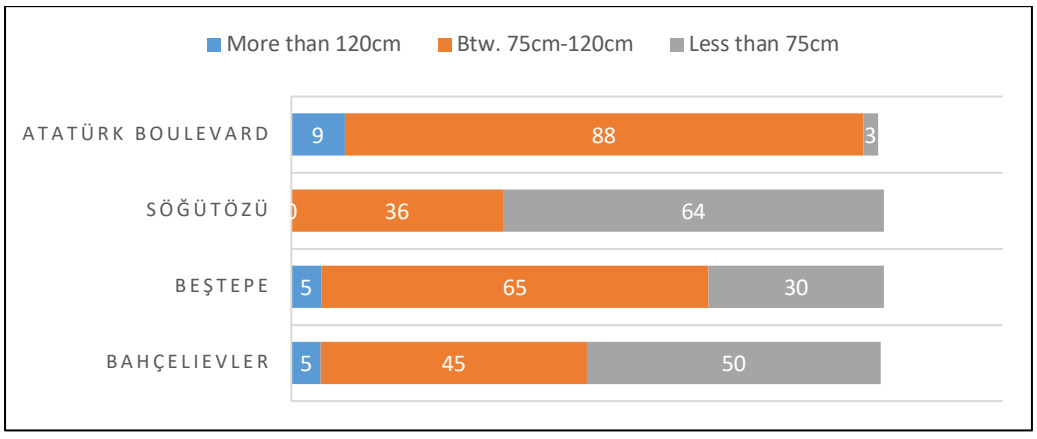


Figure 5.11. Percentage Distribution of Width of Barriers in Study Areas (%)

Type of barriers on sidewalk is another dimension elaborates the essence of accessibility problem. During case study analysis in Bahçelievler, Söğütözü, Beştepe Neighborhoods and, barriers are grouped under four categories;

-Sudden level difference

-Pit

-Rough surface due to surface material change

-Urban furniture

Figure 5.12 shows percentage distribution of types of barriers among case study areas. In the graphical representation, the condition in Atatürk Boulevard is omitted since total 9 barriers are detected whilst the number is 159 for Bahçelievler. In three neighborhoods, most detected barriers are counted in the group of urban furniture and trees. Considering distribution of percentages of barriers among neighborhoods, Bahçelievler and Beştepe show similar characteristics and Söğütözü has a balanced distribution.

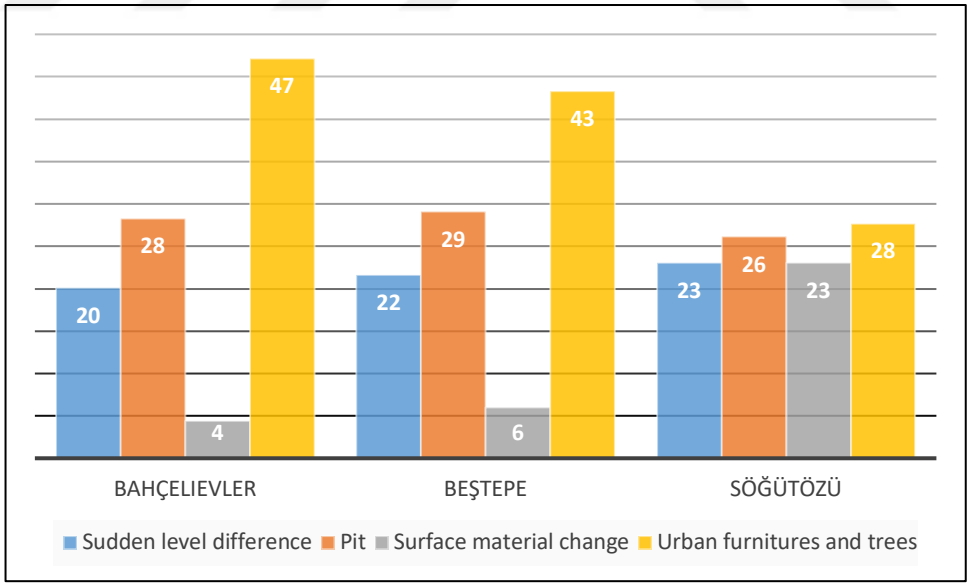


Figure 5.12. Percentage Distribution of Types of Barriers in Case Study Areas (%)

Figure 5.13 shows example barriers against accessibility in Bahçelievler Neighborhood. On a part of the sidewalk in Taşkent Cd. and 36th Sk, access in

completely blocked by an infrastructure facility and a tree that prevents any person to pass the other side of sidewalk no matter being disabled or able-bodied. In 44th Sk, a leaned tree covers all the spaces at a point on the sidewalk blocking any PRMs to pass. In the last view, in 47th Sk[25]., two trees and an infrastructure facility form a challengeable labyrinth-like pass that makes impossible for a disabled person -e.g., a person with wheelchair-. The four images demonstrate a combination of barriers on specific points on sidewalk.



Figure 5.13. Example Views from Sidewalk Barriers Against Accessibility in Bahçelievler Neighborhood (Photographs Taken During Fieldwork)

[25] The abbreviation, Sk., is used for the term Street -in Turkish '*Sokak'*

Barriers shown in Figure 5.14 are from Beştepe Neighborhood. In Zübeyde Hanım Cd. and Yaşam Cd., garbage container and lightening post narrow down sidewalk as well as creates barrier. In Cumhurbaşkanlığı Cd, there are two pits one after another that -for example- narrow downs sidewalk for a person with wheelchair or parents with baby stroller and creates dangerous barriers for a person having visual impairment. In 33thCd., a pert of sidewalk was patched that not only creates level difference but also causes small scale pits.



Figure 5.14. Example Views from Sidewalk Barriers Against Accessibility in Beştepe Neighborhood (Photographs Taken During Fieldwork)

In Figure 5.15, example barriers are seen on three different parts of sidewalk on different roads. In Dumlupınar Blv., right side of sidewalk has deteriorated surface material and left side of sidewalk, which has smooth and fine surface, has a lightning post standing on the prospective route of pedestrians. In 2169th Sk., sidewalk remains considerably narrow due to a wide pit formed by broken surface material. Similarly, in 2180th Cd., there is a problem with surface material. Besides, the wide pit is covered by fallen leaves that is seen as if there is a trap for PRMs preventing accessibility.



Figure 5.15. Example Views from Sidewalk Barriers Against Accessibility in Söğütözü Neighborhood (Photographs Taken During Fieldwork)

5.1.1.4 Tactile Pavement

Tactile pavement is an indicator created by detectable warning plates/stripes on the surface of sidewalk. The aim is to warn visually impaired people for the changes on sidewalk. Those changes can be transition from sidewalk to carriage way, or notify passengers of public transport to watch their step. To make the color contrast, tactile pavement is expected to be in a different color than sidewalk (Cabvi, 2020). Tactile pavement is significant for visually impaired PRMs to success a continuous accessibility chain by being aware of any change on the route.

Firstly, barriers on sidewalk need to be surrounded by tactile pavement, which is revealed as one of the most prior weaknesses as a result of case study analysis. Figure 5.16 shows a set of graphs showing if barriers on sidewalk is surrounded by tactile pavement or not. Only 2% of barriers in Bahçelievler, 9% in Beştepe and 24% in Söğütözü are completely surrounded by tactile pavement. In the part studied on Atatürk Boulevard, none of the barriers are surrounded by tactile pavement. Sometimes, there are partial efforts to cover barriers in this respect, however, it is necessary to provide fully covered barriers to notify visually impaired people approaching towards a barrier from any side.

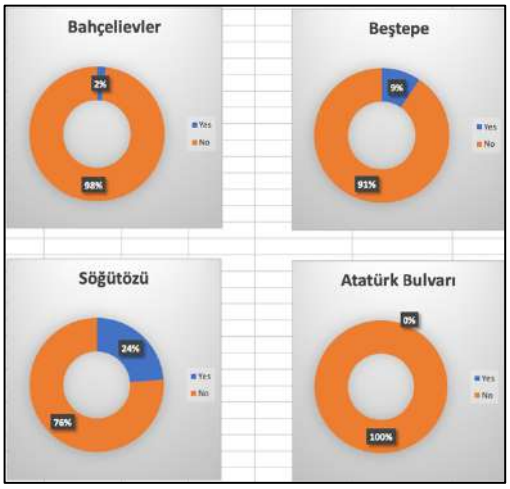


Figure 5.16. A Set of Graphs Showing If Barriers on Sidewalk Is Surrounded by Tactile Pavement or Not in Case Study Areas

Secondly, there needs to be tactile pavement at the beginning and end of stairs on any accessibility chain route of PRMs, which stands as another important weakness as a result of the analysis. Table 5.1 states whether there is tactile pavement at the beginning and end of stairs. In Bahçelievler, at 1 point there are stairs, which does not have tactile pavement warning on the ground. In Beştepe at 5 points with stairs, and in Söğütözü at 2 points with stairs; there were no tactile pavement warning, either. The part studied on Atatürk Boulevard in Kızılay makes a difference along with the fact that half of the points with stairs have tactile pavement at the beginning and end. Therefore, it is worth to note that, stairs without tactile pavement create a significant barrier for the continuation of accessibility chain.

Table 5.1. Statement of Whether There Is Tactile Pavement at the Beginning and End of Stairs in Case Study Areas[26]

	Yes	**No**	**The number of Stairs Met**
Bahçelievler	0	1	1
Beştepe	0	5	5
Söğütözü	0	2	2
Atatürk Boulevard	3	3	6

Thirdly, by means of tactile pavement, PRMs need to be warned when approaching the pedestrian crossing to notify them about getting ready to cross the road. In this sense, Bahçelievler Neighborhood and Atatürk Boulevard become prominent along with 69% and 70% positive detections -respectively- for the points at junctions that require tactile pavement. On the other hand, 78% of the points in Beştepe Neighborhood and 65% of the points in Söğütözü Neighborhoods at junctions that require tactile pavement do not have any. These outcomes reveal that Bahçelievler

[26] Numbers in the table mean how many times tactile pavement notification on the ground detected

and Atatürk Boulevard seem closer to reach a decent tactile pavement system at junctions compared to Beştepe and Söğütözü Neighborhoods (Figure 5.17)

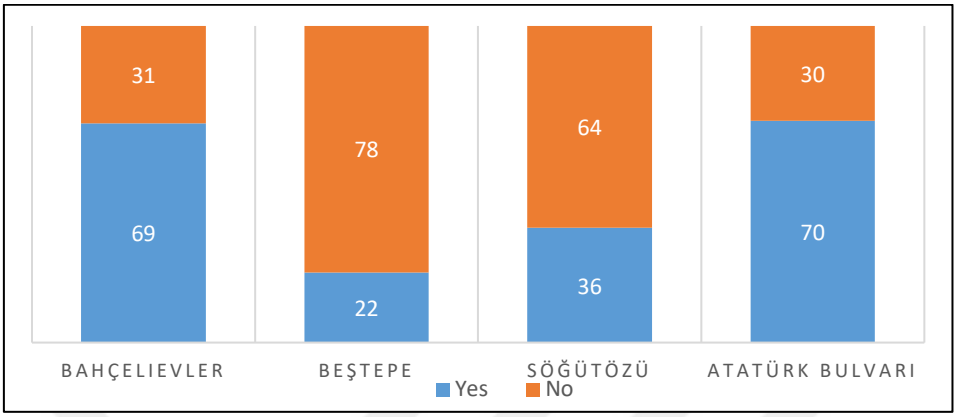


Figure 5.17. Existence of Tactile Pavement at Crossings in Case Study Areas (%)

Fourthly, another accessibility question about sidewalk, which was asked to case study areas during data collection, is that does tactile pavement transform from stripe to bubble texture when barriers and turns are met? This question is significant for visually impaired people since once they are notified through a texture change in tactile pavement, they understand that they prospectively meet something different on their route. Stripe texture means that there is a continuous flow on the route, and bubble texture means that there will be a barrier or a turn on the route. Field work data collection states that tactile pavement texture change stands as one of the mostly succeeded parameters in all the four areas. In Bahçelievler Neighborhood and Atatürk Boulevard, if a person with visual impairment follows all tactile pavements on sidewalk, no problem will be met at the times that tactile pavement intersects with a barrier or makes a turn. In Beştepe and Söğütözü Neighborhoods, only 6% and 7% -respectively- of the points entered in this regard will create problem (Figure 5.18).

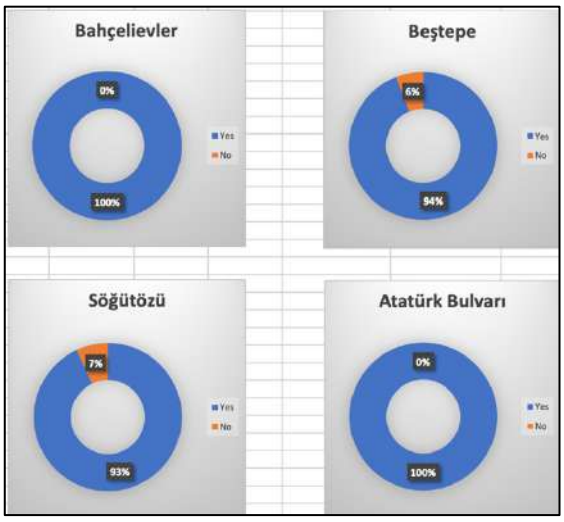


Figure 5.18. Demonstration of Whether Tactile Pavement Transforms from Stripe to Bubble Texture once Barriers and Turns are Met

The last questioning about tactile pavement on sidewalk is about the material. As another one of the mostly succeeded parameters. In the process of integration of Turkey to European Union standards, tactile pavement on sidewalk has entered into our life in the last decade in Turkey. At the beginning of the process, yellow tactile pavement stripes were sticked on sidewalk in many cities, however the material used created problems since it becomes slippery in rainy weathers. In recent years, tactile pavement system was transformed from sticked slippery texture to a specific yellow paving stone that provides the same straight and bubble texture structure. The new non-problematic tactile pavement material has been paved on most of the sidewalk in Ankara.

In Figure 5.19, several examples of tactile pavement are seen. In Kızılay, M1 Sakarya Cd. Metro Station entrance/exit, there is tactile pavement at the beginning and end of stairs with bubble texture keeping in mind that sticked tactile materials could still create a problem of being slippery Besides, a continuity problem is evidently seen. Other views from Bahçelievler Neighborhood represents examples of tactile pavement. Except the one in 25th Sk. (a problematic ending by means of width and angle of tactile pavement), the others have appropriate texture changes, decent material as paving stone.



Figure 5.19. Examples of Tactile Pavement in Ankara (Photographs Taken During Fieldwork)

In Figure 5.20, problematic implementation examples are mentioned. All four images show sticked and slippery type of tactile pavement with deteriorated, broken and missing pieces that affects continuity of the journey of a visually impaired person. In addition, the image from Atatürk Boulevard shows the problem for a tactile pavement not to make color contrast, which decreases noticeability of the flow of the route.



Figure 5.20. Problematic Implementation Examples of Tactile Pavement (Photographs Taken During Fieldwork)

As a result, it can be noted that there are considerable efforts of local governments for establishing a system of tactile pavement. After a problematic initiation of implementation with sticked type in Ankara, problems sourced by material type has mostly been resolved in the current situation. On the other hand, level differences on the surface, unexpected barriers blocking the continuity of flow of tactile pavement system and unexpected endings have still been creating accessibility problems for people with visual impairment.

5.1.2 Ramps

Ramp is an accessibility facility helping to provide a smooth transition from sidewalk level to a lower level for PRMs -especially people with wheelchair and parents with baby stroller-. First of all, there has to be ramp for the level differences above 2cm according to the standards in Turkey. Then, the quality of ramp has to be appropriate to use in terms of surface characteristic, slope and width. Once all these requirements are fulfilled, there is still one remaining parameter to have uninterrupted accessibility for PRMs: beginning and end of ramp has to be free from any barriers, which can be permanent (posts, street furniture as a part of sidewalk, bollards etc.) or temporary (cars occupying the flow route of pedestrians at especially crossings).

In case study analysis, all ramps detected in four areas were characterized by means of sub parameters such as width, surface and slope. Figure 5.21 shows points of problematic ramps with red dots that interrupt accessibility chain of PRMs. As Bahçelievler, Yukarı Bahçelievler and Emek Neighborhoods, which are adjacent to each other, are the areas in Ankara carrying one of the most intensive pedestrian flows with commercial attraction uses, all ramps need to serve effectively to all. However, the map states that there are many points on which pedestrian flow is interrupted. It seems that major roads such as Kazakistan Cd., Taşkent Cd., Bahriye Üçok Cd. and Mareşal Fevzi Çakmak Cd. are relatively in good condition compared to inner streets.

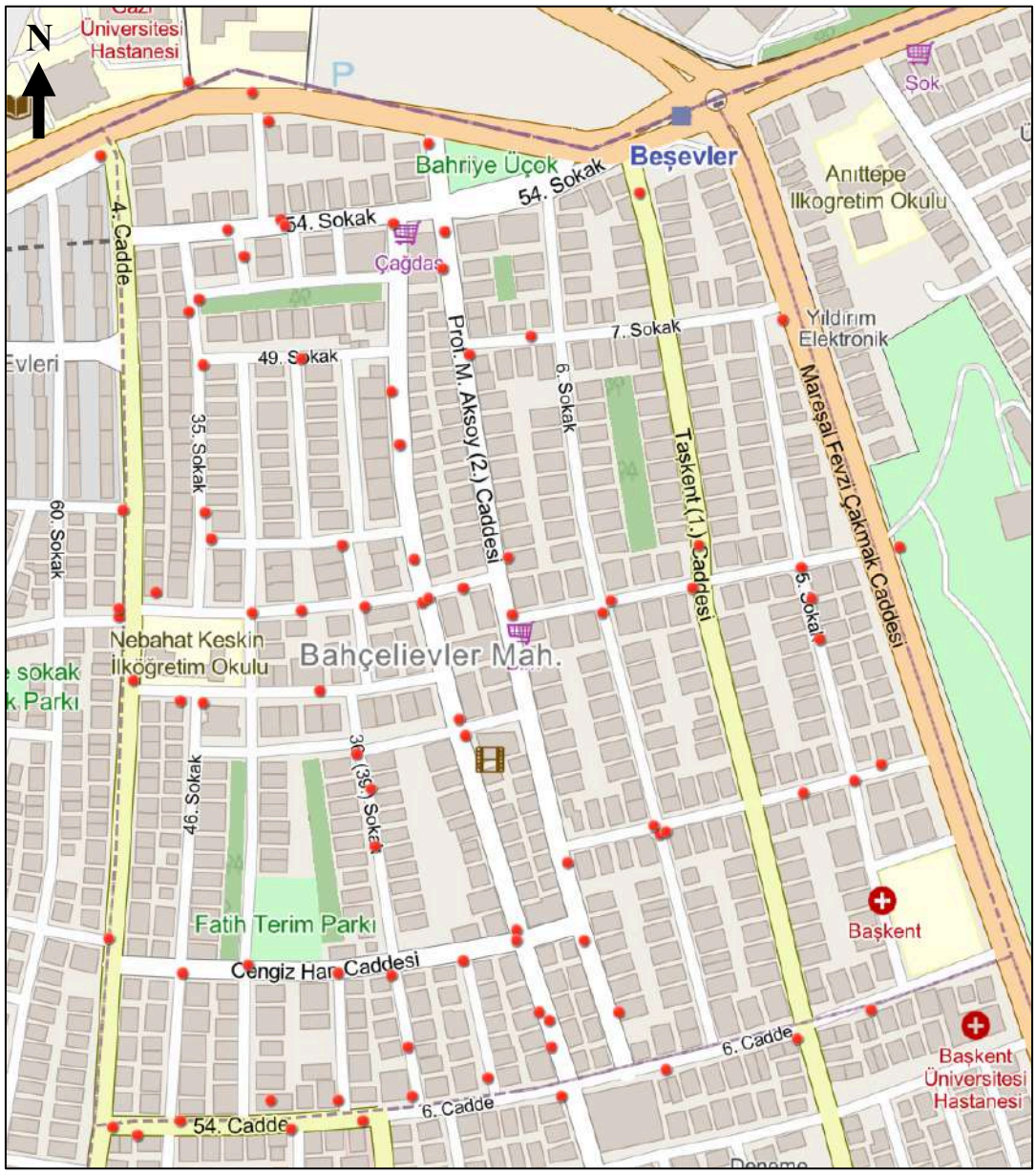


Figure 5.21. Problematic Points about Ramps where Accessibility is Interrupted in Bahçelievler Neighborhood (Produced by the Author Using ArcGIS Online)

In Figure 5.22, showing problematic ramps in Beştepe Neighborhood, the ones in old Beştepe settlement have become prominent in which red dots in inner streets intensify.

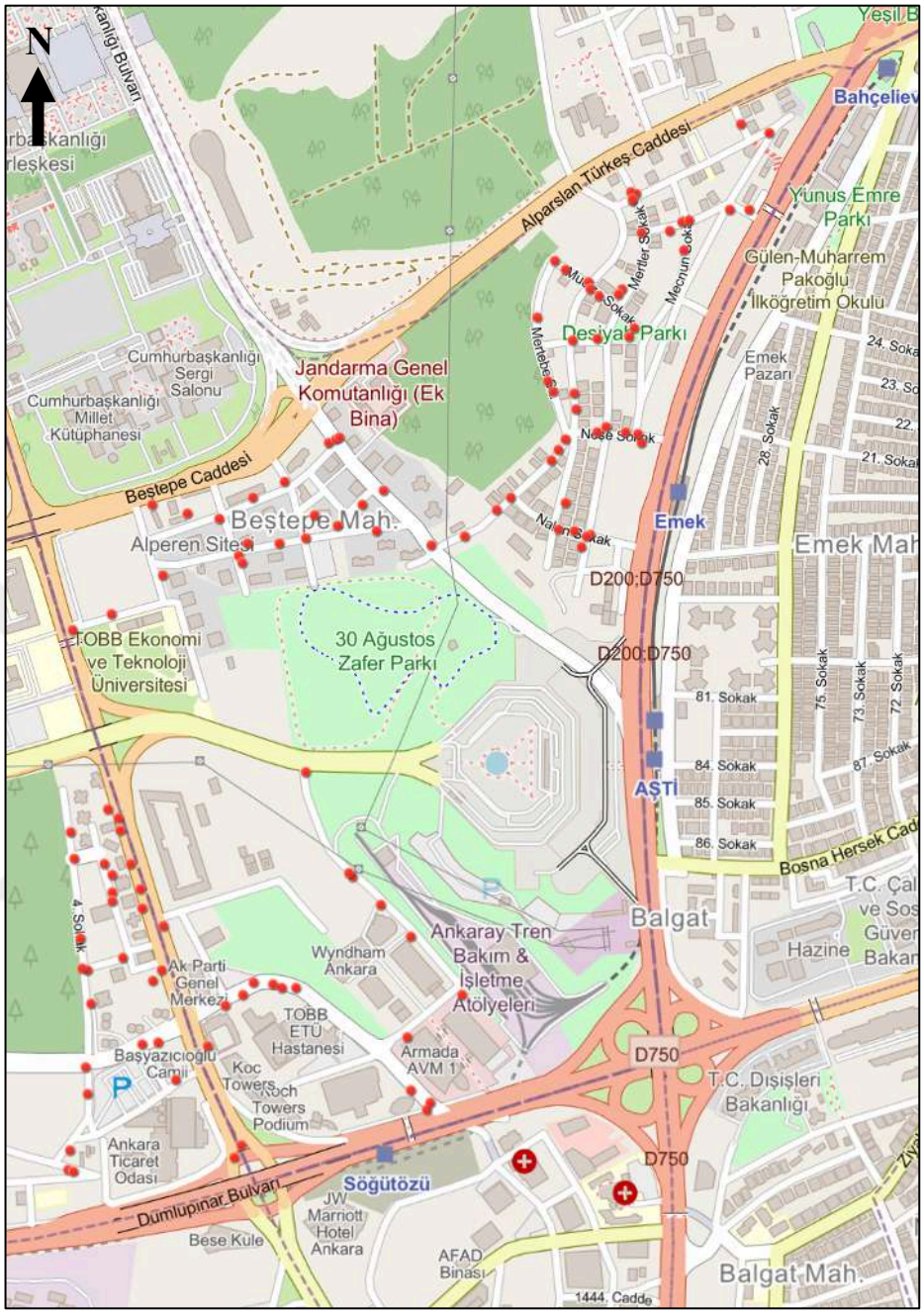


Figure 5.22. Problematic Points about Ramps where Accessibility is Interrupted in Beştepe Neighborhood (Produced by the Author Using ArcGIS Online)

In Söğütözü Neighborhood, red dots intensify particularly in the area where residential units exist on the east and western part of Dumlupınar Boulevard (Figure 5.23).

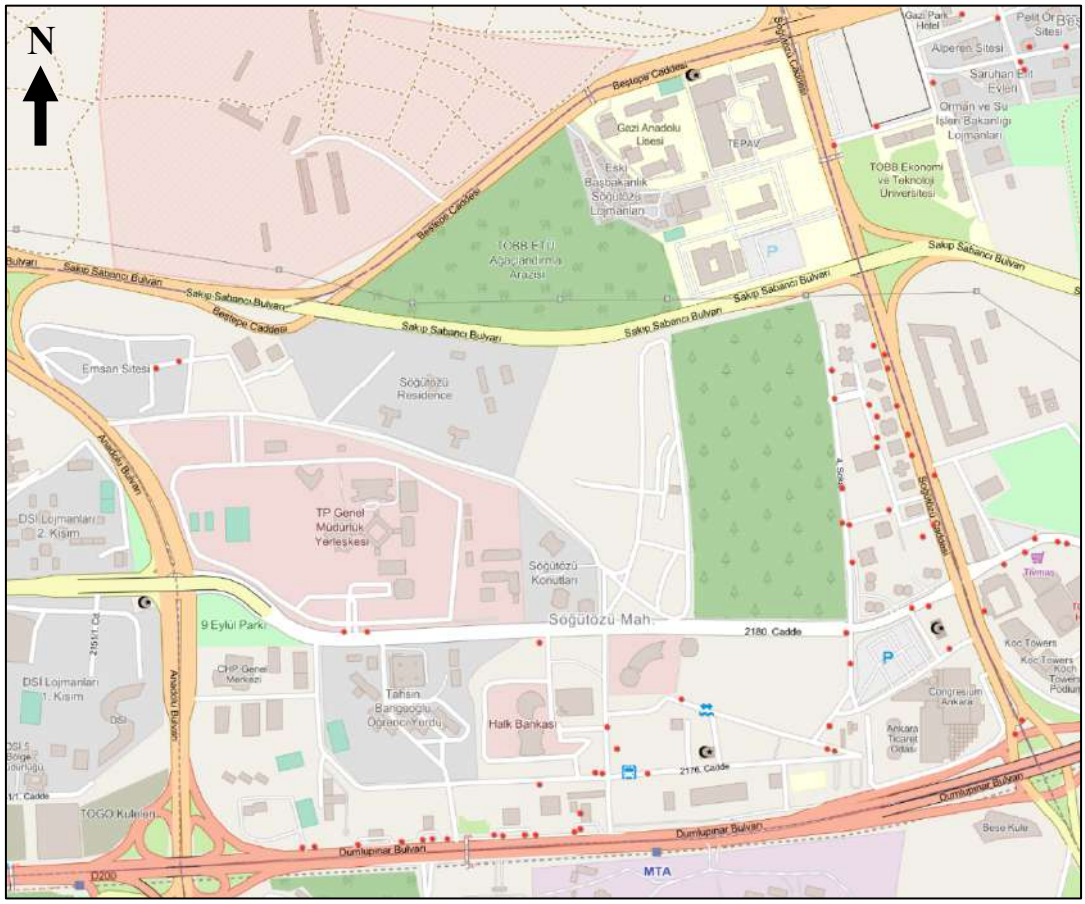


Figure 5.23. Problematic Points about Ramps where Accessibility is Interrupted in Söğütözü Neighborhood (Produced by the Author Using ArcGIS Online)

In the part of Atatürk Boulevard, problematic ramps were rarely detected that did not reveal any intensification on a specific area (Figure 5.24).

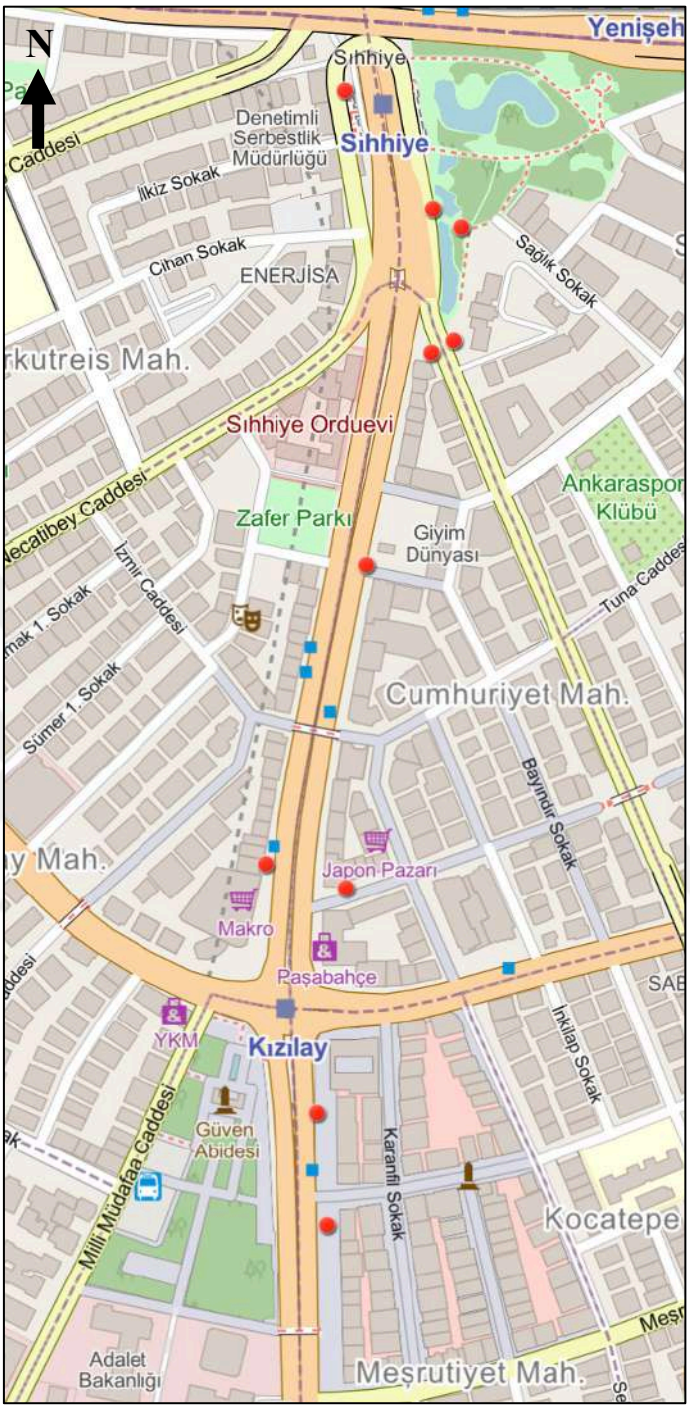


Figure 5.24. Problematic Points about Ramps where Accessibility is Interrupted on the Analyzed Segment of Atatürk Boulevard (Produced by the Author Using ArcGIS Online)

In addition, intensification mapping analysis clearly shows intensified areas of problematic ramps in three neighborhoods[27]. Areas where residential settlements exist in Beştepe, Söğütözü and Bahçelievler , and the part of Dumlupınar Boulevard on west of Söğütözü Neighborhood serving business centers, cafes/restaurants and gas stations are prominent areas inferred from case study research in which ramps stand as barriers rather than being facilitating components on sidewalk to achieve accessibility chain in an uninterrupted manner (Figure 5.25).

[27] The part analyzed on Atatürk Boulevard in terms of problematic ramps is not shown on this map since a total ten points were detected that did not present any intensification.

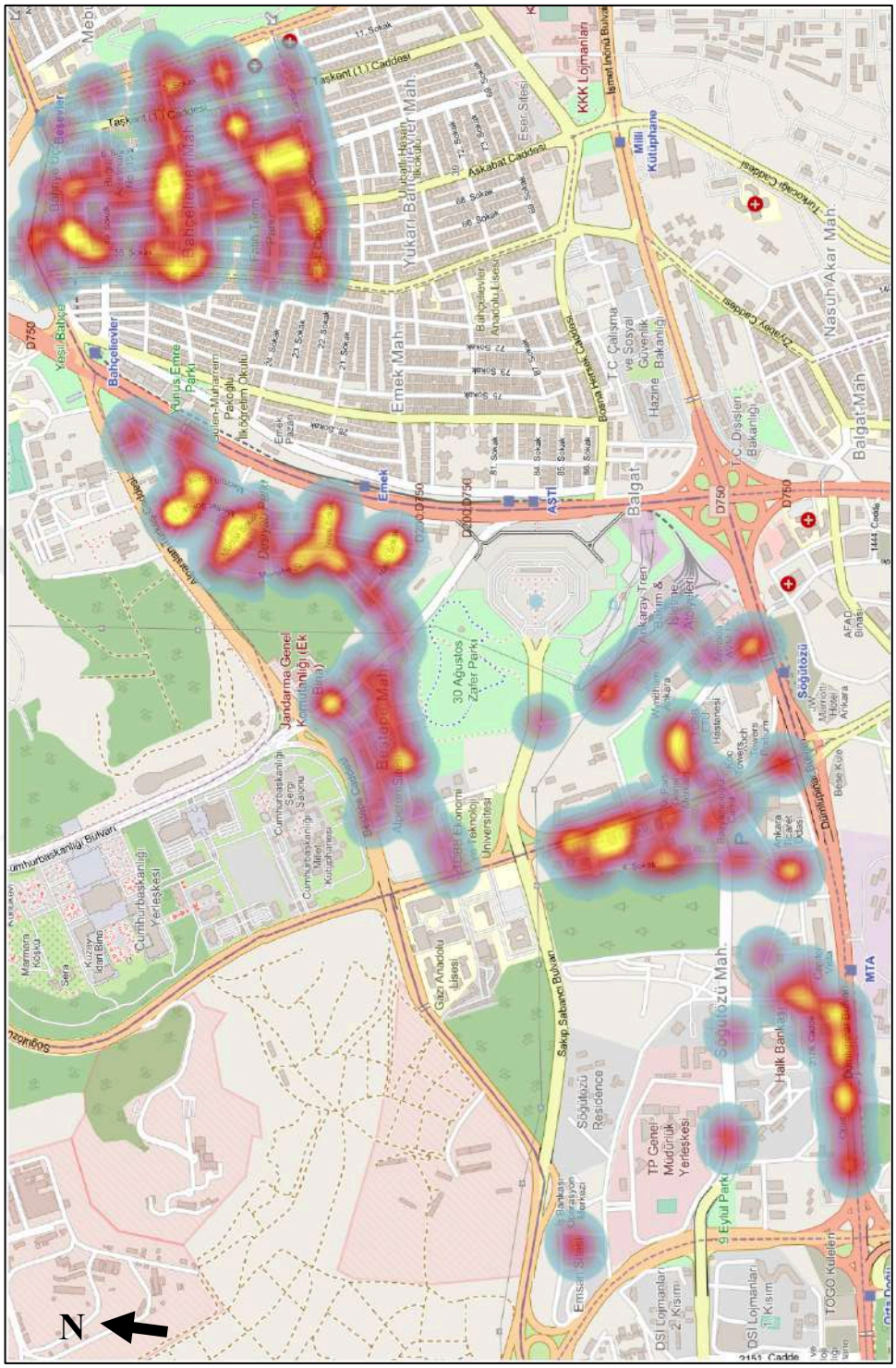


Figure 5.25. Prominent Areas in Accessibility Problems Intensification Mapping by means of Ramps (Produced by the Author Using ArcGIS Online)

Ramp is used as one of the indicators of accessibility for case study analysis as a result of the research carried out about related standards. Sub-parameters under ramp indicator are about:

-questioning existence of ramp where necessary,

-width of ramp,

-slope of ramp,

-surface of ramp,

-ramps at pedestrian crossing.

The following parts aim to elaborate the current condition of above-mentioned parameters with graphs and images from Bahçelievler, Beştepe, Söğütözü and Atatürk Boulevard.

5.1.2.1 Is There a Ramp for the Level Differences Above and Equals to 2cm?

According to the related rules in Turkey, level difference above and equals to 2cm is a barrier against accessibility. In practice, for example, if front wheels of automated and manual wheelchair, wheels of a baby stroller and a walking stick -for a visually impaired person to follow paths as a pre-warning tool- following a route on sidewalk stuck a level-difference barrier, accessibility chain is interrupted. Ramp is a tool to soften those level differences. In case study areas, there are many barriers due to lack of ramp. Figure 5.26 shows a set of graphs about four case study areas whether there is ramp for the level differences 2cm or more. Three options are given for the data collection process: ‘yes, there is a ramp and it is in good condition’, ‘yes, there is a ramp but it is problematic’ and ‘No, there is no ramp where it should be’. In Bahçelievler Neighborhood, on 66% of the points where there should be a ramp, there is a problem of ramp (the percentage is a sum of the ones that it might not exist or be problematic). In the same way, on 87% of the points in Beştepe, 83% in Söğütözü, and 47% in Atatürk Boulevard interrupt accessibility of PRMs. For data

collection, the differentiation was made between the two options, 'yes, but problematic' and 'no, there is no ramp where it should be'; however, in practice, if a barrier exists along with surface and slope problem, it does not really matter whether it exits or not since it cannot be used by PRMs. Among four areas, the part analyzed on Atatürk Boulevard, the core central area in Ankara, makes a bit sense in terms of that more than half of the points -the points requiring ramp- there is a well-working ramp.

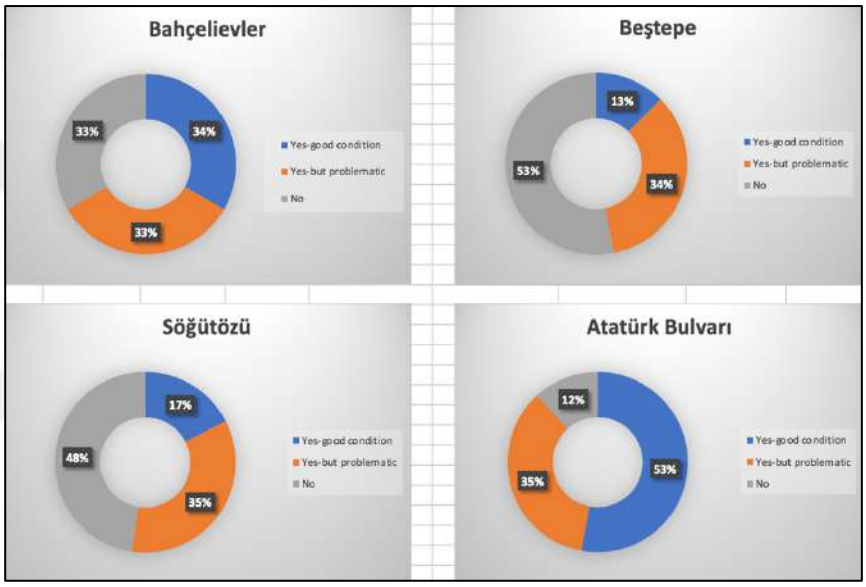


Figure 5.26. Graphs Showing If There is Ramp for the Level Differences 2cm or More

The images mentioned in Figure 5.27 and Figure 5.28 show the problematic points about ramps. The ones in Figure 5.27 are from sidewalk parts that seem as if there is ramp but still having level differences. In other words, the ramp was established but the problem still keeps its existence. On Bahriye Üçok Cd., and Nalan Sk., there is an intention to establish ramp, however question marks are quite obvious when the pass coincides with manhole shaft. On the other two, 52nd Sk. and Mevlana Blv., decent ramps were established, but level differences still exist between the end of ramp and road level.

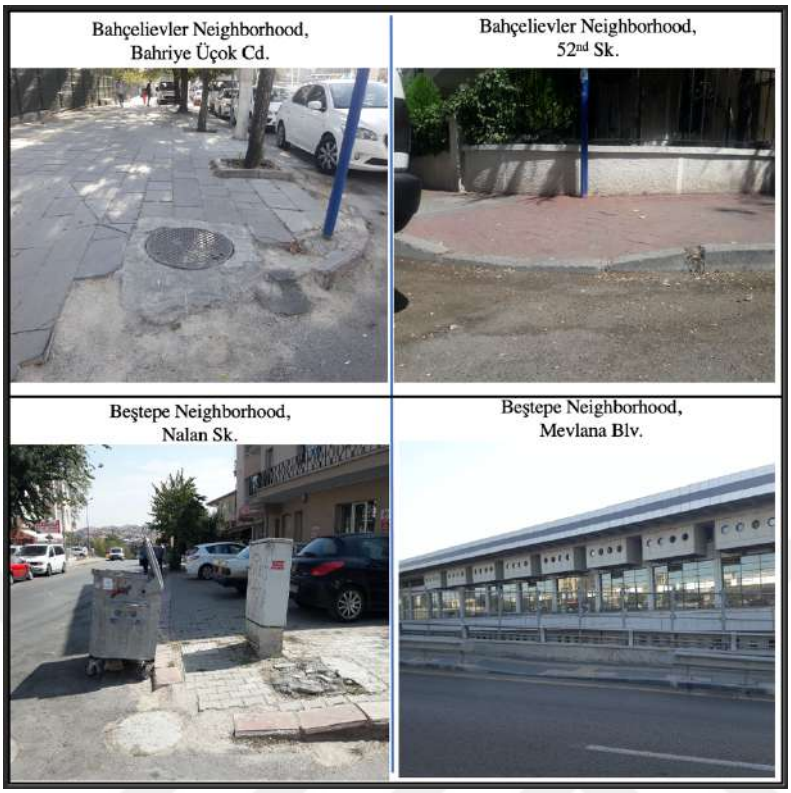


Figure 5.27. Images from Sidewalk Parts that Seem as If there is Ramp but still Having Level Differences (Photographs Taken During Fieldwork)

Figure 5.28 shows some of the points where there should be ramp. Coinciding with manhole shaft again creates problem on Cengizhan Cd., Merhale Cd. and 35th Sk. On 53th Sk., there are two level differences: one is between different levels of sidewalk in itself and the other one is around 3-4cm level difference between sidewalk and road level.



Figure 5.28. Images from Sidewalk Parts Showing that There Is No Ramp (Photographs Taken During Fieldwork)

5.1.2.2 Width of Ramp

It is important to note that ramps will be used extensively by wheelchair users, parents with baby stroller and visually impaired people. Net ramp width needs to be 180 cm allowing two-way pass of two wheelchairs and minimum 90 cm width for one way. Therefore, for data collection, ramps having width between 90cm and 180 cm is accepted as ideal, and ramp width less than 90 cm is an obvious problem since a single wheelchair cannot fit. Besides, ramp width more than 180 cm was also marked as parts of the accessibility problem since it might create loose spaces for the passes between two different levels. According to Figure 5.29, the characteristic of the points that worth to pay a particular attention is the ones having width below 90cm. In this sense, the part analyzed in Atatürk Boulevard is free from any problem ramp width problem as the core city center. However, Bahçelievler, Beştepe and Söğütözü Neighborhoods reveal very close percentages (21%, 23% and 21%

sequentially) for the ramps in which one single wheelchair cannot fit, which makes one fourth of the ramps problematic in three neighborhoods keeping in mind that the percentages (18%, 4% and 6% sequentially) of the ramps having width more than 180cm.

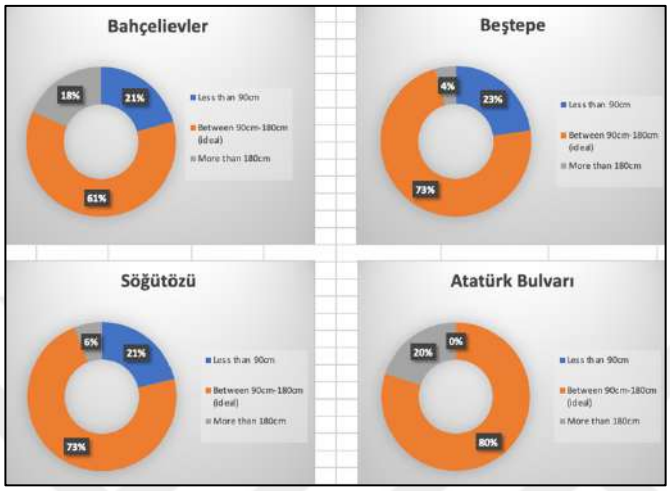


Figure 5.29. Graphs Showing the Current Condition of Ramps in Case Study Areas by means of Width

In Figure 5.30, examples of narrow ramps are seen at the parts of sidewalk on Kasım Gülek Sk. and Dumlupınar Blv. Another view is from 54th Cd. that shows a loose ramp having width above 180 cm in Bahçelievler Neighborhood.



Figure 5.30. Example Images from Wide and Narrow Ramps in Case Study Areas (Photographs Taken During Fieldwork)

5.1.2.3 Slope of Ramp

According to the rules inferred from related standards in Turkey, slope of ramp needs to be maximum 8%. Each four case study areas reveal problematic points of ramps that are impossible for many of PRMs to use. According to Figure 5.31, slope is problematic with 40%, 48%, 35% and 27% in Bahçelievler, Beştepe, Söğütözü Neighborhoods and Atatürk Boulevard sequentially. It is seen, as in other parameters of existence of ramp and width of ramp, ramp slope problem is respectively less on sidewalks of Atatürk Boulevard.

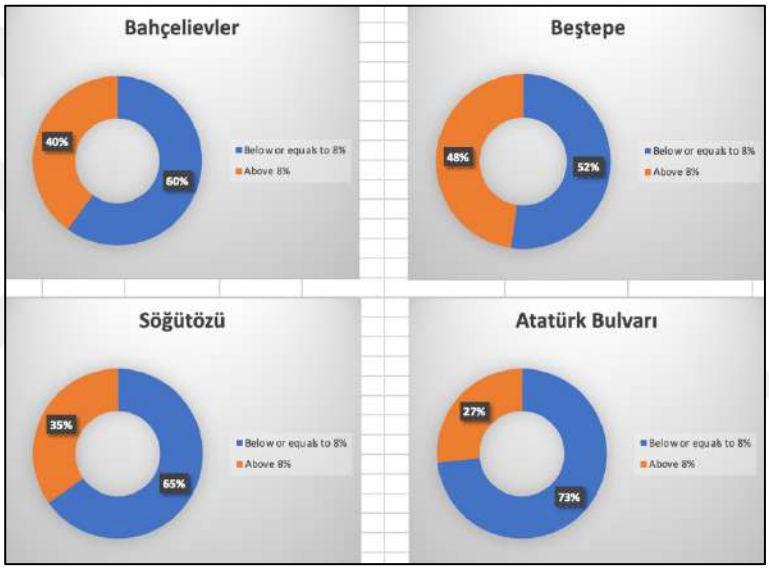


Figure 5.31. Graphs Showing Slope Condition of Ramps in terms of Being Below or above 8%

In Figure 5.32, a set of images show ramps having slope more than 8%. Within these images, it is even impossible to imagine a person with manual wheelchair to go down towards road level or climb towards sidewalk level.



Figure 5.32. Example Images of Problematic Ramps in terms of Slope (Photographs Taken During Fieldwork)

5.1.2.4 Surface of Ramp

Surface of sidewalk ramp needs to be smooth and free from any obstacle that can create barrier to access. Characteristics of ramps in case study areas were entered into software under three categories: smooth (ideal case), not smooth, slippery. In Figure 5.33, the graph shows the percentages of the condition of surface of ramps in four areas. In almost half of the ramps in each area, ramp surface is smooth. However, for example, especially in Beştepe Neighborhood, 59% of the surface of ramps are problematic (52% not smooth and 7% slippery), which corresponds to more than half of the ramps have surface problem in Beştepe. Another remarkable aspect is in Atatürk Boulevard: 38% of the surfaces are slippery that is a serious and prospectively dangerous accessibility barrier for even any able-bodied person visiting that part of city center of Ankara.

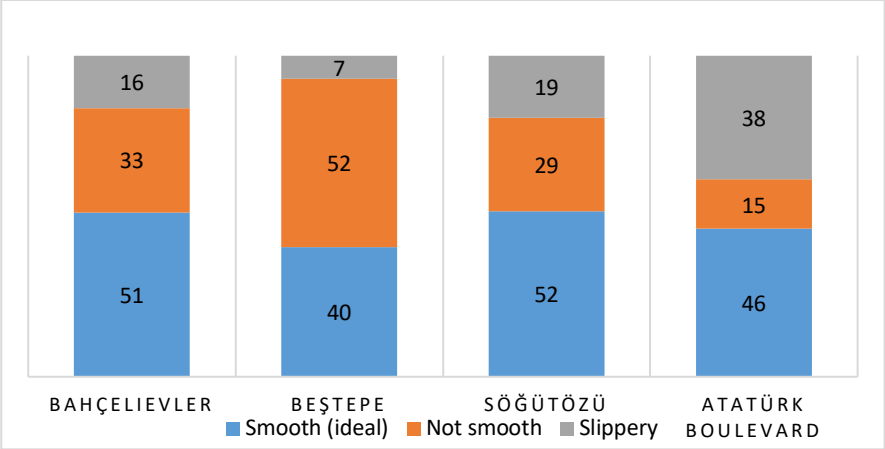


Figure 5.33. A Graph Showing the Percentages of the Condition of Surface of Ramps in Four Areas (%)

Figure 5.34 shows examples of problematic ramp surfaces that most of PRMs could avoid themselves to use. The intention is facilitating accessibility; however, the reality doubles the level of problem in terms of not smooth surfaces of sidewalk ramps.



Figure 5.34. Example Images from Problematic Ramp Surfaces in Case Study Areas (Photographs Taken During Fieldwork)

5.1.2.5 Condition of Ramps at Crossings

Crossings in case study areas in relation with the condition of ramps are separately discussed since intersection of motorized traffic and pedestrian flow is one of the

most critical challenges of accessibility of PRMs. As seen in Figure 5.35, Bahçelievler Neighborhood is relatively in good condition in this respect in which 69% of the ramps are in condition to be easily used by PRMs. On the other hand, crossings are problematic in Beştepe, Söğütözü and Atatürk Boulevard, 63%, 55% and 50% sequentially.

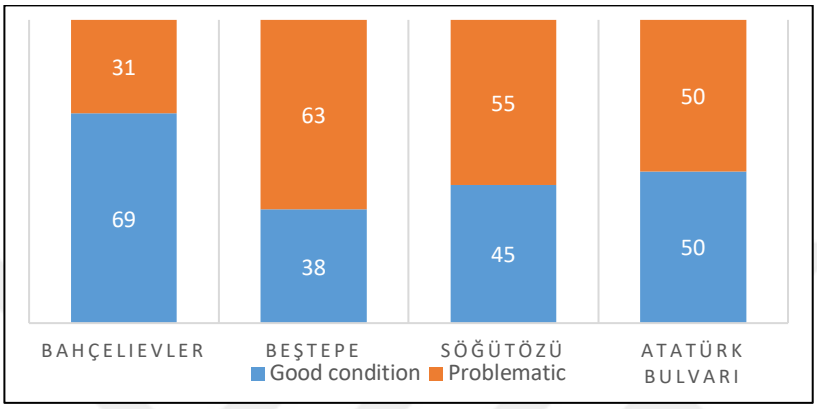


Figure 5.35. Graph Showing the Percentages of the Condition of Ramps at Crossings

Evaluation of crossings show that there are surface and level difference problems in study areas as seen in Figure 5.36.



Figure 5.36. Example Images from Problematic Ramps at Crossings (Photographs Taken During Fieldwork)

As a concluding remark, ramps to connect level differences have considerable problems in terms of not existing ramps where there should be and existing ramps with slope, surface and width problems. Moreover, if there is a deficiency with ramps

on a road, this also discourages PRMs to use parts of sidewalk, which results in PRMs -i.e., people with wheelchair or people with baby stroller- to use side of the road where motorized traffic flow or car parking exists by taking the risk of accident or injury.

5.1.3 Pedestrian Crossing

Crossing is an important node for motorized vehicle as well as pedestrian flow. If a pedestrian route with a certain distance is drawn on a map in Turkey, it is almost impossible to achieve the trip without meeting such nodes. Therefore, it is the first reason that crossing is taken as one of the indicators to fulfill seamless mobility for PRMs; and the second reason is that standards indicate rules for people with disabilities by means of arranging passes for the benefit of disadvantageous groups.

Accessibility analysis under the indicator of pedestrian crossing is divided into several topics. These sub-parameters under pedestrian crossing indicator are about:

-questioning whether there is a barrier to access crossing or not,

-condition of at-grade crossing,

-questioning whether there is a ‘pedestrian crossing’ sign or not,

-visual and hearing features at crossings,

-height of pedestrian pass button and,

-characteristics of pedestrian overpass and underpass

Results of accessibility of pedestrian crossings in Bahçelievler, Beştepe and Söğütözü Neighborhoods and the part studied on Atatürk Boulevard are mentioned with explanations, graphs and images.

5.1.3.1 Barriers to Access Crossing

Accessibility of crossing needs to be free from any barriers in order not for PRMs to be interrupted in achieving their accessibility chain. However, it is remarkably probable to meet a barrier while walking on sidewalk that prevent us to reach crossing. Therefore, barriers to access crossing are investigated in case study areas. Table 5.2 shows the number of barriers detected preventing accessibility of crossings. Keeping in mind that total number of crossings is relatively high in Bahçelievler Neighborhood, the number of barriers in this respect are 23, 17, 8 and 3 in Bahçelievler, Beştepe, Söğütözü Neighborhoods and Atatürk Boulevard sequentially.

Table 5.2. The Number of Barriers Detected Preventing Accessibility of Crossings

	Number of Barriers Met to Access Crossing
Bahçelievler Neighborhood	23
Beştepe Neighborhood	17
Söğütözü Neighborhood	8
Atatürk Boulevard	3

Three types of barriers preventing access crossing were observed in the field visit analysis, which are;

-Structural barriers

-Temporary barriers

-Permanent barriers

Structural barriers are the ones emerged from a mistake made in design, construction or refurbishment process of junction. Figure 55 show two example images from Beştepe and Söğütözü Neighborhoods, two main roads: Söğütözü Cd. and a certain service road lane on Dumlupınar Boulevard. In the first image in Figure 5.37,

pedestrian pass sign and at-grade crossing stripes are seen, but access to crossing is almost completely blocked by a road guardrail, which functions as a component to increase car driving safety in case of accidents. In the other image taken from Dumlupınar Boulevard, no pedestrian ramp was designed on pedestrian crossing that directly works as a barrier for PRMs to get across the road and to reach underground Metro station.



Figure 5.37. Example Images showing Structural Barriers to Access Crossing (Photographs Taken During Fieldwork)

In Figure 5.38, temporary barriers are seen, which means portable or movable objects are frequently located as barriers to access crossing. One of the mostly observed and one of the most significant barriers in this sense is parked vehicles or vehicles waiting red traffic light on a position that prevents PRMs and even any pedestrian aims to get across the road. Keeping in mind that mainstream literature review about accessibility reveals excessive use of cars and the ones driving without following certain rules as a significant problem against accessibility. The image from 54th Cd. shows a minibus passing beyond the waiting line on a signalized junction, which stands as a serious problem of cities in Turkey. In the image from 41st Sk. there is a garbage container right on the route of a pedestrian pass along with fixed bollards and a sign post. On Yaşam Cd. advertising signboards and a street furniture are detected as barriers to get across the road. In the image from 2176th Sk., there are portable bollards on at-grade crossing stripes. Considering those images, it significant to note that those temporary accessibility barriers are results of a lack of

a certain level of consciousness and perception of disability and other persons with reduced mobility.



Figure 5.38. Temporary Barriers to Access Crossing: Vehicles, Garbage Containers, Advertising Signboards, Portable Bollards (Photographs Taken During Fieldwork)

The intended hypothesis addressed for Figure 5.39 is that excessive use of private cars dominates urban mobility pattern of a certain locality, which results in barriers against accessibility. Fixed bollards and some urban furniture elements are used to prevent motorized vehicle access into pedestrian sidewalk since the use of parts of sidewalk as car parking area or occupation of a certain width of sidewalk by cars. Although the intention seems fine to prevent motorized vehicle access into sidewalk, barrier elements used could probably be barriers for accessibility of PRMs to

pedestrian crossing, too. In Figure 64, views from 54th Cd. and Şht. Yavuz Oğuz Sk. in Bahçelievler present good examples for orange bollards preventing car access on that specific part of sidewalk. Similarly, on Sağlık Sk. in Kızılay there is a concrete fixed bollard that narrows down the width of ramp as an undesirable barrier on pedestrian crossing. On Nalan Sk. in Beştepe, urban furniture elements as big concrete flowerpots are used as barriers to prevent car access; however, they also play the role of being barriers preventing accessibility of certain groups of PRMs.



Figure 5.39. Permanent Barriers to Access Crossing: Fixed Bollards and Street Furniture to Prevent Motorized Vehicle Access (Photographs Taken During Fieldwork)

5.1.3.2 Condition of At-grade Crossing Stripes

At-grade crossing is a part of pedestrian crossing marked on the road for pedestrians, with white color as stripes perpendicular to pedestrian flow. Visibility and noticeability of at-grade crossing stripes is important for PRMs to notify them about the exact place of their part of the route while getting across roads. In the content of the fieldwork, condition of at-grade crossings in four areas is processed under sub-headings of: 'in good condition', 'partially disappeared', 'not exist where necessary' and 'providing perpendicular orientation or not'. It can be noted that the main problem stands as the disappearance of at-grade crossing stripes, which can easily be repaired along with a well-structured maintenance program for road facilities. In this respect, Figure 5.40 shows four examples from Bahçelievler, Beştepe and Kızılay.



Figure 5.40. Example Images of At-grade Crossing Parts of Junctions (Photographs Taken During Fieldwork)

5.1.3.3 The Height of Pedestrian Pass Button (if any) at Junctions

Pedestrian pass button at crossing is very useful and essential feature for especially people with physical, visual, hearing impairment, elderly and people with baby stroller since they have special reasoning to cross roads with a slower pace compared to other able-bodied persons. Therefore, the existence as well as height of pedestrian pass button becomes prominent.

Case study analysis shows that current condition is well-improved in terms of the height of pedestrian pass button, and it was noted that pedestrian pass button exists where necessary in Bahçelievler, Beştepe, Söğütözü Neighborhoods and the part of Atatürk Boulevard. Figure 5.41 shows three good practices from Bahçelievler Neighborhood and Atatürk Boulevard.



Figure 5.41. Example Images to Show the Positioning Pedestrian Pass Button (Photographs Taken During Fieldwork)

5.1.3.4 Pedestrian Overpass and Underpass

To discuss current condition of overpasses and underpasses inferred from case study analysis from accessibility point of view, it is necessary to put forth the ontological stance by means of getting across roads. Except from cases of passing highways such as Dumlupınar or Mevlana Boulevards in Ankara, existence of overpass or underpass is not necessarily a favorable solution for pedestrians since it makes the route of PRMs and other able-bodied persons longer and more complex. In addition, existence of an underpass or overpass for pedestrians to get across a local road or street means that dominance of motorized vehicle over pedestrian is pre-accepted. However, walking is the most prior element of urban mobility, and grade crossing needs to be provided in the most efficient manner.

In case study areas, there is no underpass that is specifically used for pedestrians to get across the roads (there are Metro station entrances that have been used as underpasses), and there are a few overpasses connecting Mevlana Boulevard to AŞTİ coach terminal, and both sides of Dumlupınar and Atatürk Boulevards. Considering overpasses for PRMs, use of elevator is the most efficient solution for especially people with wheelchair, having visual impairment, persons with baby stroller and elderly. As seen in Figure 5.42, contemporary overpass and underpass solutions such as the ones connecting AŞTİ coach terminal with Mevlana Boulevard and both sides of Dumlupınar Boulevard were designed by including elevator. On the other hand, old overpass solutions on Atatürk Boulevard are lack of elevators that makes the use of them impossible for some certain group of PRMs. However, even if an elevator exists in contemporary overpass and underpasses, a functional problem is frequently faced that is broken or inactive elevators. In brief, putting this functional problem aside, a differentiation can be clearly made between old and contemporary overpass ad underpasses by means of accessibility of PRMs.



Figure 5.42. Example Views from Overpass and Underpass (Photographs Taken During Fieldwork)

Overpass and underpasses have several dimensions of accessibility. The first one is for entrance and exit. Without such facilities, for example, it is impossible for a person with wheelchair or a parent with baby stroller to use passes without seeking any help. As seen in Figure 5.43, no elevator or platform for people with disabilities is detected for two overpasses/underpasses in Bahçelievler, four in Beştepe, two in Söğütözü and eight in Atatürk Boulevard. It means that if there is no elevator, PRMs need to find another option to get across the road, which would probably result in extension of prospective route and many other challenges with new extended parts of the route.

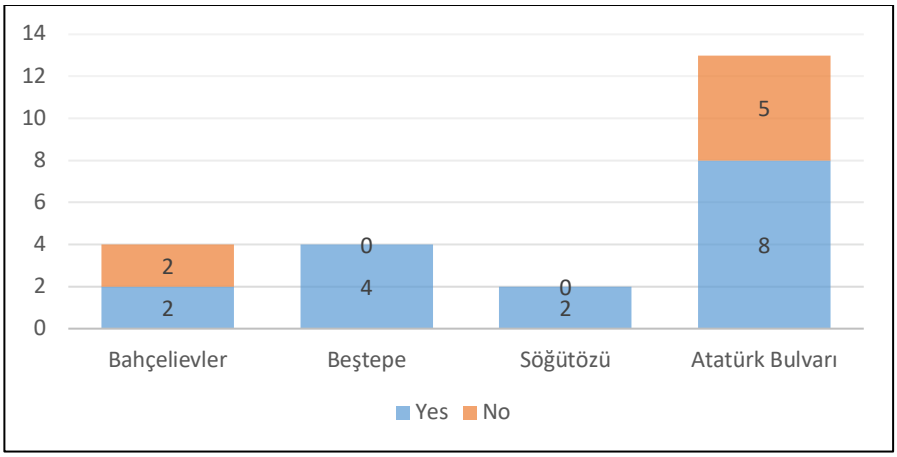


Figure 5.43. Existence of Elevator or Disabled Platform at Overpasses and Underpasses

Only the existence of an elevator or platform is not enough for uninterrupted accessibility. As the second dimension, those passes need to be free from safety problems. Figure 5.44 shows accessibility problems related with overpass and underpasses grouped under four categories: problem with quality of tactile pavement, barriers on tactile pavement preventing access to pass, problems with sidewalk quality, and rainwater drainage on tactile pavement parallel to pedestrian flow direction. All study areas have problems in this sense, particularly, problems with quality of tactile pavement are prominent problems.

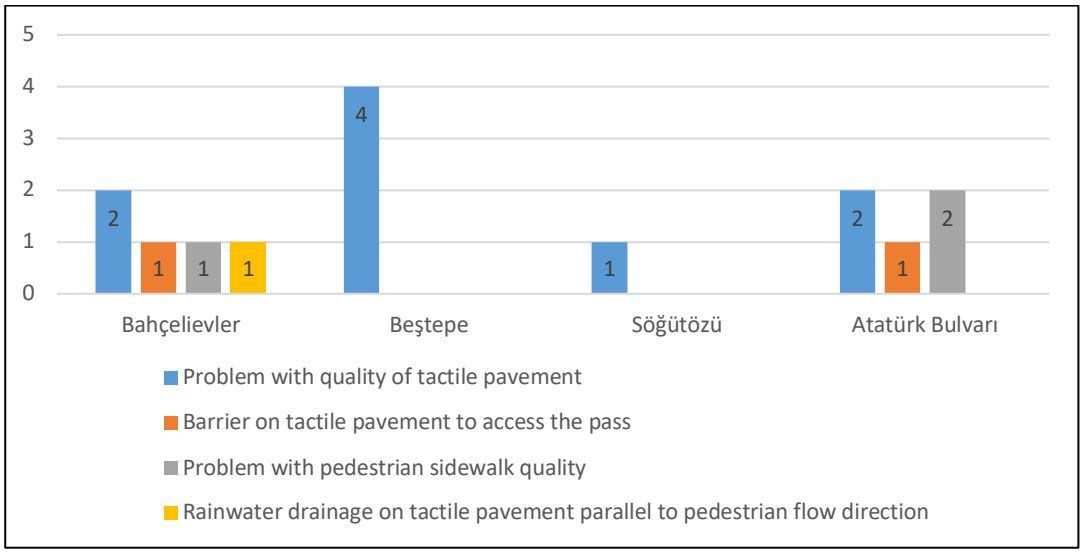


Figure 5.44. Safety Problems for PRMs at Overpasses and Underpasses

Another dimension for underpass and overpasses is that there needs to be a sign mentioning that all people with disabilities can use. As seen in Figure 5.45, two of them in Bahçelievler, three of them in Beştepe and eleven of them in Atatürk Boulevards do not have any sign notifying people about being barrier-free for PRMs

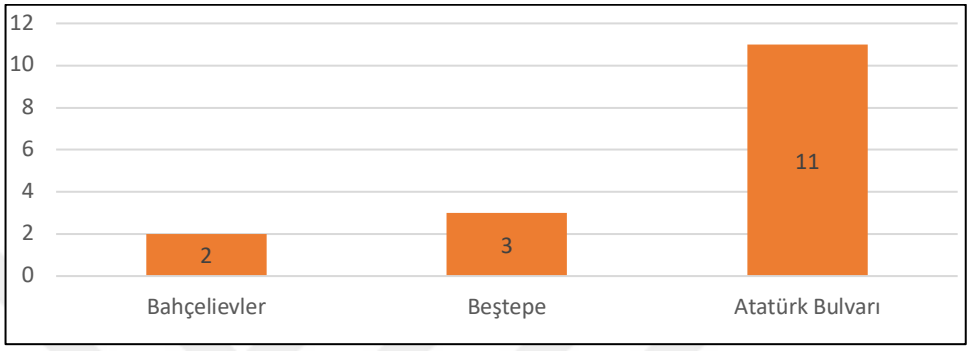


Figure 5.45. Underpasses/Overpasses not Having any sign mentioning that All People with disabilities Can Use

5.1.4 Public Transport

Accessibility of public transport systems has two interrelated dimensions, which are analysis of accessibility of public transport vehicles and analysis of accessibility of public transport stops/stations. Within this research, investigation to be made for vehicles is omitted, which is processed in focus group discussions. Accessibility of public transport systems is analyzed in terms of conformation of bus stop platform height to 20 cm standard, sitting bench at bus stops, space at bus stops for people with wheelchair, braille alphabet info at stops, and voice warning systems at stops. This part focuses more on accessibility of bus stops since entrances of urban rail system stations (Metro and Ankaray stations) have already been analyzed within the scope of the analysis of underpasses. Nevertheless, the analysis of entrances of underground Metro stations is presented over images from the field.

In Ankara, public transport options vary from rail systems (Ankaray Light Rail System and Metro Heavy Rail systems), Telpher to municipally and privately

operated urban buses and Dolmuş. Within four case study areas, there are entrance/exit of Metro and Ankaray bus stops, and Kızılay is the intersection hub of almost all rail systems in Ankara. Figure 5.46 shows images mentioning accessibility of urban rail systems including ramps with ideal surface, slope and width criteria, automatic disabled platform and elevator systems. Case study accessibility analysis shows that there is no problem with the existence of facilities for urban rail systems. However, in practice, there might be temporary operational problems, i.e., barriers preventing accessibility of ramps and broken or not working elevators or automatic disabled platforms.



Figure 5.46. Images from Entrance/Exit of Metro and Ankaray Urban Rail Systems (Photographs Taken During Fieldwork)

Another dimension to be analyzed to get insights for urban public transport systemsis accessibility of bus stops. In this part, it is worth to note that accessibility criteria were applied for bus stops having cover, that occupy a certain amount of space and with ability to host waiting passengers. Table 5.3 shows results of accessibility analysis for bus stops along with the questioning of bus stop platform height, existence of sitting bench, enough space for people with wheelchair to wait, braille alphabet information and voice warning systems.

Table 5.3. Accessibility Analysis of Public Bus Stops[28]

	Does bus stop platform height conform to 20cm standard?		**Sitting bench at bus stop**		**Is there enough space for people with wheelchair to wait?**		**Braille alphabet information at stops**		**Voice warning system at stop**	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Bahçelievler	2	5	7	0	7	0	0	7	0	7
Beştepe	0	3	0	3	3	0	0	3	0	3
Söğütözü	0	6	3	3	3	3	0	6	0	6
Atatürk Boulevard	20	8	28	0	27	1	21	7	0	28

Bus stop platform height is one of the most critical components of accessibility chain since it directly affects quality of the action of getting on and off a bus for PRMs, particularly people with wheelchair, having visual impairment and with baby stroller. 20cm platform height is a standard to remove the level difference between bus stop platform and door of bus, providing that low-floor buses are under operation. Considering case study areas, in the part examined in Kızılay as the core center of Ankara, 71.4% of bus stops conform to 20 cm platform height standard, which stands as a decent percentage comparatively. Bus stops in Beştepe and

[28] Numbers in the table represent the number of bus stops.

Söğütözü Neighborhoods are completely lack of conformation to 20 cm bus stop platform height standard. Therefore, it is not possible for a person with wheelchair to get on a bus without getting help in Beştepe and Söğütözü Neighborhoods. In Bahçelievler Neighborhood, only two of seven bus stops provide easy access to buses on the same level for PRMs.

In terms of the existence of sitting bench at bus stops, as a vital component for especially people with various physical impairment, children and elderly, the part examined in Kızılay on Atatürk Boulevard and the ones in Bahçelievler Neighborhood become prominent with the feature that all bus stops in the area contains sitting bench. In this regard, whilst half of bus stops in Söğütözü contains sitting benches, none of bus stops in Beştepe Neighborhood does not contain any opportunity for passengers to sit while waiting. It can be inferred considering bus stop platform height and sitting bench at bus stops that if spatial intensification of central and business activities increases, ease of the use of bus stops for PRMs increases, too. Areas with a focus on residential uses seem more problematic in this respect.

To ensure quality of accessibility of bus stops, there should also be enough space at bus stops for people with wheelchair to wait. All covered bus stops in Bahçelievler, Beştepe Neighborhoods and Atatürk Boulevard -with one bus stop as exemption- provide space for a wheelchair. In Söğütözü Neighborhood half of covered bus stops space with the related dimensions.

Braille alphabet information and voice warning systems at bus stops aim to make visually impaired people beware of all information necessary for a person to get on a bus, such as departure and arrival time, route map, real time information for the position of buses. In this respect, case study analysis shows that current condition by means of information systems for visually impaired people, which directly affects accessibility, is considerably weak. None of four case study areas provide voice warning/information systems. In Bahçelievler, Beştepe and Söğütözü Neighborhoods none of bus stops have braille alphabet and voice warning systems.

Only 25% of bus stops in the part studied on Atatürk Boulevard provide braille alphabet information plates or stickers for people with visual impairment.

Consequently, current accessibility condition of bus stops contributes the seriousness of the problem of ensuring independent mobility for all as well as disruptions on the links of accessibility chain.

5.1.5 Open and Green Spaces

Urban parks and open spaces as one of the most significant components of human well-being, psychology and social interaction as gathering places and important destination locations of a considerable number of urban trips. As the final indicator for the analysis, accessibility of urban parks in four case study areas were examined. Data were collected from Abdi İpekçi Parkı, 9 Eylül Kurtuluş Parkı, Beştepe Parkı, Desiyab Çocuk Parkı, Kardelen Parkı and Metin Oktay Parkı in Bahçelievler, Söğütözü, Beştepe and Atatürk Boulevard.

Accessibility of open and green areas is analyzed in terms of lighting for main paths in parks, width of main path, slope of main paths, urban furniture as a barrier in parks, position of resting area or sitting bench (on the path/side of the path), frequency of sitting benches, a space to be designed next to sitting bench with at least 1.2m width, and height of tables. The outputs of data collection from parks show that other than two parameters, which are examining position of sitting bench and a 1.2m space next to sitting bench to enable a person with wheelchair to have a rest with other people, inner pedestrian flow areas of parks are accessible.

Figure 5.47 shows an example of view including positive aspects and one negative aspect for accessibility in one of the parks. In Beştepe Çocuk Parkı, surface, width and lightening of main path and frequency and quantity of sitting benches are compatible with what the standards offer. In addition, sitting benches in parks need to be designed in a way that they should be positioned side of the path without interrupting any prospective pedestrian flow. However, the figure shows that

position of sitting benches was designed on the path, which is a negative aspect for accessibility of PRMs in the park.



Figure 5.47. A View from Beştepe Çocuk Parkı (Photographs Taken During Fieldwork)

On the other hand, Figure 5.48 from Metin Oktay Parkı shows sitting benches positioned outside of main path as it needs to be considering the related standards. However, it is impossible for a person with wheelchair to approach next to sitting bench whilst a 1.2m space should be designed next to sitting bench.



Figure 5.48. A View from Metin Oktay Parkı (Photographs Taken During Fieldwork)

Similarly, views from 9 Eylül Parkı in Söğütözü Neighborhood and Abdi İpekçi Parkı in Kızılay show parts of main paths with the positioning of sitting benches. In both images, sitting benches are positioned outside of main path. However, a

minimum 1.2m space for a person with wheelchair is not provided. Moreover, in Abdi İpekçi Parkı, level difference between sitting bench and main path is considerably high (Figure 5.49).



Figure 5.49. Views from 9 Eylül Parkı and Abdi İpekçi Parkı (Photographs Taken During Fieldwork)

Open and green areas in a city represents significant urban public spaces, and there is a fact that public spaces are prominent subjects of the Right to the City. To ensure that public spaces are for the use of all -each single individual in society-, right to access and the Right of Appropriation stand as prior conditions to exercise publicity. Considering the parks analyzed, the flow inside parks and sitting benches have several accessibility barriers. However, above all, one of the most remarkable barrier to exercise such a publicity is that it is even impossible to exercise right to access due to spatial barriers to reach the park.

Consequently, in terms of lighting for main paths in parks, width and slope of main paths, urban furniture as a barrier in parks and frequency of sitting benches are the parameters that any accessibility problem was not detected in research areas. On the other hand, there are considerable accessibility problems by means of the position of sitting benches and the lack of space next to sitting benches for people with wheelchair.

5.2 Concluding Remarks for Spatial Accessibility Analysis

Researcher perspective aims to make inferences as an outer approach towards a problem definition. Researcher perspective is important since it generates results from a more objective perspective under the light of scientific and daily life experiential acquisitions by means of accessibility.

The aim of case study analysis in Ankara is to investigate current accessibility condition of the environment that is associated with any part urban trips of PRMs. A simple but most remarkable inference steps forward at the end of spatial analysis: the current condition of urban space itself plays the role of being barrier against accessibility, which is directly related with deprivation of the Right to the City.

To remind the outputs of international and national publications, analyzed with content analysis in Chapter 4 (Methodology), it was mentioned that people with disabilities face accessibility barriers as the users of pedestrian environment and public transport that have significant impacts on social and psychological well-being and quality of life. Accordingly, the results of spatial accessibility analysis of the thesis correspond to similar issues as accessibility barriers by means of sidewalk, ramps, crossings, public transport, and parks. In brief, the analysis over selected case study areas stated that there are fundamental spatial barriers to exercise right to access for all.

Before presenting final table and mapping items of spatial accessibility analysis, it is noteworthy to remind initial research sub-questions to fit conclusive discussions into initial research pathway. The questions below will be answered at the end of this part:

- Are there spatial accessibility barriers in Turkey? If yes, what is spatial accessibility level?
- Do the spatial accessibility barriers prevent PRMs to ensure their right to access?
- Is car dependency an accessibility barrier for PRMs to ensure their right to access?

- Can accessibility be related with urban land-use structure, socio-economic status, and service of urban rail systems?

In spatial case study analysis in Bahçelievler, Beştepe, Söğütözü Neighborhoods and a specific part on Atatürk Boulevard as a central sample, locational accessibility data were collected through GIS and analyzed under specific indicators obtained from national standards and legislation. Presentation and synthesis of numerical accessibility data have been done with graphs, tables, mapping supported by example images from the field.

One of the main objectives of this thesis is establishing a relationship between the concepts of the Right to the City and accessibility. As it has been hypothesized that 'right to access is a right for all', spatial case study analysis in Ankara justified that any accessibility deficiency on urban space is a breakage on a specific link of any prospective accessibility chain. Therefore, the ultimate goal could be reaching seamless mobility for all -for specifically PRMs. However, spatial accessibility analysis in Ankara have manifested that there are remarkably urgent accessibility problems in the city for PRMs.

As a final synthesis of outputs of spatial accessibility analysis, Table 19 shows what to be inferred for urban accessibility by means of case areas and of indicators. First two columns in the table show five accessibility indicators and their related sub-parameters. The numbers and different colors in the table represents scores of each accessibility parameter (such as width of sidewalk or slope of ramp) according to case areas (such as Bahçelievler or Atatürk Boulevard). the reason of the use of coloring is simplifying demonstration of intensification of accessibility levels. Scoring was done under four different accessibility levels, which are explained as below:

- Strong → gets 4 points; represented with dark green,
- Room for improvement → gets 3 points; represented with light green,
- Weak → gets 2 points; represented with yellow and,

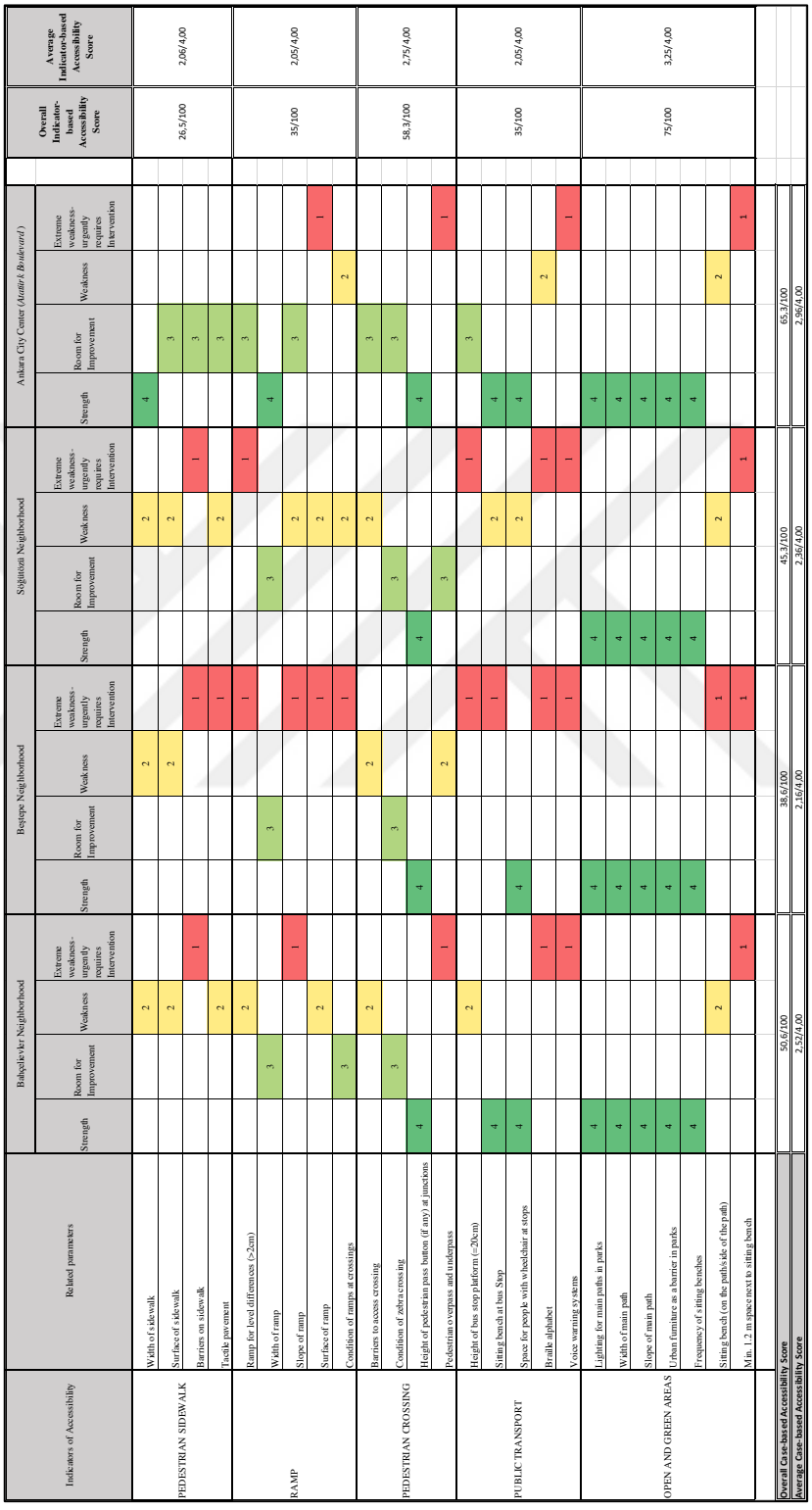
- Extremely weak-urgently requires intervention → gets 1 point; represented red color.

Several examples to help reading the table are;

- In terms of existence of barriers on sidewalk in Bahçelievler Neighborhood, an extreme weakness was observed and an urgent intervention is required (this parameter gets the lowest point: only 1),
- In terms of height of bus stop platforms in Söğütözü Neighborhood, an extreme weakness was observed and an urgent intervention is required (this parameter gets the lowest point: only 1),
- In terms of existence of urban furniture as a barrier in parks in Beştepe Neighborhood, a strength was observed that means the condition is decent in this sense (this parameter gets the highest point: 4 points).

In Table 5.4, in addition to accessibility level scores of each parameter related with each case study area, last two rows and last two columns represent overall and average accessibility scores. For example, if coloumns are followed, overall accessibility score of Bahçelievler Neighborhood is 50.6 points out of 100. And if rows are followed, pedestrian sidewalk indicator gets 26,5 out of 100 for the entire accessibility analysis.

Table 5.4. Conclusive Analysis Showing Ultimate Accessibility Condition in Case Study Areas Associated with Accessibility Indicators as well as Related Parameters



Indicators of Accessibility	Related parameters	Balçeşmeler Neighborhood				Beştepe Neighborhood				Söğütözü Neighborhood				Ankara City Center (*Atatürk Boulevard*)				Overall Indicator-based Accessibility Score	Average Indicator-based Accessibility Score
		Strength	Room for Improvement	Weakness	Extreme weakness - urgently requires Intervention	Strength	Room for Improvement	Weakness	Extreme weakness - urgently requires Intervention	Strength	Room for Improvement	Weakness	Extreme weakness - urgently requires Intervention	Strength	Room for Improvement	Weakness	Extreme weakness - urgently requires Intervention		
PEDESTRIAN SIDEWALK	Width of sidewalk			2				2				2		4				26,5/100	2,06/4,00
	Surface of sidewalk			2				2				2			3				
	Barriers on sidewalk				1				1				1		3				
	Tactile pavement			2					1			2			3				
RAMP	Ramp for level differences (>2cm)			2					1				1		3			35/100	2,05/4,00
	Width of ramp		3				3				3			4					
	Slope of ramp				1				1			2			3				
	Surface of ramp			2					1			2					1		
	Condition of ramps at crossings		3						1			2				2			
PEDESTRIAN CROSSING	Barriers to access crossing			2				2				2			3			58,3/100	2,75/4,00
	Condition of zebra crossing		3				3				3				3				
	Height of pedestrian pass button (if any) at junctions	4				4				4				4					
	Pedestrian overpass and underpass				1			2			3						1		
PUBLIC TRANSPORT	Height of bus stop platform (~20cm)			2					1				1		3			35/100	2,05/4,00
	Sitting bench at bus Stop	4							1			2		4					
	Space for people with wheelchair at stops	4				4						2		4					
	Braille alphabet				1				1				1			2			
	Voice warning systems				1				1				1				1		
OPEN AND GREEN AREAS	Lighting for main paths in parks	4				4				4				4				75/100	3,25/4,00
	Width of main path	4				4				4				4					
	Slope of main path	4				4				4				4					
	Urban furniture as a barrier in parks	4				4				4				4					
	Frequency of sitting benches	4				4				4				4					
	Sitting bench (on the path/side of the path)			2					1				1			2			
	Min. 1.2 m space next to sitting bench				1				1				1				1		
Overall Case-based Accessibility Score		50,6/100				38,6/100				45,3/100				65,3/100					
Average Case-based Accessibility Score		2,52/4,00				2,16/4,00				2,36/4,00				2,96/4,00					

Table 24 as an ultimate synthesis of spatial accessibility analysis puts forth remarkably significant results for the problem definition process on urban space. First of all, it is necessary to take a quick glance to the table from a very simplistic manner: the meaning of colors tells something. In the table, seeing intensification dark and light green means that positive accessibility insights can be obtained; on the other hand, intensification of yellow and red colors implies inaccessible urban space. Three main inferences emerge in the sense of colors:

- Green color is clearly intensified on the cells representing open and green areas since parks in case study areas are accessible for PRMs in terms of lighting, width, slope, barriers and frequency of sitting benches. Scores in this sense supports the positive scenario: at the end of 'open and green areas' row, overall indicator-based accessibility score is 75 (out of 100) and average indicator-based accessibility score is 3,25 (out of 4,00), meaning there is a potential room for improvement in parks.
- Another positive scenario emerges by looking at 'Ankara city center' column. Dark and light green cells intensify for all indicators in this area, which results in 65,3 (out of 100) as overall case-based accessibility score and 2,96 (out of 4,00) as the average score that almost means room for improvement category. Accessibility result of sample part studied on Atatürk Boulevard in city center means that this area is set apart from other three neighborhoods by means of the fact that physical interventions on urban space in city center put considerable effort to consider accessibility aspects of urban planning and design.
- Third inference represents negative accessibility scenario. Considering the table, yellow and especially red cells -meaning 'weak' and 'extremely weak' respectively- intensify Bahçelievler, Beştepe and Söğütözü Neighborhoods for accessibility indicators of pedestrian sidewalk, ramp, pedestrian crossing and public transport. In other words, current accessibility is considerably weak in three neighborhoods except parks and PRMs seem to experience extreme difficulties to go from one place to another because of inaccessible

urban fabric. The scores at the end of 'Bahçelievler', 'Beştepe' and 'Söğütözü' columns support this argument. Bahçelievler gets 56,6 points, Beştepe gets 38,6 points and Söğütözü gets 45,3 points out of 100 in terms of case-based accessibility. Moreover, Bahçelievler gets 2,52 points, Beştepe gets 2,16 points and Söğütözü gets 2,36 points out of 4 meaning that accessibility of urban environment all three neighborhoods is on weakness level.

Among all case study areas in comparison with each other, the part studied on Atatürk Boulevard in city center reveals the most accessible and Beştepe Neighborhood reveals the least accessible result. Once land use characteristics of these two study areas and the results inferred from spatial accessibility analysis are considered together, another specific conclusive synthesis outcome can be inferred. As it will be seen in the following maps showing inaccessible points, spatial accessibility problems intensify on old residential part of Beştepe, and Atatürk Boulevard is composed of on-street commercial activities. Therefore, it can be inferred that when the number of on-street commercial activities increases as in city centers, accessibility level increases, too. On the contrary, pedestrian sidewalk of the areas where residential use intensifies -especially with old residential buildings- is composed of physical accessibility barriers making the life harder for PRMs to achieve their accessibility chains.

Although it cannot be counted within the category of physical accessibility problems, dominance of motorized vehicles on roads even on sidewalk directly affects the quality and quantity of successful accessible urban mobility trips of PRMs. During field research, many motorized vehicles were detected occupying sidewalk for car parking, parked cars in front of ramps and waiting vehicles right on car flow crossing. In addition to these direct occupation of private vehicles into the area designated to pedestrian mobility, an indirect but one of the most remarkable problems inferred as the fact that roads are assumed to be left to the dominance of motorized vehicles. As a result of case study analysis, it has emerged that roads are wide and sidewalks are narrow to facilitate urban travels and vehicle speed at its maximum as much as

possible. Therefore, PRMs, and even able-bodied pedestrians, try to manage to go from one place to another; in other words, a simple walking trip might be transformed into a kind of survival of the fittest to go shopping, to work, park or just walking action as a leisure time activity by itself.

In addition to considerable results obtained from conclusive accessibility synthesis table with scores, ultimate GIS mapping demonstrations support seriousness level of spatial accessibility problems by displaying red inaccessibility dots on four maps of four case study areas and an overall intensification map. To create those maps, data filtering was set for the maps to show only problematic areas in ArcGIS Online.

In Figure 5.50, inaccessible points are seen with respect to any of five parameters (sidewalk, ramps etc.) for Bahçelievler Neighborhood. Bahçelievler is generally composed of main roads in north-south direction and of streets in east-west direction. Red dots reveal a continuity for some of main roads in Bahçelievler. Moreover, this continuity lasts especially within old Bahçelievler Neighborhood, which is very first Bahçelievler designed by Jansen in 1930s framed by Kazakistan Cd. in the west, Prof. Muammer Aksoy Cd. in the east, 54. Cd. in the south and Bahriye Üçok Cd. in the north.

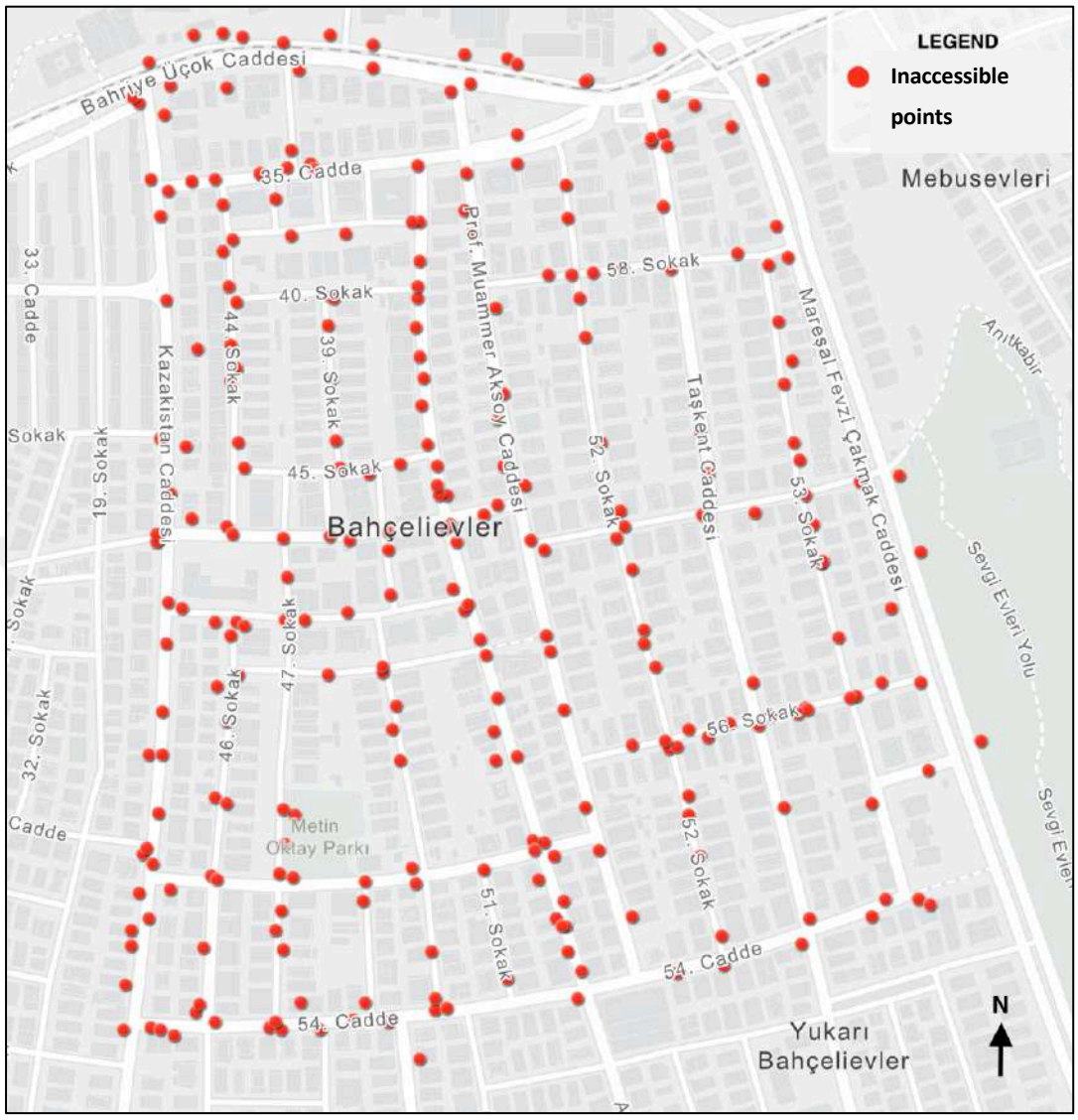


Figure 5.50. A Map Showing Points with Accessibility Barriers in Bahçelievler Neighborhood (Produced by the Author Using ArcGIS Online)

In Figure 5.51, points with accessibility problems in Beştepe Neighborhood are seen. Red dots on the map seems to spread harmoniously except for the northeast part. Intensification of residential areas in the neighborhood is seen as new prestigious gated communities on the northwest of the area and old Beştepe settlement with old residential apartment blocks on the northeast of the area. Therefore, it is clearly seen that it is almost impossible for PRMs to move from one place to another on almost none of the main roads and streets. To illustrate how significant accessibility

problematic is, it is simply enough to imagine a person with a baby stroller trying to reach AŞTİ coach terminal starting from northeast edge of the area on foot. The result would be impossible by walking, but surely success by private car or taxi. The problem that motorized vehicles own mobility priority rather than pedestrians is clearly visible in Beştepe Neighborhood.

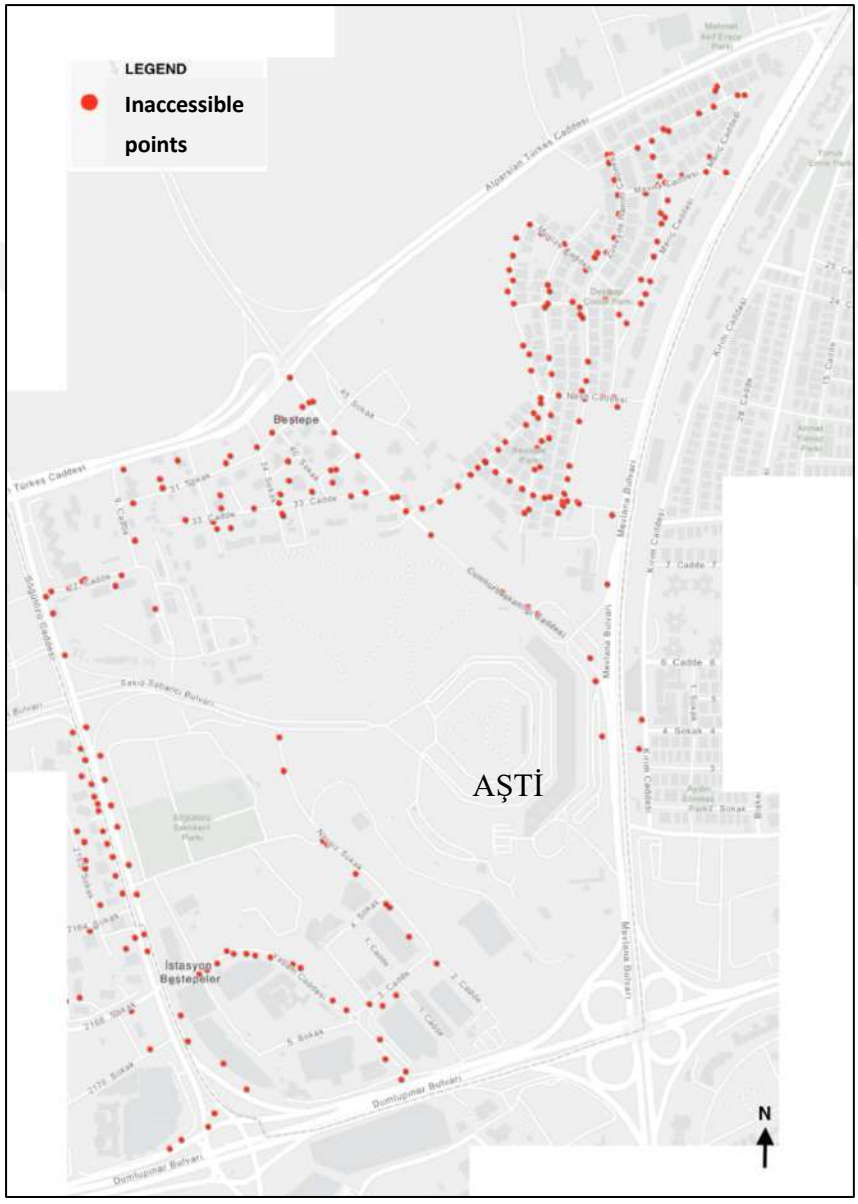


Figure 5.51. A Map Showing Points with Accessibility Barriers in Beştepe Neighborhood (Produced by the Author Using ArcGIS Online)

In Figure 5.52, inaccessible points in Söğütözü Neighborhood are seen with red dots. A homogenous distribution of points is observable except the northeast part, which is mostly composed of old high-rise residential housing clusters. Dominance of motorized vehicles is similarly observable in Söğütözü.

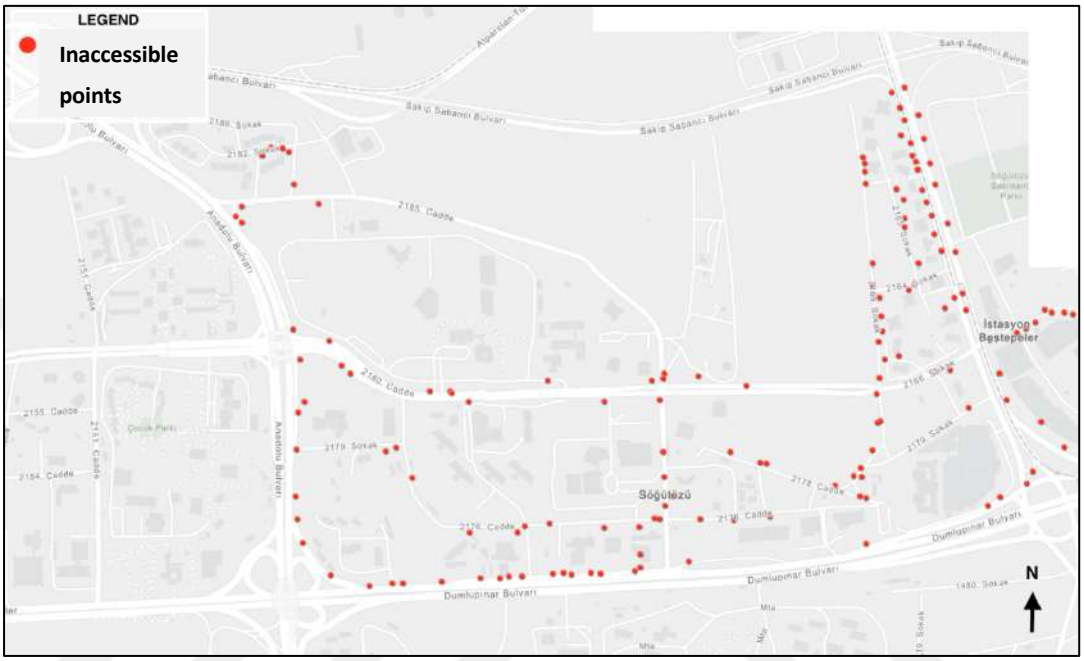


Figure 5.52. A Map Showing Points with Accessibility Problems in Söğütözü Neighborhood (Produced by the Author Using ArcGIS Online)

Figure 5.53 shows inaccessible points on research area in Kızılay. Atatürk Boulevard constitutes the spine of central core of Ankara that have wide and more accessible sidewalk structure as well as the most accessible case study area compared to other three areas. The reason of intensification of red dots in the middle of line is that the weakest parameters in terms of accessibility are lack of voice warning and braille alphabet information systems at bus stops and problems with pedestrian overpass and underpasses. The area where red dots intensify on Atatürk Boulevard is also the area where bus stops and Metro entrances/exists -namely pedestrian underpasses- intensify. However, it is inferred from synthesis spatial accessibility analysis table that Atatürk Boulevard is the part of city center that is highly considered by local policy-makers with respect to accessibility.

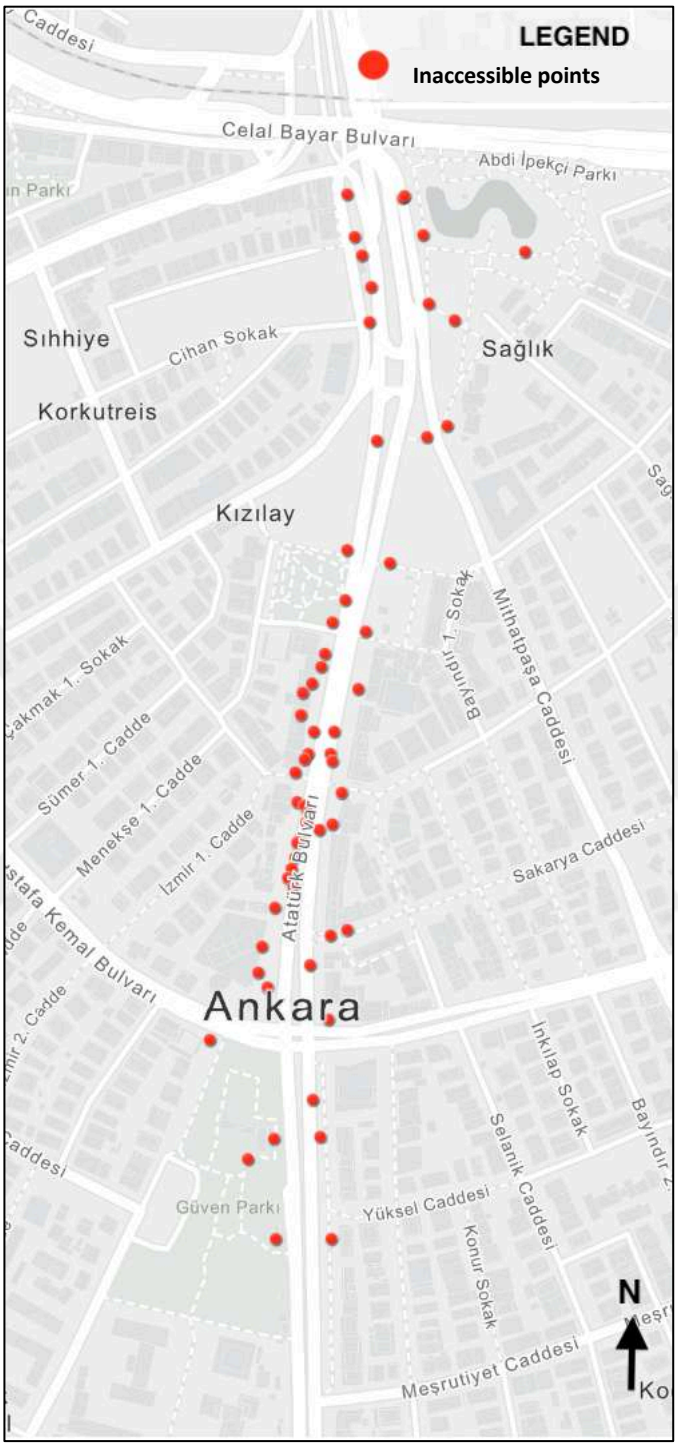


Figure 5.53. A Map Showing Points with Accessibility Barriers on the Part of Atatürk Boulevard Analyzed as A Sample from Ankara City Center (Produced by the Author Using ArcGIS Online)

As the final spatial analysis, it is meaningful to show all four case study areas as a whole enabling observation of where inaccessible points in urban space intensify. In Figure 5.54, the first thing to take attention at first glance is the intensification of points in old Bahçelievler settlement, old Beştepe settlement, old housing clusters in Söğütözü on 'Söğütözü Boulevard') and a specific part on Atatürk Boulevard. The reasoning of inaccessible point intensification has already been explained in previous map with the intensification of bus stops and pedestrian underpasses for Atatürk Boulevard. However, the inference gathered for old housing settlements in Bahçelievler, Beştepe and Söğütözü Neighborhood becomes prominent. Whilst inaccessible part in Bahçelievler seen on the map in Figure 79 is composed of old urban fabric that also hosts one of the mostly visited commercial uses of Ankara, inaccessible part in Beştepe and Söğütözü seen on the map are almost completely composed only of residential uses. Therefore, the ultimate inference in this sense could be made as that there might be direct relation between old built environment along with old urban fabric (sidewalk, road and crossing structure) and inaccessibility. It might be noted that the more the built environment setting is old, the more inaccessible the area is.

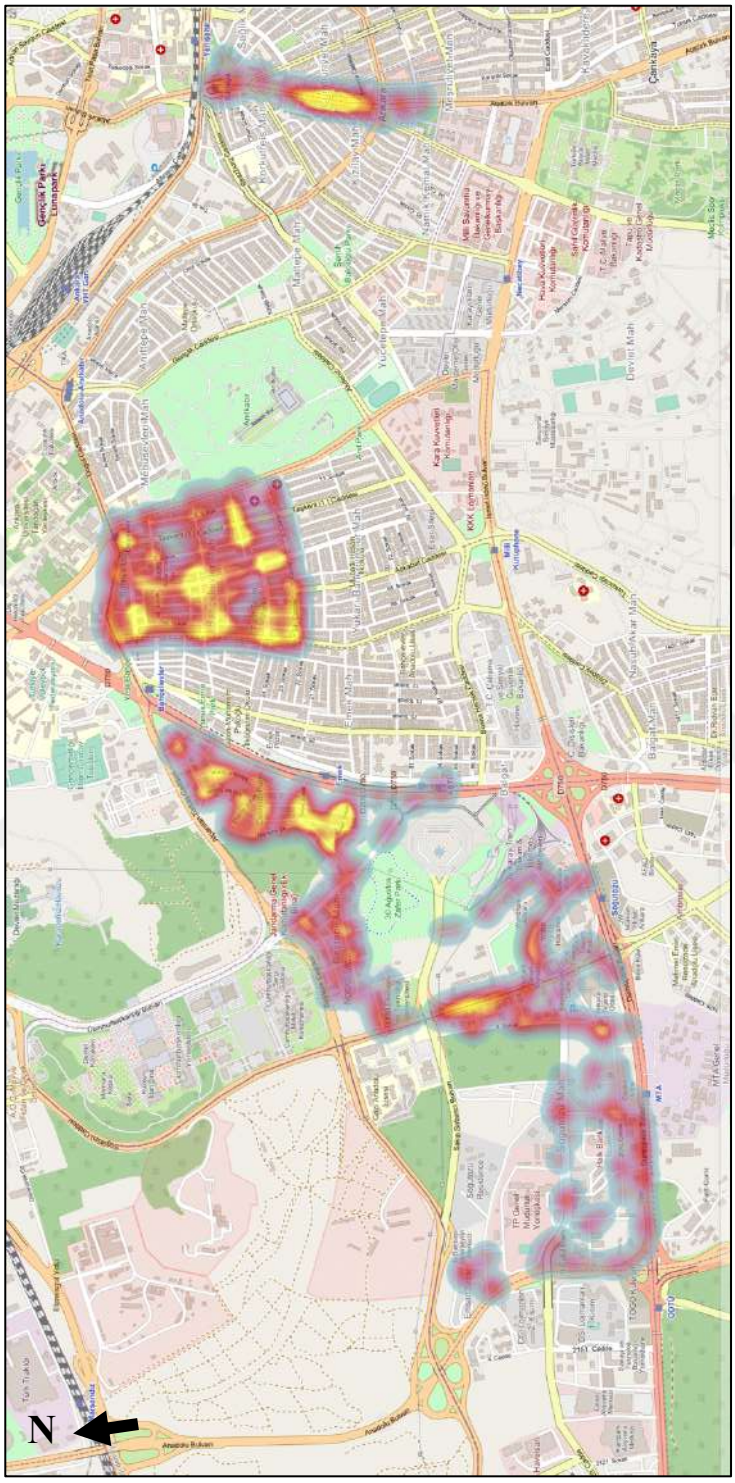


Figure 5.54. A Map Showing the Intensification of Barriers in Four Case Study Areas (Produced by the Author Using ArcGIS Online)

For the other areas, there are plenty of homogenously distributed inaccessible points preventing PRMs even to go out of their home. For PRMs, right to access is one of the most prior parts of their right to access. However, outside environment could seem to be risky since dominance of car in urban mobility is pre-accepted by all and it is almost impossible to achieve even a simple travel in outside environment, and home could seem to be the safest and trustable place. The spatial accessibility case study research contributes the proof of this argument in a way that not even a single disabled person is seen during data collection walks in four areas. Besides, the argument that most of people with disabilities try not to prefer to go out except essential needs requiring travels has also been supported by outputs of focus group discussions that is processed in the next chapter.

In summary, researcher perspective defines accessibility problem from a comprehensive outlook supported by experiences and synthesis of academic outputs. GIS mapping and data synthesizing tool has given the opportunity to challenge with accessibility problem under certain indicators and to conclude understandable results to define accessibility problem. Researcher perspective notes that accessibility is a remarkable problem for PRMs and barriers against an accessible city prevents PRMs to obtain their right to access through their independent mobility. In addition to results obtained from GIS analysis, one significant point affecting accessibility level of an urban fabric is car dominant urban mobility structure. Investigation for the analysis of accessibility in Ankara has not numerically or statistically stated the problem in a direct manner. However, observation in field analysis has clearly proved that excessive car use demand in especially central areas and parking problem emerged accordingly, road structure prioritizing cars leaving narrow and problematic sidewalks and crossings to pedestrians are the sources of the relationship between car dependency and accessibility. Besides, slight inferences have been made for land use structure and socio-economic level in relation with accessibility level of different areas. Finally, not a clear determination could be made for urban rail stations and differentiating accessibility levels.

CHAPTER 6

ACCESSIBILITY ANALYSIS FROM USER PERSPECTIVE THROUGH FOCUS GROUP DISCUSSIONS IN ANKARA

Analysis of user perspective is a reasonable way to extract real opinions of PRMs that have been affected from daily-life consequences of accessibility policies of local governments -as direct implementing authority of accessibility facilities in cities- and central government -as national legislative authority regarding walking environment and transport in general-. User perspective reveals differentiated and more sophisticated outputs of personal opinions of PRMs compared to researcher perspective. Therefore, the thesis is structured upon user perspective in terms of accessibility of urban space supported by researcher perspective. This chapter presents the results of focus group discussions in detail under three different aspects, which are spatial, societal, and administrative.

6.1 Results of User Perspective Analysis through Focus Group Discussions

There is an important fact revealed from the analysis of focus group discussions. There are not only physical/spatial problems, but a sophisticated problem definition is required as a complex set of processes intertwined with physical problems. Focus group meeting participants categorize the accessibility problem definition under 3 different but also interrelated aspects, which are spatial, social and administrative aspects. In addition, the definition of the Right to the City and its sub-concepts, independent mobility and accessibility, which were defined in the literature review, were also obtained from the analysis of outputs of focus group discussions represented as the user perspective in the conclusion chapter of the research.

Outputs of focus group discussions are examined under two main headings: accessibility problem definition with respect to spatial, social and administrative aspects and analysis of accessibility concept by means of the right to access (outputs of user perspective about right to access are examined in conclusion chapter). Analysis upon these two aspects gives a comprehensive problem definition of accessibility from user perspective. Firstly, a quick picture of the results of focus group discussions will be presented considering the contributions of all participants. Later on, user perspective will be analyzed by means of spatial, social and administrative barriers.

6.1.1 A Statistical Summary Picture of Focus Group Discussions

Focus group discussions represent user perspective in the context of the research. Each sentence of each single participant was analyzed in detail and grouped under three aspects as spatial, societal and administrative barriers. Before in-depth analysis, it is reasonable to present what user perspective proposes compatible with the previous spatial accessibility analysis in Ankara. Questions of focus group discussions are divided into two main categories: the first one is spatial accessibility questions and the second one is questions to open discussions related with social, administrative and right-based context of accessibility. Since the second group of questions are open-ended type, they will only be analyzed in the following sections. However, there have been reasonings behind asking the questions of the first category -spatial accessibility questions- also to users as correspondent spatial accessibility ones had already been asked directly to urban space in previous chapter. The aim was questioning a correlation between researcher perspective and user perspective, and obtaining spatial accessibility opinions of users through these warming up questions. First ten questions of focus group discussions represent the first category as spatial questions, which are examined to constitute a numerical summary of the introduction of this chapter.

The first question is a general one, directly asking what the accessibility barriers are as pedestrians and public transport users. The possible answer set in formed by spatial accessibility analysis GIS data collection questions as well as standards and related regulation. As seen in Figure 6.1, user perspective clearly states that the prominent ones are surface quality of sidewalk, barriers on sidewalk, problems related with ramps and accessibility barriers about bus stops and buses. All these barriers will also be associated with societal and administrative aspects of accessibility in further sections.

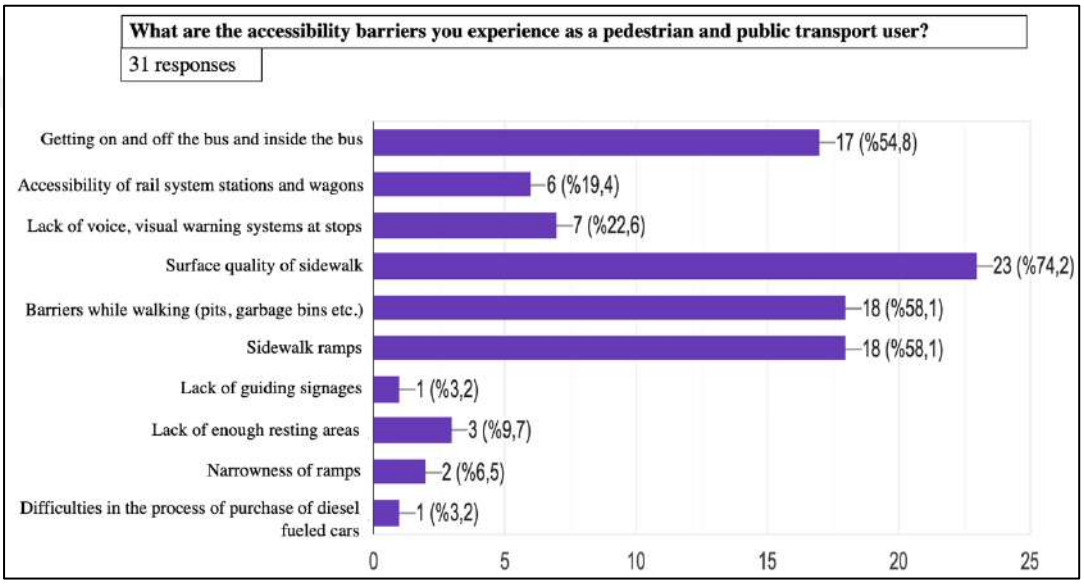


Figure 6.1. What the Accessibility Barriers Are as Pedestrians and Public Transport Users

The second question aimed to obtain a perception of the city they live in in terms of what the level of accessibility currently is. In other words, the question examines whether they think they live in an accessible city or not. As seen in Figure 6.2, according to their perspective, 27 participant of the total 31 scored Ankara as 3 points and 2 points that means participants have serious doubts about spatial accessibility of their city. As a reverse reading, only 1 participant gives 4 points whilst none of the participants preferred to give 5 points to Ankara.

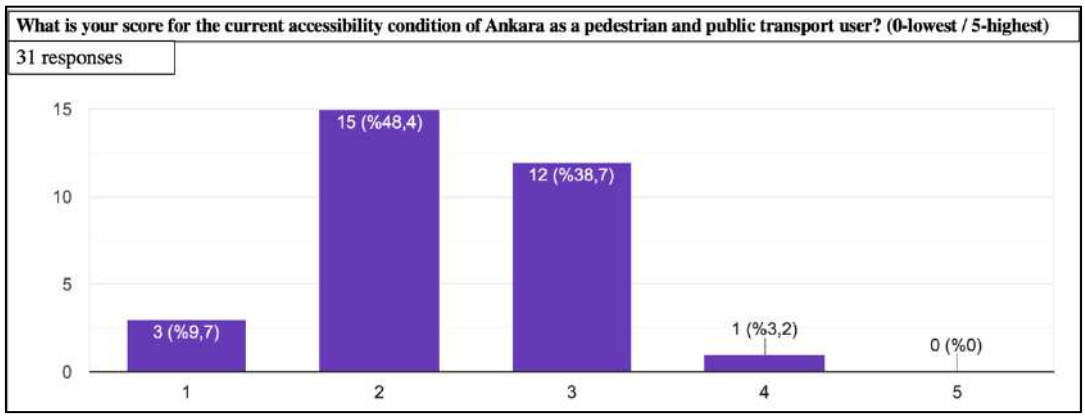


Figure 6.2. Current Accessibility Condition of Ankara by Scoring

The third question, which is the one diagnosing an obvious accessibility problem in Ankara, is about whether they need to use road level instead of sidewalk. Other than one single participant, almost all of them stated that they use road level. Those answers imply that despite the risk of vehicular traffic, they prefer to get rid of the risks that they might probably face on sidewalk (Figure 6.3).

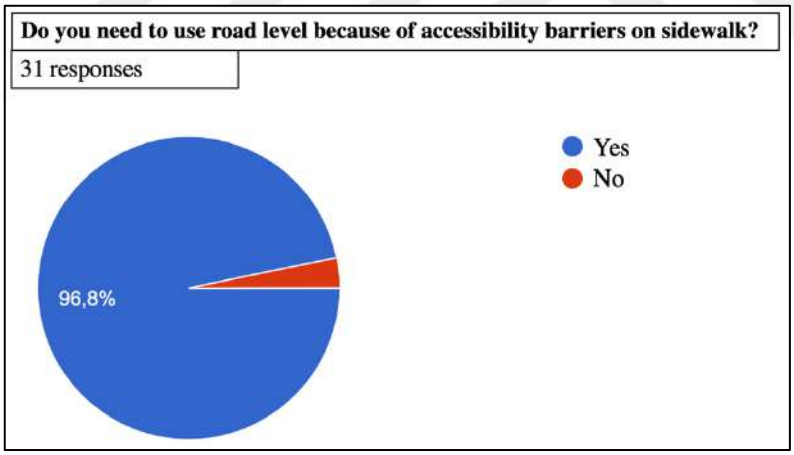


Figure 6.3. The Percentage of the Use of Road Level Rather than Sidewalk

In the fourth question, types of barriers that they face on sidewalk are asked. 77.4% of all selections was made for level differences and deformation of surface of sidewalk. Apart from the choice of lack of ramps, the other four selection have close percentages to each other, which are barriers on sidewalk, cars parking on sidewalk, narrowness and height. Different from spatial accessibility case study analysis

carried out in four cases in Ankara, this question reveals cars as a significant accessibility barrier (Figure 6.4).

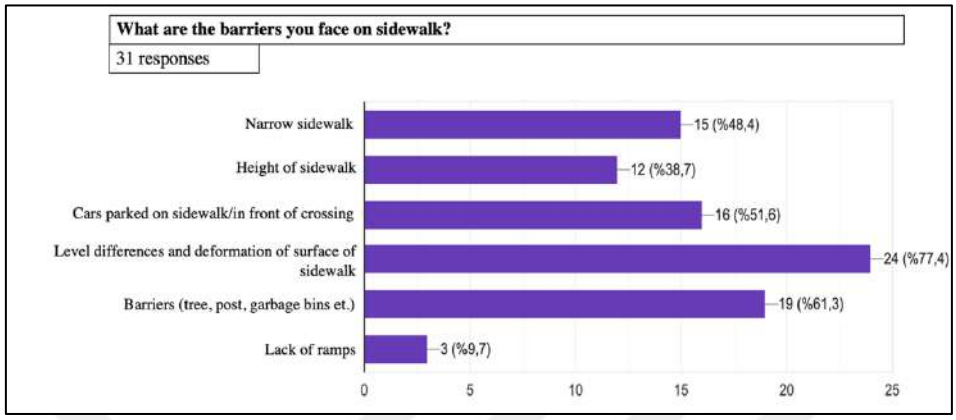


Figure 6.4. Barriers on Sidewalk from User Perspective

The fifth question is about accessibility of crossing. Participants think that the most problematic part of crossings is the problems with ramps connecting sidewalks at two sides of road, which can be lacking, narrow, steep, ramp with not smooth surface and level differences by getting 71% of all choices. It is followed by short green duration of pedestrian traffic light that has not been a factor inferred from spatial case study analysis with 41.9%. later on, problems with tactile pavement, inconsiderate attitude of drivers as another new finding, and disappear of pedestrian crossing stripes on the road (Figure 6.5).

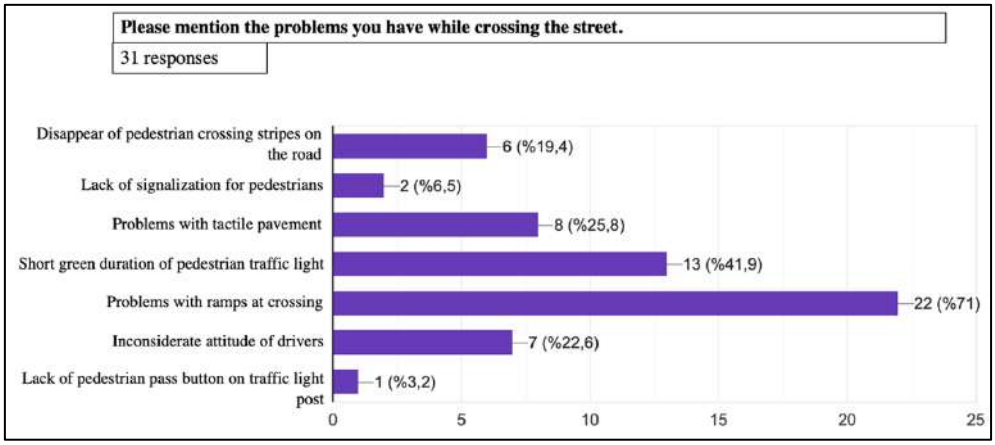


Figure 6.5. Accessibility Barriers While Crossing Roads

The sixth question is about accessibility barriers participants faced while using overpass/underpasses. As seen in Figure 6.6, it is clearly visible that lack of or not working elevators or automated platforms takes the lead with 77.4%. The other two prominent barriers of overpass and underpass, according to the choices of participants, are steep ramps to reach the entrance of overpass or underpass (48.4%) and not existence of such facilities on the route of participants implying a fact that they have difficulties in crossing roads and seek overpass/underpass as safe solutions (35.5%).

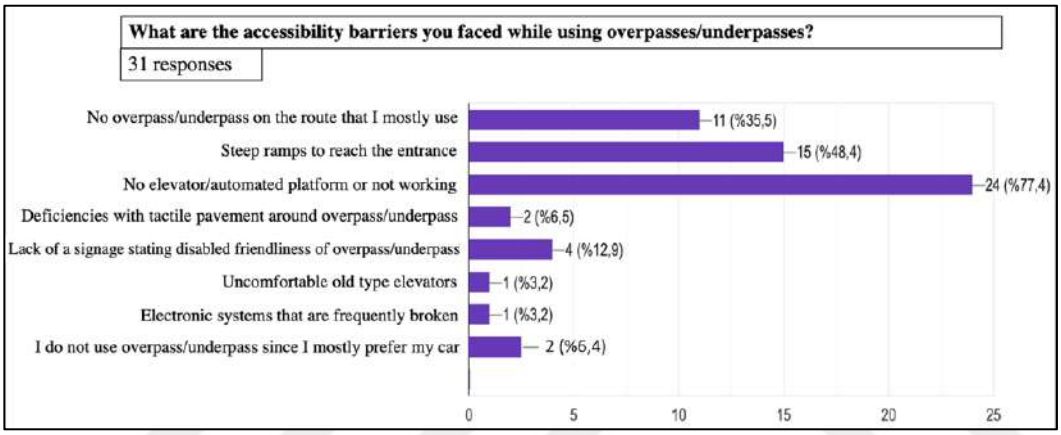


Figure 6.6. Accessibility Barriers While Using Overpass and Underpass

The seventh one aims participants to score to what extend cars affect accessibility of PRMs. This issue was inferred through site observations in spatial accessibility analysis and literature review as cars constitute significant barriers for accessibility of PRMs. However, participants state that although scores of 4 (the choice of 11 participants) and 5 (the choice of 5 participants) get 53.4% of all choices, a considerable number of choices were made for score 2, score 1 and score 0 (the choice of 13 participants getting 43.3% of all choices). In other words, there is no consensus for the fact that car is a part of accessibility problem. This fact presents a dilemma that will be in-depth analyzed within the following sections by supporting user direct opinions (Figure 6.7).

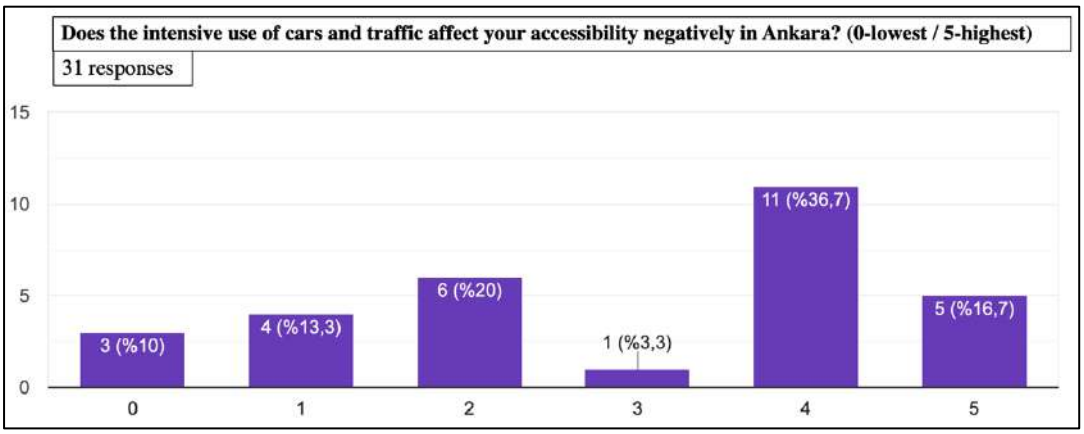


Figure 6.7. Questioning Whether the Intensive Use of Car Affect Accessibility Negatively in Ankara

Different from spatial case study analysis, public transport vehicles are also under investigation from user perspective, which is the topic of the eighth question. It asks which public transport modes they prefer for daily urban trips. It can be easily noted that people with disabilities prefers mostly urban rail systems and then buses (25 out of 31 participants prefer rail systems and 21 out of 31 participants prefer buses). 5 participants also mentioned that they also prefer to use car for daily trips (Figure 6.8).

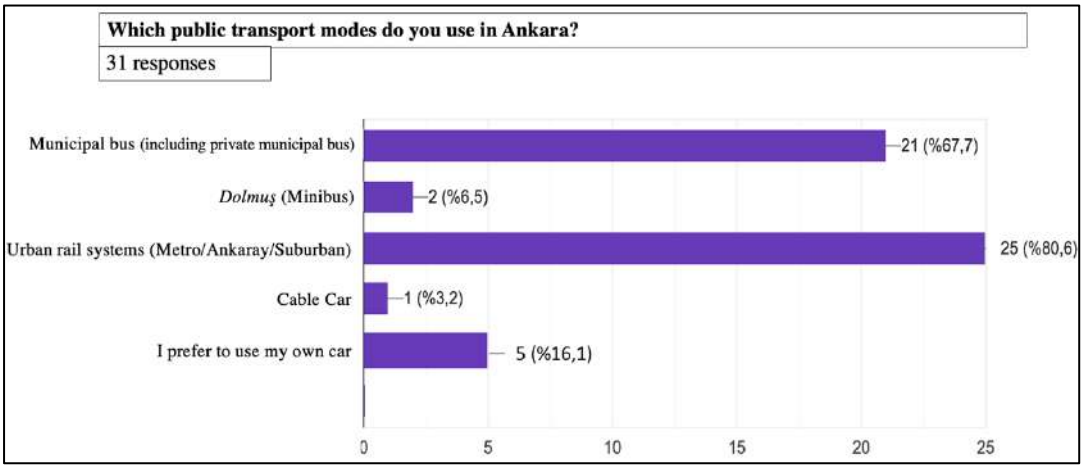


Figure 6.8. The Preference of Public Transport Mode Choice of Participants

Ninth question is asking the barriers for accessibility of public transport stops and stations. 20 out of 27 responses mentioned the most remarkable barrier as problems

with bus stops including accessibility of stop and bus itself. All the choices were under investigation in spatial accessibility analysis in Ankara, too except the last one: inconsiderate attitude or wrong practices public transport vehicle of drivers that takes the second ranking among choices. It implies that a considerable number of participants consider drivers as one of the sources of inaccessibility of public transport systems. Later on, deficiency in voice warning and braille information at stations takes the third ranking, which composed mostly of the participants with visual impairment (Figure 6.9).

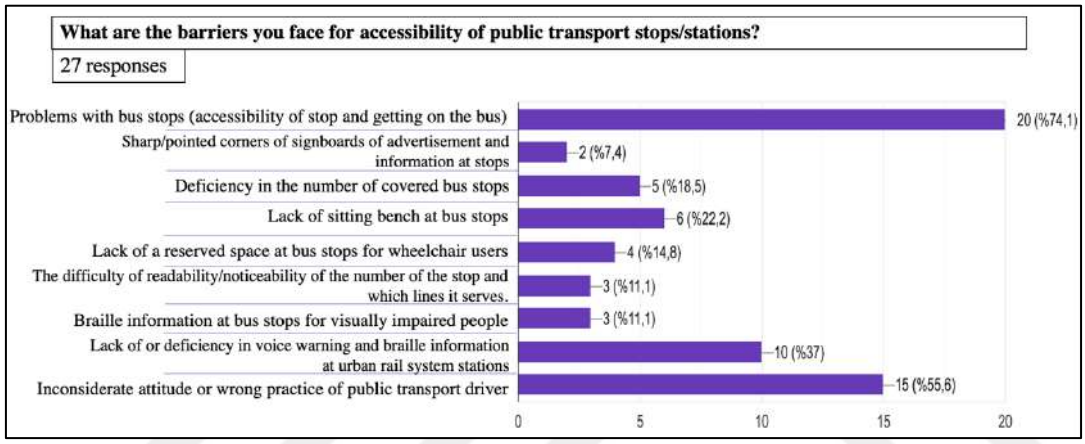


Figure 6.9. Barriers for Accessibility of Public Transport Stops and Stations

The last question is about accessibility of parks and open-green areas. Spatial accessibility analysis in four case study areas in Ankara revealed that analyzed parks were seemed successful inferred through applying accessibility indicators. However, user perspective put forth a different fact that level differences and deformations on the surface of paths, gradient and narrowness of paths, barriers on walking route. In further sections, user perspective will be quoted by means of trees and branches as barriers for people with visual impairment. Therefore, it can be noted that another dilemma emerges for parks about whether they are close to being problem-free or consist fundamental accessibility barriers (Figure 6.10).

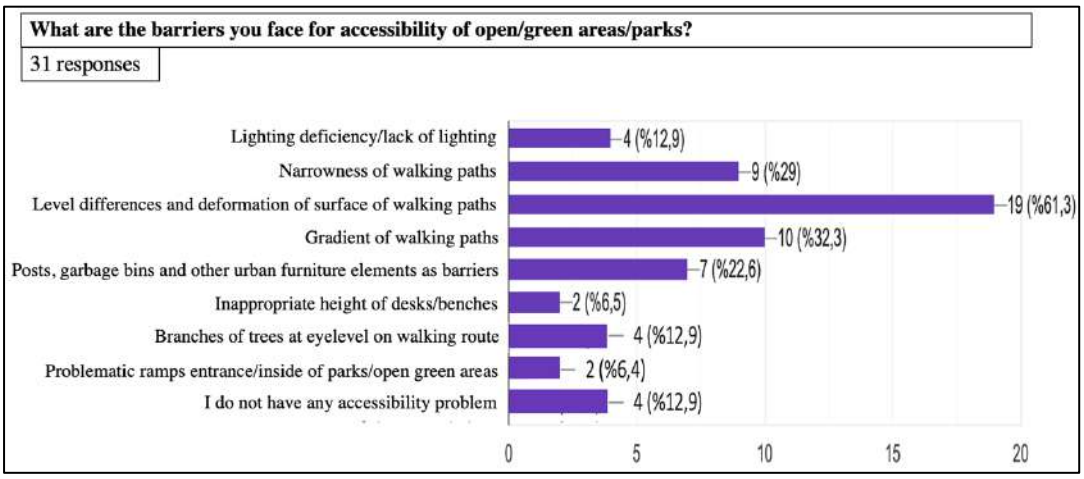


Figure 6.10. Accessibility Barriers in Parks and Open-green Areas

Consequently, the numerical quick picture of spatial accessibility aspects of user perspective gives the opportunity to;

-begin the analysis of user perspective in collaboration with previous spatial accessibility analysis in four cases in Ankara,

-generate spatial accessibility dilemmas between researcher and user perspective,

-understand the general framework of the analysis having an introductory idea of the approach of user perspective to accessibility analysis.

A further in-depth user perspective investigation will complement spatial accessibility analysis with societal and administrative aspects of the problem.

6.1.2 Analysis of Accessibility Barriers under Three Aspects

Outputs of focus group discussions put forth spatial, social and administrative aspects. Spatial aspect as the barrier is elaborated with the emphasis on accessibility chain, accessibility of public transport, and two separate dilemmas related to car vs. accessibility and problematic green areas vs. problem-free green areas. Then, social aspect mainly focuses on social exclusion discussions and a specific discussion between two opposite sides: the ones favoring positive discrimination for people

with disabilities vs. the ones against any sort of discrimination including 'positive' ones. As the last aspect, administrative measures contain policies for the well-being of PRMs and lack of necessary strategies as a barrier including budget problem and lack of prioritization of accessibility policies by local and central governments.

Before proceeding what user perspective proposes, it is beneficial to have a quick picture of dilemmas emerged at the end of some certain focus group discussions. As a part of methodology of this thesis, the reason to use focus group discussions as one of the research methods is extracting details of user perspective within group discussions since face-to-face interaction (despite staying online meetings due to COVID-19 pandemic) always has a probability to generate supporting and contradicting approaches on a same topic or new ideas through creative thinking. Five different contradicting ideas, namely dilemmas, emerged from focus group discussions related with physical, social and administrative aspects (Table 6.1).

Table 6.1. Contradicting Approaches about Accessibility of PRMs

RELATED ASPECT	**OPPOSITE POLES**		
Spatial Aspect	Cars are not one of the sources of accessibility problem, cars are vehicles facilitating life of people with disabilities.	vs.	Cars make daily-life difficult and create permanent (occupying excessive amount of urban space) and temporary (parked or cars in front of ramps, near bus stops and on pedestrian crossing) barriers.
Spatial Aspect	Parks are accessible and free-from accessibility problems.	vs.	There are plenty of accessibility barriers in parks, which discourage PRMs to use open and green areas of the city.
Spatial Aspect	Tactile pavement system is very useful despite several problems.	vs.	Tactile pavement is a system specific to people with hearing impairment that

Table 6.1. (continued)

			deepens the level of discrimination
Social Aspect	Positive discrimination for people with disabilities is essential to overcome daily life accessibility problems.	vs.	Positive discrimination is one of the aspects of discrimination even if it is called 'positive'
Administrative Aspect	Lack of enough budget is one of the sources of accessibility problem.	vs.	The problem is not lack of budget; it is lack of enough prioritization efforts for accessibility of PRMs.

These contradicting approaches about cars, parks, tactile pavement, positive discrimination and prioritization of financial sources are elaborated under their related aspects.

6.1.2.1 Spatial Aspect as the Barrier

Spatial aspect of this qualitative focus group analysis is the same aspect that was investigated under spatial case study analysis. In previous spatial GIS analysis accessibility problem definition stated that there are serious physical accessibility problems related with pedestrian sidewalk, ramps, crossing and public transport whilst open and green areas analyzed in four case study areas need to be set apart for being almost problem-free. Similarly, focus group analysis revealed that there are serious accessibility problems about the same indicators processed in spatial case study analysis that provided a qualitative definition of accessibility chain. However, contradicting views emerged by means of cars and urban parks. In addition, social and administrative aspects flourished the research beyond the outputs obtained from spatial case study analysis.

6.1.2.1.1 Defining Accessibility as A Chain: Barriers related to Sidewalk, Ramp and Crossing

In the literature review, the concept of accessibility chain is explained to emphasize that accessibility is not a single concept for only one specific aspect such as only having barrier-free sidewalks or only having problem-free ramps or only having accessible public transport vehicles. In other words, accessibility is not an output of partial accessibility policies and investment; it needs to be considered as the combination of a set of comprehensive policy-making and actions. Therefore, the problem will be defined upon the concept of accessibility chain.

Focus group discussions clearly revealed that accessibility needs to be defined as a chain starting from pre-journey activities including planning the trip and ticketing for inner city, intercity and even transnational travels. In other words, accessibility chain begins at home, just before the trip. Then, the links of the chain follow as accessibility of urban physical environment, public transport stop/station or coach terminal (in case of intercity travel), the vehicle (bus, Dolmuş, train, or coach and plane). After getting off the vehicle, new rings can be added to the chain by planning new destinations within the journey or returning home part begins. At the end, passenger is expected to have easy access to assessment mechanisms for her/his journey through online or help desk platforms (Figure 6.11).

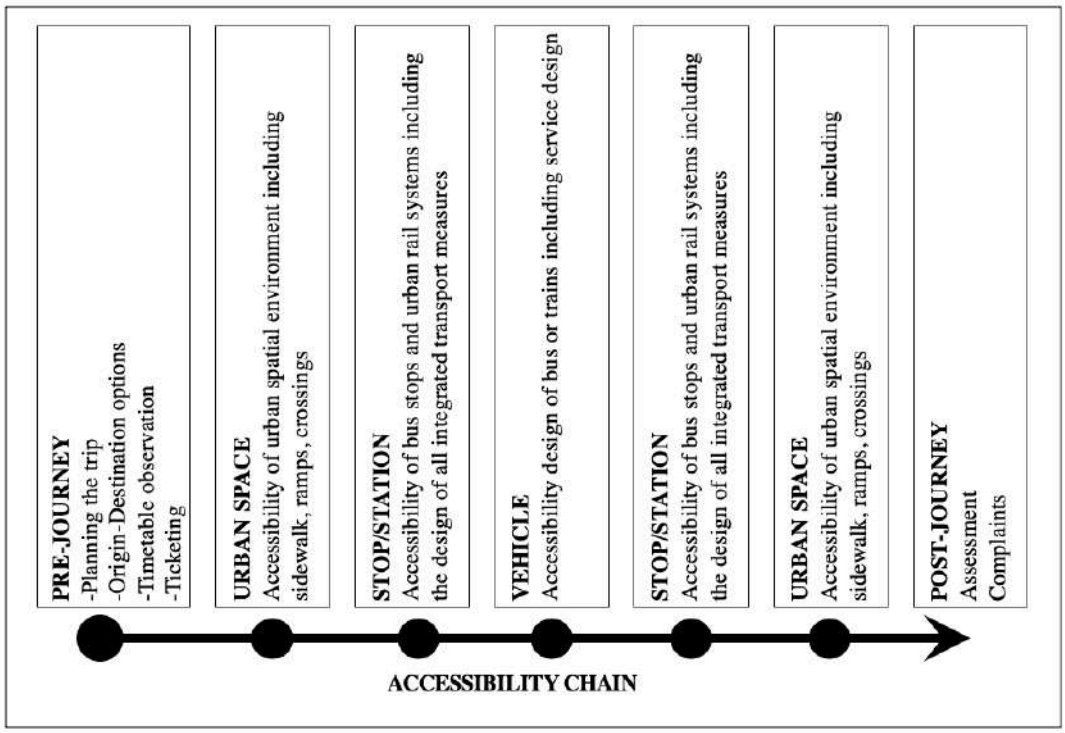


Figure 6.11. An Example Template of Accessibility Chain (Produced by the Author)

To put forth how focus group discussions defined the problem as not a single accessibility barrier on a specific subject but a problem with accessibility chain, certain quotations of several participants of focus group discussions will be conceptualized as a chain of 'survival' rather than a chain of accessibility. Before mentioning examples of such conceptualization, it is necessary to present opinions of two physically impaired participants of the same focus group meeting to infer detailed examples of determinants of accessibility chain as a list. Firstly, participant F4-Y, a member of METU without Barriers Student Club, explains accessibility problems he/she generally faces on sidewalk, who links accessibility of sidewalk, ramps, bus stops and bus as a segment of an accessibility chain.

> I want to tell you what my experiences are on the sidewalks until I get out of the house and come to the bus stop. Sidewalks are entirely problematic. Landscape architecture and things on the sidewalks, the way garbage bins are placed, the tables in front of shops, or signs and advertising boards... All of them are problematic. If I manage to pass these challenges, I see that PTT and natural gas infrastructure cabinets are located on the sidewalk route exactly where we are likely to hit, the passages are not clean and there is no

> safe road in this sense. It is very difficult for me to reach the bus stop under these conditions. If I reach the bus stop, the fact that whether the bus is suitable for me or not is another problem. People using wheelchairs use ramps while getting on the bus, and unfortunately, those ramps are not maintained regularly. The drivers do not know how to use those ramps, so when we ask, they answer that it is broken. I have prosthetics in one of my leg and arm. I have to pull myself up by holding on to the steps and high pavements. I go upstairs and somehow get myself on the bus. Just when I'm going to validate my bus card, the driver immediately accelerates because people's time is limited. In such situations, I have difficulty in standing. Should I validate my transport card or hold onto something to avoid falling?

Similarly, participant F3-K explains spatial accessibility challenges and defines another segment of accessibility as a chain.

> I think the way the garbage bins are placed is extremely wrong, from my point of view. The size of those garbage bins is also too high. I say many times that I have to ask people 'can you throw my trash too'. For example, in markets, butchers, there is no straight entrance without level differences, there is no ramp at the entrance. I cannot get in or out without seeking help from someone else. The sidewalk is very problematic all by itself. For example, they made tactile pavement for visually impaired people, but it has become intermittent, corrupted, and not renewed. There can be poles on the tactile pavement route, and garbage bins or trees are to be planted in front of the Tactile pavement route. Municipality implements these lines. can you believe that municipality made tactile pavement, planted trees on the route of tactile pavement, and then continued the line after planting? I was such cases many times.

In this opinion, participant F3-K defines a part of accessibility chain composed mainly of barrier-free accessibility measures. Therefore, a list of determinants of accessibility chain can be exemplified considering these above mentioned two opinions. The aim of such an example listing is to reveal insight about how big is the set of measures of accessibility is and why to consider the problematic as not accessibility of a single determinant but accessibility as a complex and comprehensive chain. Example list of determinants of the parts of journeys of these physically impaired persons is;

- street furniture

- plantation

- position of garbage bins

- height of garbage bins

- position of tables-chairs of cafes/restaurants o sidewalk

- position of sign posts

- position of advertising boards

- position of infrastructure cabinets

- cleanness of sidewalk affecting smoothness of the route

- bus ramps

- drivers not knowing how to use bus ramps

- inconsiderate attitude of bus driver

- level differences at the entrances of urban services (market, butcher etc.)

- corrupted tactile pavement

- barriers of on the route of the line of tactile pavement

STORY-1

Participant F2-A

IS IT SOLVING A PUZZLE OR A DAILY TRIP PLANNING?

I start my daily trip with a set of very complex plans. If the distance is long, I prefer to use my automated wheelchair. If I use my wheelchair, the weather condition becomes important. If the weather is cold or rainy, I need to prefer bus or Metro. If I prefer bus, it is disadvantageous for me to get on it due to lift problems at their doors and inappropriate attitude of drivers -and sometimes even other passengers. One day, I had to prefer bus because there was no Metro route alternative to the location I was going. A bus arrived, the elevator was broken, the second bus came, the elevator was broken, the elevator was finally working on the third bus and I was able to get on. If I have Metro alternative on my route, I always prefer Metro. But, one day the front wheels of my wheelchair were stuck in the gap between platform and wagon at Metro station. I managed to save myself at that time. But I wouldn't

be that luck all the time. Unfortunately, these have become ordinary challenges of my daily life.

If more participants' opinions are added, the list can continue for pages. It is seen that accessibility is a problem of chain composed of a journey starting with the intention of PRMs to go out and return back to home. Each time PRMs are not able to achieve this chain, which has mostly been the ordinary daily case for them, there could be social consequences of being excluded. Besides, from policy-making perspective, taking precautions to deal with one single accessibility determinant will surely never solve the entire problem. For example, adding lifts for physically impaired people to buses does not itself enables them to get on the bus easily. In the meantime, if bus stop platform remains more than 20cm, it would be meaningless to add lifts to buses since there will still be level difference between bus stop and buses. Consequently, physical aspect of accessibility needs to be considered as a right, a right to achieve as a chain by PRMs.

To investigate problems on the links of accessibility chain in detail, it is noteworthy to state that how challengeable for a disabled person to deal with barriers and inaccessible characteristics of urban space on each link of accessibility chain. This will contribute the clarification of the path towards accessibility problem definition.

Each single participant of focus group discussions was asked whether s/he prefers to use vehicle road/street to go from one place to another rather than using pedestrian sidewalk. They confirmed that they always prefer roads all without exception since road is smoother and has less level difference compared to sidewalk. However, they are aware that they take a risk of being injured or involved in an accident, which stands as a discouraging factor for PRMs to go out. Under the light of this fact, how accessibility chain is problematic is shown along with quotations of four different participants and their respective accessibility chain conceptualizations.

Participant F1-K1, the Head of Yenimahalle Disability Assembly and a person with battery-operated wheelchair, explains problems s/he experiences in urban space as below.

> I live in Batıkent (Ankara) and use a battery-operated wheelchair. I redesigned my house and garden to have sidewalk access by myself without seeking any help. Problems begin for me after I leave the garden gate of my house. Let's say I need to get on the bus and go somewhere from Batıkent. First, I need to access bus stop. It's very rare for me to proceed on sidewalk, but let's say I insistently decided to use sidewalk. When I want to get across the street, generally, there is no ramp on the other sidewalk. When there is no ramp, I have to go back to the first ramp I took off and go down the road. When I go to the sidewalk again, this time width of the sidewalk is sometimes insufficient and my battery-operated wheelchair does not fit and I cannot pass. Even when I manage to proceed on a sidewalk, I come across many obstacles such as small pits, trees, lamp posts. That's why I almost always follow my path on vehicle road. If I manage to arrive to bus stop, this time the lift system of the bus does not work and this time I am faced with the problem of not getting on the bus. There are times when I give up my journey and return home when I encounter such difficulties.

To complement understanding of those challenges, Figure 91 shows a conceptualization of the specific segment of accessibility chain. Once above-mentioned opinion is read along with below Figure 6.12, it is not possible for F1-K1 to achieve the part of accessibility chain independently, which makes her/him go back to home with a disappointment of failure. In other scenarios, they might overcome these accessibility barriers if they find someone to seek help or proceed on vehicle road; however, these two negative scenarios have serious social consequences and safety concerns.

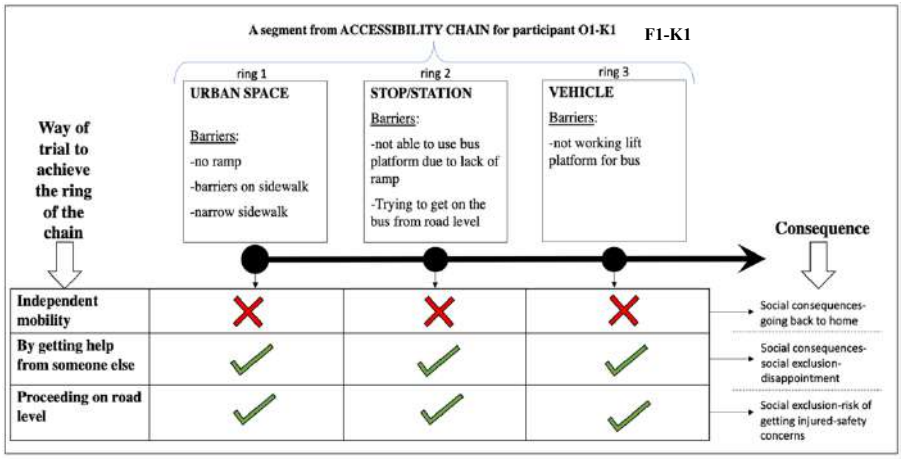


Figure 6.12. The Conceptualization of a Segment of Accessibility Chain of Participant F1-K1 (Produced by the Author)

STORY-2

Participant F3-K

A RELATIONSHIP BETWEEN ACCESSIBILITY AND EMPLOYMENT

I have a 92% orthopedic disability and use a wheelchair. I applied for jobs in many places and attend interviews. I graduated from 6 universities and I am now studying my 7th department at a university. But the biggest problem is that when I was interviewed, I was said, 'We would love to work with you, but the physical conditions of the building are not appropriate for you, so we cannot take you under review'. I got a lot of responses like this. I also applied to NGOs. In the interviews, they told me 'The height of paper cabinets and level differences at doors are not suitable for your wheelchair'. In summary, generally, the answer is 'you are very well equipped, we would like to work with you, but the physical conditions here are not suitable for you'.

As another example, participant F2-N, a person with battery-operated wheelchair, explains problems s/he experiences in urban space as below.

> I am using a battery-operated wheelchair. The surface quality of the pavements is very poor and some parts are very narrow. Even if I go to the sidewalk, when I want to cross, the ramp is very steep because the sidewalk is very high, and people help me to get down. I start to cross the street and when I pass the refuge in the middle of the road, I come up against level differences on the road and the wheelchair wheels get stuck there. I stay in the middle of the road and I'm afraid when the vehicles move. When I want to reach the bus stop after getting across the road with the help of other people, I sometimes see that the ramp is too far from bus stop and I have to follow a long route to reach the stop. I have problems getting on the bus then when I arrive at the bus stop. The lift system of the bus does not work or the driver does not want to open it by spending time for a person with wheelchair.

The conceptualization of related part of accessibility chain of participant F2-N is seen in Figure 6.13. Participant F2-N faces barriers on link 1 about ramps, surface quality and narrowness of sidewalk and level difference; on link 2 about long distance between ramp and bus stop -overcome this barrier by following long distance and spent extra time-; and link 3 about bus lift system and unpleasant attitude of bus driver. It seems impossible to obtain her/his right to access through independent mobility that reveals social consequences and safety concerns by facing undesirable struggle with cars.

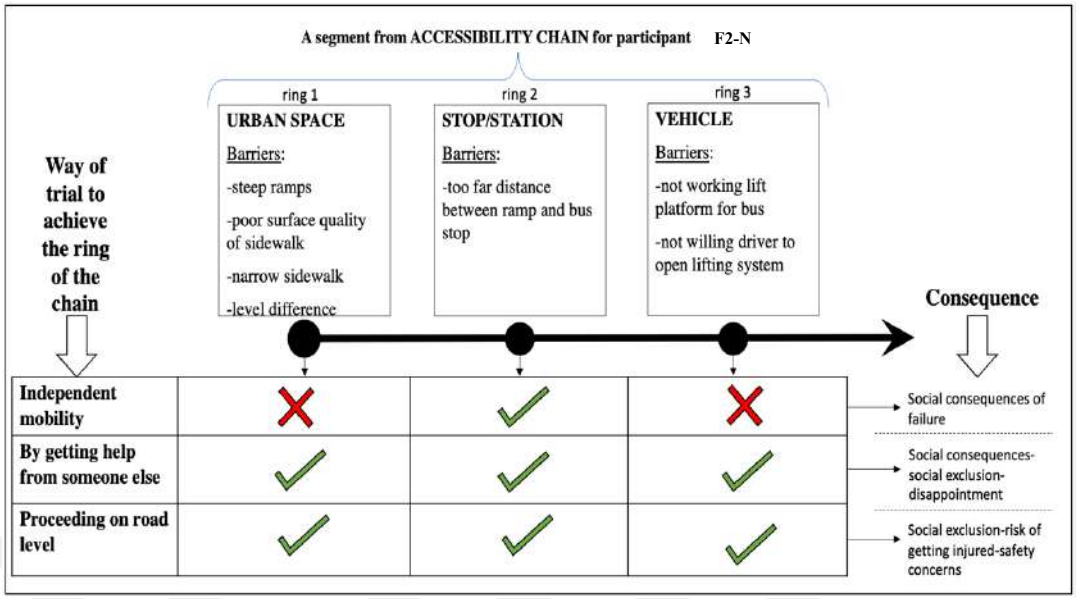


Figure 6.13. The Conceptualization of a Segment of Accessibility Chain of Participant F2-N (Produced by the Author)

The other example is from a person with visual impairment, participant F3-Y, who is the Head of the Association of People with Disabilities Working in the Public Service. S/he emphasizes that how problematic walking in a university campus in Ankara is.

> Level difference between building gate of my faculty and outside environment is very challengeable that each time I need to check surface sensitively with my stick. As a visually impaired person, I can say that when you use the sidewalks in the Middle East Technical University (METU) Campus, your feet definitely get stuck. Sidewalks aren't very healthy, but I force myself to use them. Because, road is risky. If a disabled person walks on the sidewalk, it means that you take the risk of falling at METU. There are signposts on the pavement and I always have the risk of crashing at any time. There is almost no room to pass through the trees on the sidewalks in the campus. Sometimes I proceed on the road level, and this time I am in danger of tripping over the rainwater grates. While crossing the street, I pass by trying to hear the decreasing sound of the vehicles at corner points. Sometimes I try to provide safe pass to myself by shielding someone while crossing the street. When I come to the entrance of Metro station, elevator or automated stairs sometimes do not work. So, I seek help from someone else. I also have trouble with tactile pavements when I arrive in my own neighborhood from the campus. The tactile pavement is supposed to give me

a safe route, but while following, I bump into a pole or trip over a pit. It's like a trap as if it was set up for the visually impaired.

The conceptualization of related part of accessibility chain of participant F3-Y is seen in Figure 6.14. This part of the link of accessibility chain is composed of getting out of building and the way towards getting on Metro. Independently, the journey is surely be interrupted at specific locations on the chain. Most of the actions that participant F3-Y mentioned, requires an accompanying person for a person with visual impairment. Therefore, no matter what the way of trial to achieve the link of the chain, each segment of chain -called as link- deepens accessibility problem and generates social consequences.

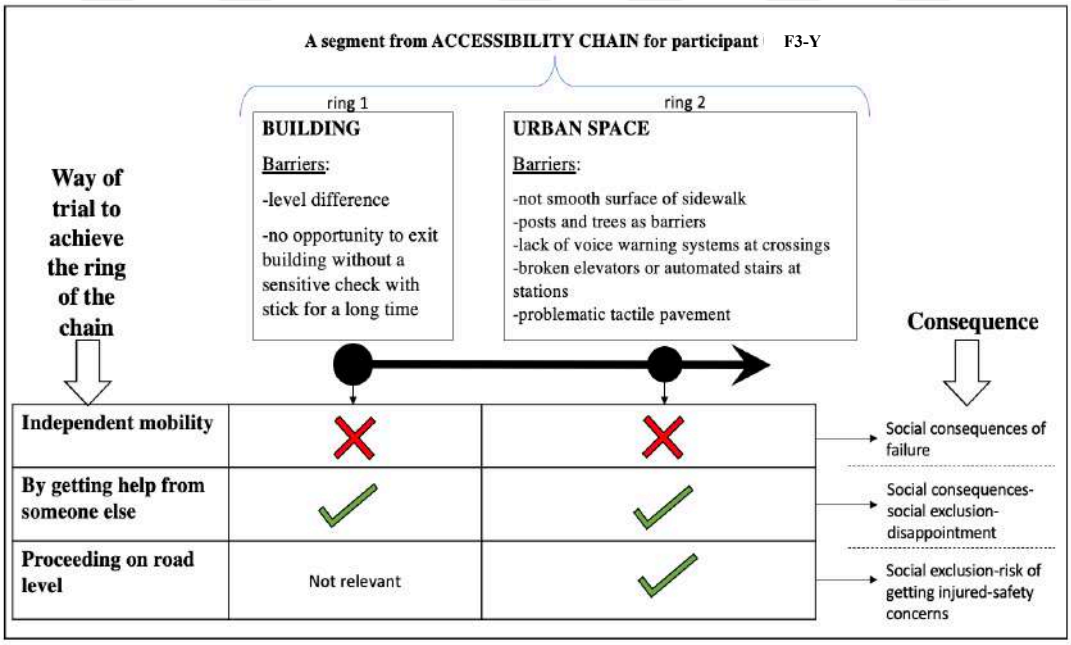


Figure 6.14. The Conceptualization of a Segment of Accessibility Chain of Participant F3-Y (Produced by the Author)

There is an ultimate aim of making such exemplifications through conceptualizing the opinions of three different people with disabilities -two physical and one visually impaired-: accessibility is a remarkably problematic aspect of urban space that needs to be considered as accessibility of combination of different urban mobility service points (i.e., sidewalk, ramp, building, bus stop, crossing). In addition, views from focus group discussions exactly coincides with what theoretical framework on

accessibility chain proposes. However, achieving accessibility chain cannot itself constitute the definition of entire accessibility problematic since there are parts, as significant as physical problems.

Accessibility chain is composed of sub-topics mentioned in the views of participants that are problems specific to crossing, PRMs exposed to use vehicle road rather than sidewalk, problems specific to people with visual impairment and with baby stroller, and finally a dilemma: a critical approach on tactile pavement.

Crossing is the connecting parts of accessibility chain, which basically is about the continuity of journeys of PRMs and other able-bodied people from one sidewalk to another. Two types of junctions are mentioned in focus group discussions that are passing at-grade signalized junctions and using pedestrian overpass and underpasses. In spatial field research in Bahçelievler, Söğütözü, Beştepe Neighborhoods and Atatürk Boulevard, main problems are about barriers to access crossings and problems with pedestrian overpass and underpasses including their elevator and automated stairs mechanisms.

Participant F3-K explains opinions about challenges faced at crossings, specifically about overpass and underpass.

> There are overpasses in Kızılay and Ulus, in the center of the city. Thanks to the subways, there are also underpasses, but I can say that almost none of the elevators of them work. Since it doesn't work, so let there be a mobile platform for the people with disabilities. But, no it does not exist, too. This is a fundamental shortcoming. Can you imagine that a physically disabled person cannot cross the street in the middle of the city center, in the middle of Ulus? As a disabled person using a battery-operated wheelchair, I have a suggestion for this. If a disabled person has to cross the street, there is supposed to be a disabled button for at-grade junctions. When the button is pressed, the disabled sign must be visible to the drivers and the people with disabilities must be able to pass. This can also contribute to awareness raising of drivers in this sense and they learn to be more respectful to us.

A suggestion emerged as a button to warn drivers at-grade crossings. In the same focus group meeting, the other participant F4-Y puts forth a similar proposal to overcome problems with crossings.

> Green duration of traffic lights at crossings are quite problematic. I am a disabled person who have prostheses and can move much more slowly than a normal person. I have a suggestion for problems with crossings: while traffic lights continue their normal course, if a disabled person presses the disability button on a traffic light post, light remains green 5-10 more seconds. Imagine that I overcome somehow all accessibility problems until I access to at-grade crossing, extended green light duration might give us a chance to pass safely. But, keep in mind that there will still be many problems such as steep ramps, not smooth surfaces while crossing.

Considering these two approaches, there are problems with at-grade crossings and a specific 'disabled button' is proposed to facilitate to pass at-grade crossings. Besides, F4-Y particularly emphasizes barriers to arrive to crossings and barriers while crossing, which is an emerging spatial accessibility problem in spatial accessibility case study analysis in four areas in Ankara. In addition, problems with crossing are elaborated with the opinions of participant F5-F.

> I am a physically disabled individual. They designed a pedestrian crossing so that pedestrians and people with disabilities like me are expected to cross the street. But first of all, on the way to reach pedestrian, I encounter a lot of barriers. Green time is not enough while crossing. Although I have an intention to use the overpass, I am not able to use it. Overpass elevator does not work or is locked. It's impossible for me to get on the overpass using the regular stairs. I cannot cross with a pedestrian crossing, nor with an overpass. At such times, there are many circumstances where I come across vehicles while crossing.

For crossings, the three participants focus specifically on barriers to access crossing, short green light time at-grade junctions for pedestrians and not working or even locked elevators. At the end of the discussion of accessibility of crossings, main intention of the research is to come up with a theoretical assumption about the necessity of abundance of overpass and underpasses in urban areas. Participant F9-E1 rephrases the complexity of overpasses and adds a safety issue for underpasses in Ankara.

> In Ankara, in front of Acity shopping mall, there is an overpass, but its elevators have not been worked not even once. And, there is another overpass in front of Armada shopping mall connected to Söğütözü Metro station. I never see those automated stairs of this overpass work. So, I am supposed to use automated stairs by walking, but since I am a physically impaired person,

> I can move very slowly. In such cases, people behind me do not want to wait and sometimes complain me that I prevent them to pass. Also, another dimension is that there is an underpass connecting Bilkent Metro station and Maidan business center part of Eskişehir Road. Surface of underpass is very slippery, and more importantly, inner part of underpass is quite desolate that I worry most of the time.

Along with the opinion of participant F9-E1, not working automated stairs and safety problem for underpasses are added to the list of accessibility problems for crossings. As the final dimension for crossing problematic, it is noteworthy to state that overpass or underpass cannot be considered as a desirable solution because it makes the route of PRMs and others longer and more complex. In addition, existence of such structures for pedestrians to cross a road means that dominance of motorized vehicle traffic over pedestrian flow is pre-accepted. An overpass or underpass is not a solution, but an outcome of car dependent urban mobility culture in Turkey, and in many other developing country contexts. A structural set of solutions to change mobility culture in Turkey is needed to enable PRMs easily cross roads at-grade level since walking is the most prior element of urban mobility and at-grade crossing is supposed be provided in the most efficiently working manner. In this manner, participant F9-B supports the idea of not using problematic overpasses.

> Even I am a person with wheelchair, I do not mostly prefer to use overpasses even if the elevator of overpass works. It seems short-cut to me using at-grade crossings and simple. Cars are supposed to wait for me while passing, I am not the one who is supposed to wait at crossings.

As a result of crossing analysis over the opinions of participants, there is a need to have a primary focus on problems with at-grade junctions including accessibility barriers to reach crossing (ramps, sidewalk problems, barriers etc.) and green light duration. For crossing multi-lane boulevards, there are problems with elevators, automated stairs and safety problems inside overpass or underpass.

Another dimension of the problem with achieving accessibility chain is the fact that PRMs are obliged to use vehicle road level rather than using sidewalk. Roads are mostly made up of smooth asphalt with less barriers compared to sidewalk. What makes this fact noteworthy is that sidewalk is for pedestrians and each single member

of being pedestrian is -must be- equal in utilizing sidewalk to access from point A to point B. However, PRMs are evidently excluded from using sidewalk with permanent or temporary barriers and they face the risk of being injured or getting involved in traffic accident. Participant F4-S complements these statements by putting forth her/his justification of not using sidewalk.

> I don't like using sidewalks. I have visual impairment and I hate walking on sidewalks. Also, I hate when people try persistently to pull me up on sidewalk because sidewalks are narrow and full of bumps and other sort of barriers. I think I walk a lot faster when I use the side of vehicle road. So, I prefer to use roads rather than sidewalk.

It is inferred from this point of view that even other people insist participant F4-S to use sidewalk with their best intentions to make walking flow of her/him safe, on the other hand, s/he has already been excluded to utilize so-called safe structure of sidewalk by accessibility barriers exist on the sidewalk. In other words, PRMs feel that it is a necessity for them to use vehicle road due to problematic structure of sidewalk. Participant F8-V supports this idea with a special emphasis on weather conditions as: “Since I use crutches, I cannot use the sidewalk, especially in rainy and snowy weather, because the pavement is very slippery”. Another reasoning for not using sidewalk is presented by participant F10-M with a complaint against inaccessibility of sidewalk ramps as:

> Municipality builds ramps perfunctorily. There are ramps built just to exist due to rules. Ramps are so steep that it is very difficult for even a normal person to walk, but municipality says that ramps are for the benefit of people with disabilities.

Pedestrian sidewalk is not favorable for the use of people with disabilities. Inaccessible structure of sidewalk results in the risk of injury or accident by the intensive use of side of roads by people with disabilities. Participant F4-Y explains barriers on sidewalk more detailed resulting in the use of roads rather than sidewalk.

> Width of the pavement, height of the pavement, vehicles parked right on the pavement, the defects on sidewalk surface, trees as barriers preventing our route flow, bollards, the electricity poles and signs, the panels... Shall I list more? The pavement is suitable for everything except walking. But roads are smoother and I use the roads most of the time.

Accessibility case study analysis in four areas stated that sidewalk and ramps are less problematic in Kızılay -city center- of Ankara. As a supporting opinion, participant F3-K gives a special emphasis on general problems of sidewalk, obligation for a physically impaired person to use side of roads to go from one point to another, and accessibility in city centers is much better compared to inner neighborhoods as mentioned below.

> The poor quality of the ramps and pavement is particularly problematic for users of manual wheelchairs and battery-operated wheelchairs. Trees and surface problems are the obstacles that challenge me the most. Meanwhile, the accessibility condition is very different in Ankara city center and other roads inside the neighborhoods. All of the problems I mentioned for sidewalks inside the neighborhood are felt deeply by people with disabilities. But accessibility condition in city center is convenient for us; for example, sidewalks are wider and smoother. Although it is dangerous in other areas except the centers in Ankara, I used vehicle road to arrive my destination.

STORY-3

Participant F1-K1

UNIVERSITY CHOICE BY COUNTING THE STEPS OF STAIRS

I was studying physics at METU. My first choice was physics. But you know, the courses in the first semester were all in separate buildings and I wasn't able to manage to achieve this. I was going to Chemistry Department for a course, but I couldn't catch up with physics class. Sometimes I went to the physics course, but since I could not enter the lecture hall because of plenty of stairs, I was waiting at the door to listen. After a while, I could not stand it and changed my university to Gazi University Electrical and Electronics engineering. While I was about to make a choice, I visited all the departments at universities related to my expertise and counted the steps of stairs at the entrances of the faculties. Yes, I made my university and department choice by counting the steps, not by considering department scores. Due to accessibility problems, I entered Gazi University, because it was the only faculty with an elevator. Consequently, since it was not accessible, I left METU and graduated from Gazi University.

In the analysis of focus group discussions, physically impaired, visually impaired people and parents with baby stroller are taken as sample PRM groups for accessibility discussions. It is inferred from the analysis that problems of parents with baby stroller is quite similar with people using wheelchair. On the other hand,

some specific problems are mentioned specific to people with visual impairment during focus group discussions.

Parents with baby stroller were the participants of 12th focus group meeting, who approached to accessibility problem over inaccessible structure of sidewalks by means of accessibility chain. Participant F10-G, a physically impaired person, noted an interesting awareness that problems of persons with manual wheelchair are highly experienced by people with baby stroller.

> Sometimes, besides wheelchair users, parents with baby strollers or even other able-bodied persons are supposed to use the side of vehicle road, because their wheels are stuck on not smooth structure of sidewalks or because there are always obstacles on the sidewalk.

Parents with baby stroller experiences a breaking point in their lives in terms of accessibility of urban environment after having baby. Before baby, each parent is able to walk as a single able-bodied person in urban areas. However, after baby, a tool, namely baby stroller, comes into their life that makes them Persons with Reduced Mobility in Turkey since their circumstance is quite similar with a person with wheelchair by means of challenging accessibility barriers. Such a breaking point of the ability to access in the city is mentioned by participant F12-C, a parent with baby stroller.

> If there is a problem of accessibility, it is a problem of all of us. I have a 3-year-old son. Until the age of 2, we were dependent on a baby stroller most of the time. My world remarkably changed at the moment I switched to stroller. We actually started to beware of all the problems of a disabled person: sidewalks are narrows, there are barriers, ramps are problematic. Therefore, I usually use roads.

After the breaking point in parents' lives, problems with achieving accessibility chain begin for them such as not using sidewalk, barriers on sidewalk, inappropriate ramps and being not willing to use public transport. Once a considerable barrier is met, baby stroller is lifted by the person with it, which is supported by opinions of participant F12-B, a parent with baby stroller, as: "Fortunately housing site I live in is accessible and has decent ramps. I can always use a wide enough sidewalk until I go to the market, for example. If there are stairs with no ramp, I have no choice but

to lift the stroller of my kid by myself". The case that baby stroller is lifted also results mostly in an interruption of independent mobility. F12-A, a parent with baby stroller, explains such a dependency as a dependency on her husband or of a car to be mobile in the city.

> I usually go out with my car if my baby is with me. If I go out without a car, I definitely want my husband to come with me, because when I encounter a barrier -actually I often encounter barriers on the sidewalks in Karapürçek, we both lift the stroller with my husband.

Another dimension for parents with baby stroller is parents with twin babies, who are supposed to use twin baby stroller with two options: back-to-back seating twin baby stroller or side-by-side twin baby stroller. Both options need to face accessibility challenges by means of different parameters. For instance, side-by-side ones have difficulties mostly in fitting on the spaces left on sidewalks apart from barriers; and back-to-back ones have difficulties mostly in challenging steep and not smooth ramps. Participant F12-S, one of the parents of 2-year-old twin kids, explains her/his accessibility troubles as below.

> Our kids are twins and we use twin strollers. Almost no sidewalk width is enough for us to move forward. We have to go down the road level with our wide twin stroller, which creates a risk of accident once we face with cars. The sidewalk ramps are in very poor condition. Sometimes there is no ramp, or surface of ramp is inappropriate. Let's assume that ramp floor is smooth, this time the width of the ramp is mostly narrow. So, I need to try to lift the twin stroller with my wife in such conditions. It's almost impossible for me to use sidewalk in city center.

In brief, it is clearly seen that parents with baby stroller experience similar problems with people with disabilities using wheelchair in achieving accessibility chain. The prominent point is that they are highly dependent to a second accompanying parent to use sidewalk. In other words, it is quite challengeable in many cities of Turkey for a person with baby stroller -no matter it is single or twin stroller- to achieve accessibility chain through independent mobility similar to people with wheelchair.

STORY-4

Participant F3-Y

AN INACCESSIBILITY CRITICISM TO METU FROM THE PERSPECTIVE OF A VISUALLY IMPAIRED GRADUATE

Let me tell you about a case I experienced at METU. I was waiting to attend the ENG 211 course in the Physics Department. I bought tea from the canteen and went up the stairs. Turning to the side of modern languages and climbing the steps, I suddenly fell down from the side of the stairs to the ground. Since there is no guardrail on the side of the stairs, a height like a wall has formed over there. I never guessed that there was a space next to the stairs. There are similar stairs in the Faculty of Architecture, and I tripped over these stairs many times. As another example, in 2010, a visually impaired friend of mine fell into the pool while walking from the side of the pool with fishes at the entrance of the Faculty of Architecture. Still there is no warning height or something another around the pool. The fishes in the pool are beautiful but very dangerous for a visually impaired person or a running kid.

Another sample disability group in Ankara participated in focus group discussions is people with visual impairment. This group of PRMs mostly uses a walking stick to facilitate their orientation while walking depending on the level of visual loss. In other words, if people with visual impairment have a desire -as they must have- to achieve their daily life mobility requirements through independent mobility, they are dependent on walking stick, which makes their journey extremely sensitive to the level of quality of sidewalk, ramps and accessibility of public transport stations/stops and vehicles. Several differentiated problems emerged from focus group discussions specific to people with visual impairment on different parts of accessibility chain. The most prior one is suddenly emerging trees, posts and any other barriers on a normal route of a visually impaired person, against which they have a need to be warned in advance. Participant F4-S, a person with visual impairment, exemplifies accessibility problems on sidewalk in a clear manner.

> Trees suddenly appear in front of me and I crash. However, if they were surrounded by bubbled texture, I would not crash. And pits on the sidewalk... Oh my god! My foot suddenly goes into that pit because I couldn't see it and I have injured many times.

From the same focus group meeting, participant F3-Y- a visually impaired person-, emphasizes similar problems with further details.

> When you go using sidewalks, your feet definitely get stuck somewhere for visually impaired people. Despite all the problems, I try to use the sidewalks, because I cannot take a risk of an accident by using road level. In addition, on the road level, there is a possibility for walking stick to stuck into rainwater grids. As a result, if a visually impaired person tries to walk on the sidewalk, it means that the risk of falling is pre-accepted. Besides, while walking, a pit or a billboard suddenly appears in front of me, which means a prospective normalized risk of crash.

It is mentioned that posts, pits or billboards on sidewalk are to be easily perceived as transformed sudden barriers interrupting specific links of accessibility chain for persons with visual impairment. Spatial accessibility case study representing researchers' perspective towards the accessibility problematic emphasized a significant deficit for visually impaired persons as the fact that barriers on sidewalk are not fully -not even partially- surrounded by bubbled texture tactile pavement. As supporting opinions and experiences from user perspective, there is an urgent need to warn visually impaired people in advance with bubbled texture tactile pavement that surrounds barriers.

At the very first pre-journey planning link of accessibility chain, planning the trip is to be quite challengeable, even sometimes an interruption at the beginning phase of trip might terminate the entire trip before it began for especially visually impaired people. If they cannot understand screens, for particularly computers and smart phones, they cannot plan their trip by thinking on the route, trip schedule of a public transport mode or ticketing. Participant F7-G puts a special emphasis on accessibility of information for a visually impaired person.

> Access to information is very important for visually impaired. We have screen readers, and if there are icons on the screen instead of text, our screen readers don't read it to us. For this reason, the icons should be in the form of a text box, not a picture or image, especially when buying tickets or entering map applications. There are motion graphic images and photographs on the websites, too. In the absence of text, the visually impaired individual cannot obtain the information on the website. Access to information and making websites accessible and readable are very important to us.

From the perspective of visually impaired people, sudden barriers on sidewalk and access to information are particular accessibility problems, mostly specific to them, on certain links of their accessibility chain. In addition, problems similar with the ones experienced by physically impaired and parents with baby stroller are valid for visually impaired people, too.

Tactile pavement is a tool to orient visually impaired people on sidewalk with differentiated textures under different circumstances. Stripe texture means no problem with following; bubble texture means that there is a barrier, a turn, a pedestrian crossing or stairs. In Turkey, local policy-makers of most of the cities have strictly implemented tactile pavement system on sidewalk. There have been two types: yellow sticked ones are the most easily applicable and, however, quite slippery ones; and a part of pavement stone constitutes a yellow line on sidewalk. Sticked ones are the initial implementations that are in process of exchanging with the latter one composed of a part of sidewalk stone.

There are two discussions that need to be under discussion considering outcomes of focus group discussions. The first one is the problems with existing tactile pavement structure creating barriers rather than facilitating achieving accessibility chain. The second discussion is on a more philosophical approach surrounding a question: do visually impaired people really need such urban spatial guides for walking that might also be a source of discrimination against people with visual impairment?

In the first discussion, problems with tactile pavement were under discussion among the physically and visually impaired participants of focus group discussions. Participant F9-E1, a physically impaired person, puts a special emphasis on problems of sticked tactile pavement.

> I cannot move my feet upwards so easily. Tactile pavement, sticked to sidewalk, sometimes comes off and I run the risk of tripping over it because I cannot move my feet quickly. If I have such a problem even though I am not visually impaired, my friends who cannot see definitely have serious challenges.

In addition to the problem of deterioration for sticked ones, each single barrier on sidewalk must be surrounded by bubble textured tactile pavement, which has already emerged as a remarkable deficit in spatial case study analysis in Ankara. As a complementary user approach, participant F1-C summarizes the process of implementation of tactile pavement system along with its problems.

> I had contact with Ankara Metropolitan Municipality about yellow lines on the pavement. Incredible money spent for them. First, sticked ones were attached, then yellow lines were created as a part of pavement stone. I studied the standards on this matter. Each time the yellow lines approach a tree or similar object on sidewalk, it needs to be covered with bubbled texture. In Turkey, municipality sometimes draws lanes around the object, which does not comply with the rules, and that's it. It is a pity that sometimes they put stones around barrier for us not to fall into it. Not having those yellow lines is better. It is more problematic for the visually impaired to use yellow lines.

In addition, participant F4-Y further explains the problematic perception of local policy-makers on tactile pavement system as: “Yellow lines a part of policies of European Union adaptation process of Turkey. But municipalities think that straight yellow stripe system will be enough. Even if it touches a barrier, it continues its direction as if there is no barrier”. As a result, the first discussion is about the problems created by inappropriate design and maintenance of tactile pavement system. Within European Union adaptation process for Turkey, tactile pavement has been tried to be standardized for the cities in Turkey. It is clearly seen that there are problems for tactile pavement system in Turkey stated by user perspective that are highly overlapped with the outcomes of spatial case study analysis in Ankara, which are;

- Sticked tactile pavement is dangerous with its slippery and easily deteriorated structure.

- A significant barrier arises as the fact that barriers on sidewalk are not surrounded by bubbled texture tactile pavement to warn PRMs in advance.

- Route design of tactile pavement is problematic since it mostly aims to follow median of sidewalk without considering urban furniture and other objects to be counted as barriers.

At first sight, it is normal to think that all the deficiencies are supposed to be eliminated and we need to support tactile pavement without questioning. However, user perspective has put forth another argumentative dimension, which is the second discussion about tactile pavement: would accessibility be in a better condition if there was not such a tactile pavement system on the sidewalk?

Three opinions emerged from focus group discussions in the framework of the discussion and two opposite poles are from the same meeting, which are F7-S and F7-G. In Table 6.2, opinions of opponents are represented by participant F4-S and participant F7-G, and proponent is represented by F7-S.

Table 6.2. Opponent and Proponent Approaches about Tactile Pavement

Representative Arguments of Opponent Approach	**Representative Argument of Proponent Approach**
Participant F4-S: What I hate the most are these yellow lines. I mean, if I really could, I would remove them all. For example, my house is now on the right next to a market, but the yellow line is in the middle of sidewalk. I follow right side of sidewalk without any accessibility problem. But municipality spread yellow lines everywhere like a carpet, and other people force me to use these yellow lines since they think that they help me. Unfortunately, incorrect accessibility practices thought wrong things to other people. The problem is all others classify problems as 'our' and 'their' problems. Therefore, I think yellow lines are one of the sources of discrimination and accessibility problems.	F7-S: I do not agree with participant F7-G's view regarding the yellow lines. It is not possible in Turkey to completely change sidewalk structure and to minimize the number of urban furniture. Yellow stripes lead our route to be accessible. I can take the criticism that developed countries does not have and need such a system of tactile pavement, because urban furniture and walking paths are separate from each other. However, I find
Participant F7-G: The tactile surfaces cause serious slipperiness in cases such as rain, snow and ice. My suggestion is that let's don't need tactile pavement, because it also causes discrimination. Other people say "your path is here" by showing yellow lines to us. Your path... My path... This is a discrimination. You're walking on the sidewalk, I'm walking too. Sidewalk	

Table 6.2. (continued)

should be free from any barriers and level differences; vehicles should not use sidewalk as parking space. If such a big change cannot be made for sidewalks, a smooth surface should be provided with right materials, at least. Sidewalks should be decent and have urban furniture regularly designed.	yellow lines necessary. Unless we do not have such a system, we would always hit another person or a post in our daily life.

Opponent side proposes that sidewalk needs to be accessible along with its each single component appropriately designed and maintained, which eliminate the need for tactile pavement as well as discrimination related to it. On the other hand, proponent side thinks that it is not reasonable to expect all sidewalks to be accessible even in the long run; therefore, a well-designed tactile pavement system is vital for visually impaired people. Consequently, both sides consider the quality of accessibility chain of a certain group of PRMs from looking at different perspectives.

In summary, this sub-section analyzes a way to define problems with accessibility chain from user perspective. In this content, firstly, accessibility chain concept is exemplified by using opinions of participants, secondly, problems of accessibility chain specific to crossings are mentioned. Thirdly, the reason why PRMs are supposed to use vehicle road rather than sidewalk is analyzed with the support of user perspective. Then, problems with accessibility chain specific to parents with baby stroller and people with hearing impairment are presented. Finally, problems with tactile pavement system are mentioned from user perspective along with a dilemma from different point of views. In the next sub-section, accessibility of public transport systems is analyzed in the context of spatial aspects as barriers against accessibility of PRMs.

6.1.2.1.2 Accessibility of Public Transport: Stations/Stops and Vehicles

Public transport is a part of accessibility chain and a trip-leg of sustainable urban mobility. In the content of spatial case study analysis in four different areas in Ankara, investigation of accessibility of public transport services was omitted

because of two reasons; firstly, the focus of research was on accessibility of urban space and secondly, research time was limited. User perspective analysis revealed the focus of accessibility of public transport on mostly vehicles. In other words, spatial case study analysis and user perspective analysis have complemented each other with the analysis of public transport stations/stops and vehicles.

In Ankara, urban public transport is composed of urban rail systems (Metro lines and LRT Line-*Ankaray*), municipal buses, *Dolmuş* (para-transit alternative) and Telpher line (not working since COVID-19 pandemic). Table 6.3 shows the distribution of daily motorized trips in Ankara as of February 2020. First of all, it is easily seen that Ankara is a car-dependent city with 38.6% share of private car use. In terms of public transport, the most prominent point is that municipal buses and *Dolmuş* are the mostly used public transport modes having shares of 27.5% and 25.5% respectively, followed by urban rail systems with a share of 13.2%. Therefore, it is note to worth that analysis of accessibility of public transport modes, with a particular attention to municipal buses, Dolmuş, Metro and LRT lines, is meaningful to have an idea about gaps on accessibility chain.

Table 6.3. Distribution of Daily Motorized Trips in Ankara for February 2020 (EGO, 2020)

Type of Mode	Number of Passengers Carried	Total (%)	Public Transport (%)
Urban Rail Systems	544,400	8.1	13.2
Sub-urban Rail System	75,000	1.1	1.8
Municipal Buses	1,131,300	16.9	27.5
Dolmuş (Minibus)	1,050,000	15.7	25.5
Service Vehicles	970,000	14.5	23.6
Taxi	340,000	5.1	8.3
Total Public Transport	4,110,700	61.4	100.0
Private Car	2,581,750	38.6	
TOTAL	**6,692,450**	**100.0**	

Before user perspective analysis, it is important to re-mention the outcomes of spatial accessibility analysis in four areas in Ankara by means of public transport stations/stops:

- Bus stop platform height does not conform to 20 cm standard to become adjacent with low floor buses

- Voice warning systems and braille alphabet information systems are missing at stations/stops

- There are elevators at stations, but there is a problem of not working or being locked.

As the other complementary piece of puzzle, there are plenty of problems with public transport vehicles, which were clearly declared by participants of focus group discussions. Under this sub-section, firstly the reason why PRMs have not been willing to use public transport is mentioned. Later on, problems with buses and stops and then with urban rail systems are explained. Lastly, the reason why *Dolmuş* is not considered as one of the transport modes in Ankara for PRMs is stated from user perspective.

PRMs believe that they have been discouraged to use public transport. As a result, this has made them not willing even to think of using public transport in Ankara due to many problems that they challenge at stations/stops and with vehicles. Participant F1-K1 emphasizes difficulties in using public transport in Ankara.

> Buses, Metro, Dolmus and even intercity coaches are the modes that normally we should be able to use. People with disabilities cannot get on them due to plenty of barriers against us. It might be possible for us to use buses -only the ones with disabled lifts. Providing that we can reach the Metro elevator, which is expected to be working, then we can use it, too. In fact, it is very difficult for a disabled person to use public transportation in Ankara.

If barriers to access a public transport mode prevent PRMs to use it one case after another, basis of a change in mobility behavior starts to be formed which is not willing to use public transport systems or becoming dependent to use only private car, which can also be presumed as correct for any inner-city passenger in Turkey.

Considering user perspective obtained through focus group discussions, barriers against accessibility of Metro, bus, Dolmuş systems in Ankara fundamentally interrupts PRMs' accessibility chain. Participant F8-A indicates that seamless accessibility is not possible for physically impaired people for some certain reasons.

> I don't use Dolmus, it's not possible anyway. I used bus a few times to make people beware of people with disabilities, and also bus drivers are very incompetent in using lift system. I could use Metro and Ankaray in Ankara if elevators work. In short, I generally do not prefer to use public transport.

As social beings, each single person must have the chance to obtain their right to access by enabling accessibility of public transport with its each single determinant: bus stop, sidewalk measures to reach bus stop, entrance of bus, height of entrance of bus along with the number of stairs at the entrance, elevator and/or automated stair platforms to access stations, minimized gap between station platform and wagon, PRMs-friendly inner design of wagons/buses/minibuses etc. Any interruption on each of these determinants results in social consequences as well as waste of time, effort and money. Participant F2-E exemplifies waste of time resulted by inaccessible public transport systems in Ankara as: "I have been aggrieved so many times while waiting buses for my home trip. I needed to make mode change 3 times; bus, Metro and again bus. I remember that I had spent 3-4 hours for my trip". In addition, such inaccessible public transport cases are observed and experienced by parents with baby stroller resulting in a direct incentive to use private car rather than public transport as F12-A indicated.

> My doughter is 2 years old and I haven't still got on any public transport mode yet, and I don't want to do it for a long time with my kid. Because I know I cannot reach the bus stop and then into the bus. I cannot take Metro if the elevators don't work. I know I'll have to ask constantly other people for help and I don't want that and I use my car.

It is significant to note that most of PRMs have a clear tendency to have accessibility in the city independently, free from any help of others. The socially and environmentally sustainable way to achieve this is the journey with sustainable modes, not by private car for meaningful distances. It is surely obvious that land use structure and level of reduced mobility are some of the prior indicators for the use of

sustainable modes by PRMs. However, above all, accessibility of public transport, which constitutes a critically important link of accessibility chain, is one of the most prominent indicators determining the level of the use of sustainable modes or level of car dependency. As specific examples, there are persons with special needs of space while proceeding in urban area such as automated wheelchairs or twin-baby stroller. Participant F12-S, a parent with baby stroller, explains reasoning behind the use private car rather than even thinking to use public transport.

> It is not possible for us to take bus or *Dolmuş* with our side-by-side twin-baby stroller. It is wider than a single baby stroller. Even if we take the babies in our arms and fold the stroller, then waiting passengers starts to complain. That's why I prefer to use my car in Ankara.

In another specific example, inaccessible public transport directs people to shift their mode choice towards using car is given by participant F7-V as: "I haven't used any bus or *Dolmuş* for about 20 years. I am not able to use them not because of my disability level, but because I cannot access them. So, I prefer my car".

After mentioning general opinions about not willing to use public transport and its fundamental consequence as private car use, one of accessibility problem related with public transport is explained by utilizing user perspective as accessibility problems with municipal buses and bus stops. A significant drawback has already been noted as the fact that PRMs prefer to use vehicle road level rather than sidewalk. Such a fact continues in the process of accessing buses. Participant F1-K1 states that s/he prefers to get on the bus from road level by taking the risk of staying in a space allocated to vehicle use as a pedestrian.

> I don't try to reach the bus stop level; I wait at the road level. There are too many accessibility problems around bus stops. Even if I manage to get to the bus stop level, there is no room for me to pass due to the area occupied by the closed stops. But, at the road level, I am completely unprotected and at risk against external factors.

In addition to accessibility problems of the bus stop and its surrounding sidewalk area, entering buses stands as another accessibility challenge. Participant F1-A mentions that "No single disabled person can get on the bus easily and without help.

Lifts at the doors do not work properly. Buses are quite problematic in Ankara". Lift system is for enabling easy access of PRMs into buses that can be designed as automated and manual. The lift system and height of stairs at the door of the bus sometimes do not facilitate the use of public transport on the contrary, contributes the level of inaccessibility. Participant F1-C indicates opinions about the challenges of accessibility of bus system.

> While getting on the bus, it stops 1-2 meters away from the sidewalk. Persons with low-level disabilities may climb steps at the door; but how can a wheelchair user or visually impaired climb those steps from road level? Besides, bus driver is generally in a hurry and wants to move immediately.

For visually impaired people, dimension of the problem for stops/stations and vehicles evolves towards the lack of effectively working voice warning and problems with other information systems. Their trip assistance depends mostly on mobile mapping applications such as 'Google Maps' or 'Movit', voice warning technologies at stops/stations about any aspects of trip and asking help from some other person. From independent mobility perspective, ideal case would be seamlessly getting on and off from the beginning till the end of trip without being in need of help; however, as participant F4-S mentioned, there are problems specific to visually impaired persons: "As a visually impaired person, sometimes, I cannot realize that bus is coming to the stop. Google gives information about buses but I am still lack of enough information about the line number and the type of bus (low-floor or old type)". In addition, participant F3-Y indicates the significance of voice information systems as: "Voice warning systems in metro stations and bus stops is crucial for visually impaired persons, which mostly does not work. If there was no voice warning system or it was not working, then my trip would become dependent to others to help me". Without well-working information technologies, visually impaired people depend most probably on other passengers, which interrupts the main argument of this research: achieving accessibility chain by independent mobility to obtain their Right to the City.

Only the addition of lift system to municipal buses is not enough, it is supposed to have a maintenance system. Participant F2-N states that “Lifts were added to municipal buses for us; but it takes a long time to use since it mostly does not work”. Once it is broken, bus driver is not able to pick the person with wheelchair up that causes problem of waste of time for passenger with reduced mobility. In addition, long time waiting at bus stop by expecting a bus with a well-working lift discourages people with wheelchair to use public transport and to achieve the trip independently. Participant F4-Y explains such problems generated by bus lift system.

> Bus driver won't pick me up when the lift is broken. If I have an urgent work somewhere, I have to leave my home 1 or 2 hours before because I encounter these problems with the bus lift. Sometimes I could not get on 4 or 5 buses in a row. Bus comes and driver says that disabled ramp is broken, I can't pick you up or sometimes the driver opens the ramp, it breaks down and is not closed.

Low floor bus is a disabled-friendly design enabling bus to stay exactly at the same level with bus stop platform. When the door is open, entrance becomes adjacent to bus stop platform therefore, PRMs get on and off easily. However, in Ankara and even in most cities in Turkey, standardization of buses has not been able to be achieved. Even if there is the lift, there could still be gaps to access buses. Participant F8-V explains this problem with an experience.

> I have a friend using an automated wheelchair (participant F1K1) whose foot was broken last week. Due to the distance between the lift and sidewalk level at the bus stop, he fell along with his automated wheelchair to the ground, and his foot is broken. Another problem, entrances are not standard for buses, some of them have three steps, and some of them four. This is a very serious problem for visually impaired people.

In addition to the lack of standardization for entrance stairs of buses that varies depending on being old type or modern low-floor, similarly, type of lift system (being automated or manual) also differs. For example, articulated buses certainly have manual lift, which is more favorable for physically impaired people rather than technology based automated ones. The reason for this is explained by Participant F4-Y.

> Rather than the automatic system, the manual one is more convenient and cheaper for us. If you have an accompanying friend with you, the bus driver of an articulated bus does not even need to get off. In fact, even sometimes, one of the passengers inside opens the lift and helps us. For the lift systems, we don't favor automated electronic solutions.

As participant F4-Y notes her/his pleasure for manual lifts, regardless of seeking help, participant F3-K from the same meeting further elaborates the reasoning of favoring manual ramps.

> New manual lifts are supposed to be added to all buses in Ankara. I am happy when I see an articulated bus because, in articulated buses, driver manually opens the lift and closes it after I get on. In other automated lifts, driver presses the button, it is not certain whether it will open or not. Since it is an automated electronic system, it breaks down quickly if it is not maintained. Sometimes, it is opened bus pushing the button, then broken and not closed, and the bus becomes out of service.

Accessing municipal bus is problematic for PRMs in Ankara by means of accessibility of bus stops and transition from stop to bus. In addition, rail based public transport consists of:

- A sub-urban rail system (Başkentray): Between Kayaş and Sincan;
- Metro lines: M1 (Kızılay-Batıkent), M2 (Kızılay-Çayyolu), M3 (Batıkent-Sincan), M4 (Atatürk Kültür Merkezi-Keçiören) Metro lines connecting the city centre to Sincan, Batıkent, Çayyolu and Keçiören;
- A light rail system, Ankaray, between AŞTİ coach terminal and Dikimevi; and
- A Telpher system between Şentepe and Yenimahalle, including 4 stops.

Metro and *Ankaray* LRT systems are seem to be the most accessible public transport options in Ankara due to elevators at stations and relatively disabled-friendly design of station platforms and trains compared to municipal bus system. Participant F4-Y supports this idea by favoring Metro systems in Ankara as: “I can mostly use Metro system with no problem. There are elevators for each station. Even if they sometimes do not work properly, Metro systems are ideal transport mode for people with disabilities”. On the other hand, facilities that seem to enable easy access for urban

rail trips might have been contributing the level of the problem. Participant F2-N "There is no platform elevator for people with disabilities at Metro stations. There is elevator at each station, but mostly, it does not work or locked". As a further supporting approach to the problem, participant F1-C emphasizes the same problem as: "I mostly have problems with bus stops and broken elevators of Metro stations. Able-bodied persons can use stairs at stations, but people using manual or automated wheelchair cannot". In addition, participant F1-K2, the Head of Orthopedically Disabled Solidarity Association, similarly confirms the problem with elevators at rail system stations as: "I have serious problems with elevators at Metro stations. They are broken very frequently and sometimes not repaired for months". Broken or locked elevators are the results of maintenance and management deficiencies in public transport system, which will be discussed in a further sub-chapter.

STORY-5

Participant F1-K2

AN UNEXPECTED JOURNEY TOWARDS THE WAGON

There are two elevators going underground to get on the Metro from Batıkent Metro station. Each one is located on a separate side of the road. First of all, I am not able to use the elevator that was close to my path because there is a level difference on the floor where the elevator descends and there is no ramp. That's why I crossed the signalized junction to the opposite sidewalk and took the elevator from there. When I went underground with the elevator, there was an L-shape ramp and I was able to proceed from a 90-degree turn by moving very slowly with my wheelchair. Since there was no guardrail on this ramp, I also had the risk of falling. Despite all the obstacles, I took the metro and made a transfer from Kızılay to Ankaray train. However, the gap between the wagon and the platform is too much. To overcome this gap, I had to get inside fast, but if I went too fast, I could hit the pole in front of me. I was lucky and finally got on the wagon.

Other than Metro system, *Ankaray* LRT system play a crucial role in connecting inner city central cores to each other including Kızılay, intercity coach terminal and Dikimevi. In terms of accessibility, the gap between station platform and wagon is considerably high as mentioned by participant F2-A.

> When I take Metro, I feel much more comfortable and I am able to use it. I can get into the wagons without making anyone wait. But for example, at

> Demirtepe and Tandoğan stations in *Ankaray* (LRT system), there is a considerable gap between the platform and the wagon, the platform stays low and the wagon stays high. The front forks of my automated wheelchair are about to be broken while entering into the wagon. The setting for raising and lowering of wagons has to be frequently adjusted, but I think no one is likely to be adjusting. No one notices this problem while getting on or off.

Same problem with the gap between getting on platform and the vehicle is also mentioned by participant F3-K, who further put a special emphasis on accessibility of Telpher system in Yenimahalle.

> While getting on Metro and Ankaray, the front wheels of my wheelchair sometimes fall between the station platform and wagon. There are similar problems in the Telpher system in Yenimahalle. If the Telpher does not slow down enough while getting on, there could be problematic situations such as getting stuck in between the doors or the gap.

STORY-6

Participant F5-F

A CHALENGE: THREE ELEVATORS, ONE KEY HOLDER, A WASTED TWO HOURS

I live in Keçiören. One day, I was about to use Kızılay Metro with my friend to return home. Normally, there are 3 elevators going underground for the Kızılay Metro station, and if one does not work, the other will definitely work. We checked all of them with my friend and none of the elevators were working. It was 6 pm and due to the pandemic lock-down, we had to be home before 9 pm. Normally, it is forbidden for all elevators to be locked at the same time, and at least one of them must be working for us to return home. But they were all closed and we looked for an attendant to open that elevator for one and half hours. Finally, we were able to find an attendant, but the attendant we found did not have the authority to open the elevator. There was only one key in the pocket of one single attendant. We waited half an hour more for the key holder. After a long time, we were able to use the subway by taking the elevator.

Taxi and *Dolmuş* are the other two modes that have percentage shares among other public transport modes as 8.3% and 25.5% respectively. It is arguable that whether taxi is to be counted as a public transport mode or a different version of private car mobility for inner city trips. However, para-transit system, *Dolmuş,* stands as one of the most frequently used public transport mode having one fourth of the entire public transport trip shares in Ankara. Practically, the essence of *Dolmuş* system is based

on becoming full of passengers as long as the sitting and standing capacity of minibus enables. In addition, there is a certain route for each *Dolmuş* line and no specific locations for stops. This system is not even countable as a part of public transport system since within the content of one of the questions asked to participant of focus group discussions: "which public transport options do you prefer in Ankara?". Not even one single participant declared that they use *Dolmuş* in Ankara. Participant F3-K explains the reasoning behind not using taxi and *Dolmuş* as the fact that they are not disabled-friendly accessible modes.

> We are not able to take taxi. We, physically people with disabilities, need large vehicles, and even if there are such taxis, there is no portable disabled lift or ramp in taxis. Similarly, there is no ramp or lift in *Dolmuş*s. At least, there should be a few of them as disabled-friendly depending on the density of lines.

In addition, participant F1-K1 puts a special emphasis on, besides inaccessibility of vehicles, not willing attitude of *Dolmuş* -additionally private municipal bus- drivers to host people with disabilities due to difficulties in getting on and off for them.

> Unfortunately, *Dolmuş* and private municipal bus do not serve people with disabilities. A certain amount of financial support is given to them by municipality however, we cannot get on Dolmuş and private municipal buses by even paying the fare. Drivers ignore us.

Similarly, participant F6-E mentions that although *Dolmuş* vehicle design is renewed after 2020 for the benefit of accessibility of people with wheelchair, s/he still is not willing to use the system considering some certain drawbacks.

> I use all modes of public transport in Ankara except *Dolmuş*. There is a section reserved for people with disability behind all minibuses purchased after March 2020. It is mandatory to allocate this space to people with disabilities. But I don't prefer to use *Dolmuş* because I don't trust this allocated space to be kept empty.

Consequently, it is clearly inferred that accessibility of public transport systems is problematic with its two components: spatial accessibility (including stops/stations and their connections with sidewalk) and accessibility of vehicles. User perspective specifically emphasized difficulties in getting on and off the vehicle that is a perfectly fitting outcome complementing the results of spatial case study analysis.

6.1.2.1.3 A Dilemma: Car as a Significant Barrier or an Ignorable Issue that Facilitates Accessibility

Literature review of this research on accessibility and independent mobility reveals that car dependency is a significant part of accessibility problem. Car oriented mobility culture, as an exact mainstream user behavior in Ankara and even most cities in Turkey, occupies most parts of urban public spaces in between built environment that could have ideally been areas for walking, gathering and social interaction. On the other hand, Persons with reduced Mobility suffer from narrow and deteriorated sidewalks full of trees, posts, pits, sudden level differences etc. Therefore, it is worth to note that there is an approach that defends motorized traffic to have a negative impact on accessibility, which has already been observed in spatial case study analysis in four case study areas in Ankara within this research.

Analysis of user perspective has flourished the discussion a bit further. Participants mentioned their opinions that fit into two opposite sides. Approach of the first group of PRMs mentioned that -similar to the output of literature review and spatial case study analysis observation- car based urban mobility creates serious barriers against accessibility. On the contrary, approach of the second group states that car use is a useful facilitator for the life of PRMs despite accessibility problems sourced by car dependency. However, there is a question mark still standing: do the second group of users favor private vehicle oriented urban transport because accessibility chain is not achievable at all by the combination of walking and public transport; or would they still keep favoring car in case that all accessibility problems were eliminated in Ankara?

To depict the approach of the first group, supporting the outcomes of literature review and spatial case study analysis observations, example opinions from focus group discussions are mentioned about problems with cars and car-oriented mobility culture in Ankara. To begin with the opinion of participant F4-S, highly overlapping with what literature review proposes, an imagination of a life without cars is mentioned. The prominent aspects touched upon by participant F4-S, a visually

impaired person, remarkably emphasized three dimensions of a car-free life, which are less noise pollution, easy crossing and more independent mobility.

> A dream without cars would be beautiful. For example, you try to take a walk, even if you have no obstacles, there is such a noisy environment now. It is even difficult to breathe. Well... If there were fewer cars, we could have been crossing streets more easily and we could have lived without the help of others. First and foremost, there could be silence.

Pedestrian sidewalk, as it should be, is for people. However, a contradiction exists that is ordinary to observe for the roads in Turkey, which is occupation of parts of sidewalk by cars and motorized vehicles for parking and even sometimes driving. Participant F3-Y makes a meaningful summary for motorcycles as: “Sometimes a motorcycle comes down on me on the sidewalk”. Another opinion, supporting excessive car use and occupation of sidewalk as a part of accessibility problem, is mentioned by participant F5-F focusing on deterioration of sidewalk surface due to cars.

> Even though the road is empty, they leave their cars or trucks on the sidewalk, which causes deterioration of the surface. Therefore, pavement stones are broken, and when we step on, we become unbalanced and as a result, we fall. I experience this very often during the day.

For visually impaired people, problems and discussions about tactile pavement has already been mentioned by means of physical problems such as being slippery or intersection with barriers. In addition, there has always been a probability to face with a temporary barrier on sidewalk or on the route of pedestrian crossing (occupation of at-grade crossing), which is a parked or waiting motorized vehicle. Participant F4-S, a visually impaired person, complains about the fact that s/he feels forced to use tactile pavement who has frequently been experiencing cars, motorcycles and bicycles as barriers while walking.

> Other people persistently try to make visually impaired people walk over the tactile pavement. There are cars on the pavement, so I try to use the side of the road. It is normal to see cars on the sidewalk. Sometimes there are so many cars that I cannot even find a space to pass in between them. Not only cars but motorcycles and cyclists prevent me to walk.

As a temporary accessibility barrier for PRMs, parked or waiting motorized vehicles right in front of ramps or on crossing interrupt pedestrian flow. Participant F1-A complains about cars as: “Ramps are problematic due to not only physical problems but parking cars in front of it. We have a serious problem to pass”. Similarly, participant F1-C mentions that “Cars are parked next to ramps. They don’t care us. Although I complain about them many times, they insistently keep parking”. In addition, participant F10-M gives example about excuses of drivers as: “I mostly prefer to use vehicle road due to parked cars in front of ramps. Driver justifies his/her reasoning by saying that come on, it was only for 5 minutes!”. As a solution offer, participant F3-K proposes that “Cars interrupt our walking on sidewalk. Municipality can color disabled icon right in front of ramps; so, driver can beware of our accessibility”. It is clearly seen that motorized and even sometimes non-motorized vehicles interrupts the continuity of accessibility chain. It is still questionable that whether coloring roads with disable icons or a well-working auditing mechanism or other awareness raising campaigns are each single solutions to constitute awareness; or not.

In addition, parked cars -even it is forbidden- on the space reserved for buses to passengers’ getting on and off prevent PRMs to reach buses by using sidewalk. Participant F2-A, the Head of Turkey Confederation of People with Disabilities, mentions experiences in this respect as: “Bus stop area must be well-designed. There should be no parking around it so that the bus can approach exactly next to the sidewalk and disabled lift can be opened without any problem”. Similarly, participant F5-F explains her/his opinions as: “I don’t use bus stops, I wait on road level instead. Because there are cars everywhere and driver opens doors of the bus very far from sidewalk”.

STORY-7

Participant F7-G

STICKER METHOD TO DEAL WITH CAR OCCUPANCY

Drivers who park their cars on the sidewalk must be fined because they both damage public property and stand as a barrier against the accessibility of

> people with disabilities. There is a solution I have come up with to deal with cars on sidewalk. At home, I wrote some sentences on the stickers, took printouts, and pasted them on the windows of the cars parked incorrectly. One of the example sentences is that: 'Sorry I'm so insensitive because I parked my car here and I am not sorry'. I have done it because even if I complain, the police don't come. Let me tell you a story. One day, I called the police to report the parked vehicle and stated that there was a vehicle on the sidewalk. The police officer told me to describe the address. I replied as 'Güreller Market in front of Tarhanlar Street in Keçiören Kuşcagiz District'. The police officer asked me the building number of the market. I stated that I am not able to see, and therefore I couldn't tell the building number. Thereupon, the police did not come, mentioning that they could not get the address description accurately. That's why I developed my own sticker method.

Cars create accessibility problem for PRMs considering user perspective as well as prior researches and spatial case study analysis. On the other hand, user perspective has put forth another distinctive dimension to the relationship between accessibility and cars: car use for a person with physical impairment is said to be the most favorable mode of urban mobility since it provides door-to-door transport without any help of others and facing any of the spatial accessibility barriers.

Views of opponents of car had started with an imagination of a life without cars. Similarly, participant F5-E, the Head of the Memursen Disability Commission, mentions what if there was no car and cities were accessible for all from a more realistic perspective. S/he thinks that even the in the long run, such an ideal world will never be possible.

> I think it would be a really great thing if we lived in Ankara, where there are very few cars and people can walk much more, with less exhaust smell. However, I don't think that would be possible. Because today, Ankara is a city with a population of 5 million, it is now a very big city. Car is necessary, inevitable for people with disabilities.

Some of this group of PRMs think that using automobile provides comfort and freedom; a quite familiar motto of any other able-bodied people as members of car dependent society. Participant F4-Y strictly defends benefits and vital role of car use in accessibility in the city.

> I totally disagree that cars have a negative role in accessibility, on the contrary, cars have made our lives much easier. I am lacking a left arm and a right leg, and a suitable car has already been designed for me. I get on and go wherever I want very comfortably. I take my child for a walk, I feel freer, so I feel as if my car is my own leg and arm.

During the discussions in focus group discussions, it is clear that proponent PRMs of car are surely aware of the problems declared by opponents in terms of accessibility. However, in Ankara, urban space is so disabled-unfriendly that they avoid themselves to try to achieve accessibility chain by using sidewalks and public transport. It seems achievable to reach inner city destinations by car for a specific group of PRMs, who afford to own a car and whose disability level is appropriate to use a car (i.e., car use is not possible for people having high degree visual disability). In fact, such a choice of private car use is a broader issue not specific to PRMs but that has been adopted as a mobility habit in Ankara, and even most cities in Turkey. Therefore, to remind ontological stance of this research, sustainable transport modes that are public transport, walking and cycling must be supported to eliminate social and environmental impacts of car dependency in a general sense.

Considering such a car dependent mobility behavior for a certain group PRMs, a new accessibility challenge emerges for them as disable car parking. They are more interested in dimensions of or barriers around car parking by means of accessibility and independent mobility. Participant F5-E defines real problem about accessibility as challenges with disabled car parking.

> To be honest, I have nothing to do with public transport. I usually travel with my own car, but as I said, I am not faced with problems with public transport and sidewalk as any other people with disabilities. My problem is with car parking. Parking space specific to us is sometimes occupied by others. When I leave my car to a further distance, then I have to use those inaccessible sidewalks.

For some PRMs, car means beyond being a tool to go from point A to point B; it constitutes the essence of accessibility, working and even socializing. In other words, car is a tool for freedom of mobility and even a tool for the Right to the City. They so get used to be dependent to car in daily life that they almost even never imagine

to use public transport and walk, which is quite similar with current unsustainable transport and car dependency discourse in Turkey. Participant F7-V complements the discussion with her/his opinions.

> In terms of accessibility, the car is our hand and leg, everything. What a walking stick means for a person with visual impairment is the same as what my car means to me. When something happens to my car, it means that I stay at home until it is repaired.

A final significant point is put forth as an emphasis about deficiencies in land use and urban spatial planning, which is made by participant F8-A keeping the emphasis of the consideration of equivalent relationship between car and freedom of their life.

> Our car means everything to us. We cannot even go to work without a car. On the other hand, if our cities were designed in a more compact manner, that is, if our work, market, and parks were designed in easily accessible distances, of course, I would not use my car. Its economic cost is quite high for us, too. If Ankara was accessible, I wouldn't use the car because it would be better for socialization and our health. But, now, I don't see any future without my car in Ankara.

Consequently, two opposite poles emerge as the ones against cars and the ones favoring cars. Conclusive analysis of these two groups is presented in Table 6.4. The point to be noted as a result of this analysis is that both groups seek independent mobility. One group of PRMs do not use car due to socio-economic condition, physical disability level or their idealistic stance against car use and its unsustainable consequences. Another group of PRMs prefer to use car since they afford to have a car and/or they see no future for cities to provide perfect accessibility with sustainable modes, which is quite similar with the arguments of car dependency discourse. Both groups pursue independent mobility through differentiates channels.

Table 6.4. Conclusive Analysis for the Dilemma about Car Use and Accessibility

The Ones Against Car	The Ones Favoring Car Use
- Car oriented urban mobility creates barriers, narrows roads as well as sidewalks and, most importantly, gives priority	- Car is considered as a tool to obtain their right to access and mobility freedom. - PRMs, who are able to buy and use car, have accessibility problems with car parking, with the route between parking space to building.

Table 6.4. (continued)

to cars rather than pedestrians. - They are exposed to inconsiderate attitude of drivers that generates consequences related to spatial accessibility and social exclusion.	- A critically significant point: persons having high level disability and people with visual impairment are not able to use car. - Another critically significant point: persons who cannot afford car are not able to buy car. -***Therefore***; Among PRMs, car use provides freedom to a very limited group of people. Accessibility, enabled by car, does not provide socially-inclusive and sustainable achievement of accessibility chain.

6.1.2.1.4 A Dilemma: Parks as Problem-free or Problematic Spatial Indicator from User Perspective

Analysis of user perspective puts forth another bifurcation point by means spatial aspects of accessibility discussions. Spatial accessibility analysis is four case study areas in Ankara shows that accessibility of parks is acceptable despite several problems particularly with entrances. It needs to be noted that spatial accessibility analysis of parks was done in a very limited number of examples of parks. However, focus group analysis shows that parks are inaccessible and not preferred by PRMs due to problems with walking path and objects playing the role of barriers for especially people with visual impairment.

Participant F1-K1 finds parks considerably problematic by means of surface of paths and lighting contrary to the findings of spatial case study analysis in Ankara.

> The surface of walking paths is not suitable for people using wheelchairs and walking sticks. Cobblestone pavement is sometimes used in parks that is not possible to be used by physically and visually impaired people. And lack of lighting is another problem for people with visual impairment.

Similarly, participant F4-Y reveals an emphasis to inaccessibility of surfaces in parks as: “There is one or two cm gap in between each surface materials. Since I have

prothesis and use wheelchair or walking stick, I deeply feel the risk of injury or falling down. They all need to be re-designed". In addition to problems mentioned by physically impaired people, parents with baby stroller experience similar surface problems since wheels of a baby stroller is quite similar with the wheels of a wheelchair in terms of size and capability. Participant F12-B, a parent with baby stroller, mentions accessibility problems in parks that exactly prevents independent mobility as: "I definitely never want to go to parks with a baby stroller if I was alone. Its wheels constantly get stuck in the gaps on the floors in parks. I can only go to the parks with my baby in my arms or with my husband to help me with challenging barriers". In addition, participant F10-G puts a special emphasis on inaccessibility of resting areas in parks as:

> Parks are in no way appropriate for any single person with a disability. Think about it, how is it possible for a disabled person to reach and sit on benches and use tables in parks? I don't prefer to go to parks at all since I haven't been able to manage to achieve it.

Accessibility level of urban space, specifically of parks, differs in terms of many various aspects, one of which is the type of disability. People with visual impairment have specific problems in parks with trees as they have while walking on the street. Participant F3-Y, a visually impaired person, shares experiences about accessibility inside parks.

> When I go to a park with my friend, a tree branch hits my head while walking on the path. It may seem very nice in terms of landscaping there, but it creates a significant functional problem. Sometimes, while walking in the park, I suddenly get into the thorny bushes because there is no warning on the ground. These are very disturbing.

Having a rest in open air and going for a walk in parks is one of the basic human rights as parts of psychological and social refreshment. It is seen that, as a part of the Right to the City, parks have accessibility problems and are not well-designed for all. In the same focus group meeting, participant F4-S puts a special emphasis on orientation problems in parks.

> I am very upset about the accessibility of parks. I want to take a walk in an open area, but if there was something like a strip, something like a wall on

> my path, I could have followed it. There are huge open spaces in parks I cannot understand where I am going, to the back or forward. I have trouble in finding my direction in open areas.

In summary, there seems to be a dilemma: on-site analysis in parks did not refer to remarkable problems; however, user perspective puts forth parks as one of the most inaccessible urban land uses in Ankara. First of all, in spatial case study analysis, data were collected from six parks, which might have remained small in number of example parks taken since problems could not be extracted as user perspective mentioned. Therefore, this finding reveals the meaningfulness of making investigation over user perspective by means of accessibility of PRMs. It also makes sense to assume users as PRMs rather than only people with disabilities since accessibility problems differs with respect to type and level of reduced mobility.

In conclusion, as inferred from spatial case study analysis carried out in four areas in Ankara, user perspective confirmed that accessibility of urban space is problematic by means of barriers on each prospective link of accessibility chain. In addition, user perspective has flourished the quality of spatial accessibility problem definition process by adding some unique discussions to the content. In this spatial accessibility analysis from user perspective, barriers in accessibility chain, accessibility problems with public transport systems, a discussion about car use in relation with accessibility, and finally problematic situation of parks. Heretofore, accessibility problem definition is investigated with respect to urban design and planning. However, the hypothesis of this thesis states that only solving spatial accessibility problems has never been enough itself; a more comprehensive web of problem definition needs to be generated through adding two more dimensions: social aspects and administrative aspects to define accessibility problem.

6.1.2.2 Societal Aspects as the Barrier

Within the context of the thesis research, spatial accessibility problems are revealed through spatial case study data collection analysis and user perspective. It is quite

certain that there are fundamental spatial accessibility problems. However, problems related with urban space are not mere aspects of accessibility as stand still phenomena waiting for solutions. There are also social consequences of spatial inaccessibility and social reasonings resulting in not willing to go out as pedestrians for PRMs. In this section, social aspects as barriers are examined under four topics; social exclusion along with unsociability, lack of awareness, a dilemma questioning the term 'positive discrimination', and learning as a process of solution.

6.1.2.2.1 Social Exclusion and its Unsociability Consequence of Inaccessibility

Accessibility problems related with seamless walking and the use of public transport prevent PRMs to reach their destination, which seems to be the ultimate realistic outcome of inaccessibility. On the other hand, at least as significant as this outcome, a feeling of social exclusion is frequently experienced by PRMs that results in not willing to step outside. For example, a person with wheelchair goes out, encounters with problems with the surface of sidewalk, ramp and crossing complemented by unpleasant attitude of other able-bodied people and drivers, which ultimately discourages her/him to go out as pedestrian and results is a tendency to drive or not willing to go out and unsociability consequences.

This part is elaborated under several topics supported by user perspective, which are;

- Ignorance process against people with disabilities and social exclusion,

- Social embarrassment

- Unsociability of people with disabilities and the resulting outcome of not willing to go out.

-Different approaches to the idea of positive discrimination

People with disabilities obviously feel as a result of the attitude of other able-bodied people and policy-makers that they are considered as marginalized group of people requiring special subsidies to be considered as a part of society. Although PRMs

pursue to become equal pedestrians as others, they feel that they are under a easily visible process of ignorance. Participant F1-K1 notes the source of accessibility problems as their ignorance process from social life.

> Accessibility interventions seem to be as if everything is all right but, in reality, people with disabilities have been condescended. Policy-makers make speeches on TV emphasizing the rights they gave to people with disabilities. They assume that people with disabilities don't pursue their rights and raise their voices; therefore, they can easily be suppressed. In fact, we have been ignored in social life, which is the main reasoning behind the accessibility problems we have.

Such an ignorance is said to be supported by social exclusion in professional life, too. Participant F8-V, president of Ankara Provincial Disabled Assembly, mentions that people with disabilities are prevented to become active citizens in social and professional life. When they are prevented to be actively participate in decision-making within their own professional authority boundaries, or to fulfill even their parts of job, they are felt as 'others', as a different group of people apart from able-bodied ones.

> We are not disabled; we have challenges because obstacles are constantly imposed against us on the street and in society. For example, a disabled person should put much more effort to obtain a title or a position in her/his career. Even if you are qualified, the employer wants you to sit on the desk with a minimized intervention to works. Now, for example, this is an obstacle that society imposes on us that can also be called mobbing. This is one of the most common complaints that the Ankara Provincial Disabled Assembly receives. The employer makes them feel that sit here, get your salary, don't ask for a career. Some groups of people with disabilities feel OK with getting paid without doing anything. But this results in an ignorance process from society.

Within the context of ignorance process against people with disabilities, Participant F3-Y contributes the discussion by mentioning that other people are not aware of the capabilities of people with visual impairment as an equal individual having equal right of walking, working, enjoying and accessing to any urban function.

> Although I have visual impairment, I can be useful to the institution. I have communication skills, undergraduate and graduate degrees from METU. I am a qualified person. What they told me was that sit at that table and don't get

too involved. If I'm getting paid, I don't want to sit, I want to be useful. But people at work persistently try to ignore me.

Ignorance process is complemented by an embarrassment outcome for people with disabilities since they are felt that as if they are different and external part of socio-spatial urban life. For example, there many interaction arenas of people with disabilities with other able-bodied people, in any moment of urban life such as while using public transport and benefiting urban services. Participant F3-Y exemplifies the thoughts in the mind of a physically impaired person under circumstances of being condescended by other people resulting prospectively in quitting job and even not to go out.

> People with disabilities are considered as just a remaining obsolete part of society. As if nothing would change even if we didn't exist. I have witnessed persons with the following speeches who have a lack of consciousness and try to ignore us: 'Can a disabled person work here, bravo!' When I heard these, I had many thoughts like I wish I had not come, should I quit my job and go. This wears out both my mental and physical health, I have become embarrassed and unhappy in such cases and I don't even want to go out.

STORY-8

Participant F9-E2

HAVING A TICKET AT THE FRONT ROW, WATCHING THE SHOW AT THE BACKMOST

Middle East Technical University is one of the best in Turkey. But have you ever thought that you are a disabled person trying to access the Kemal Kurdaş Hall at the Culture and Convention Center? One day, I bought a ticket for Tedx and the talk was at Kemal Kurdaş Hall. I wanted to watch from the front row since I paid extra money for the ticket, but inside the conference hall, there are too many steps and no handles. That's why I had to watch from the backmost row. When I go to other shows, the hall attendant takes me down to the bottom rows and I had to ask the attendant to take me out during the break, but I am embarrassed. I didn't want to tire the attendant. If handles exist in halls, I would be able to take care of my own needs without the need of anyone, I could watch from the front row as all other people.

Becoming unwilling to step outside of home is a result of social embarrassment and ignorance and caused an increase of the level of social problems or even diseases. According to participant F7-S, even the effort of help of other people makes people

with disabilities suffer from serious psychological consequences, mentioned as: “In my conversations with my disabled friends, I frequently hear that they complain about other people trying to help them to overcome barriers who make them feel embarrassed and cause mental disorders”. People with disabilities complain about the moments that other people trying to help even if disabled person has enough capability to do the task. For example, participant F2-A explains the process of getting on municipal buses, which contains an embarrassment caused by driver and other passenger no matter it was intentionally or not. Therefore, reactions of other able-bodied passengers and drivers, or even prospectively-felt reactions, forces people with disabilities to take extra precautions to have their right to access in the city.

> If the bus is not articulated in Ankara, there is an automated lift for us at the middle door. The automated lift takes a long time to open and close at least 3 minutes. I'd be a little embarrassed since the driver puts extra effort just for me. Sometimes, I plan to get off after 2 stops, the driver deals with getting me on for 3 minutes and getting me off for another 3 minutes. Meanwhile, other passengers start to get crowded behind me. If the bus is low-floor, it is easier for us to open the manual ramp and get on. One of the passengers mostly helps without bothering the driver. I can't do it myself because the distance to open the ramp is a bit far. Let's assume I could reach, but how would participant F2-N do it? She has ALS disease. Asking for help and making passengers wait makes me feel uncomfortable and embarrassed. So, for short distances of one or two stops, I go on foot by myself so as not to be exposed to the reactions of other passengers and drivers.

Participant F4-Y gives example about redundant-help effort of driver and staring of other passengers towards her/him that results in an embarrassment feeling.

> When I get on the bus, the driver sometimes says 'OK come' without even looking at my transport card. Driver wants to help me, but it is not helping. Meanwhile, I feel that other passengers on the bus stare at me with pity eyes. I feel so embarrassed at these times. Similarly, I have a friend who doesn't use disabled elevators since he doesn't accept a discriminative classification as disabled and others. He says 'I don't want to be considered as disabled, as different in society; I am normal'. So, he tries to use stairs with all challenges. This is an obvious psychological effect of inaccessibility of Ankara.

People with disabilities do not always seek for help however, some other able-bodied people assume that if a disabled person is seen trying to do something, they have

always been in need of help. The very first rule of establishing the way towards obtaining perfect accessibility chains is letting PRMs to feel that they are equal part of urban life. For example, in an inaccessible city like Ankara, a certain amount of help is to be needed and the way of helping under what kind of attitude is primarily significant. Participant F3-K exemplifies a case of trying to benefit a specific urban service and -probably unintentionally and due to lack of awareness- discouraging response resulting in embarrassment for the disabled person.

> I always need someone's help when I use ATMs or go to banks. I use a wheelchair and I have difficulties reaching the desk or kiosk level. When I ask for help, people say that 'Don't worry, I'll do as much as I can for you'. At this time, I feel embarrassed and humiliated. My seeking for help is not considered as same as other people's asking for help. I want to be equal with everybody.

STORY-9

Participant F4-S

A STEREOTYPE: ALL PEOPLE WITH DISABILIES ARE IN NEED OF HELP

One day, municipal staff was distributing something on the street. I think it was food aid for low-income people. The staff wanted to give one to me too, but I said I have a job and I don't need any aid. The staff replied to me: 'But you have to get that aid because you are disabled'. I asked why and he replied 'because people with disabilities are helped'. I persistently resisted and did not receive the aid. Unfortunately, the stereotype that people with disabilities are in need of help settled in people's minds.

The ultimate and undesirable outcome of social ignorance and embarrassment, related to spatial aspect of urban accessibility, is unsociability of people with disabilities and the process of becoming not willing to go out. For socially excluded people with disabilities, accessibility chain is being interrupted even before they step outside of home since perception of the term, ‘disabled’, is one of the greatest barriers against accessibility. Such discouraging cases they experience one after another results in unsociability or not having tendency to become a part of urban socio-spatial life. Participant F3-Y, a visually impaired person, explicitly summarizes the unsociability process caused by urban spatial inaccessibility.

> I am not able to go from one place to another, there are always barriers. Obstacles on the pavement, obstacles sourced by other peoples' attitudes... Now, when I go out, I often think: "Shall I really go or just stay at home without encountering any problems?" I feel that I have been afraid of socializing.

Barriers against accessibility along with the COVID-19 lockdown in Turkey is mentioned to cause psychological disorders since adopting not going out as a daily routine. They do not feel safe due to spatial barriers and comfortable due to perception of able-bodied people. Participant F2-N explains her/his way towards unsociability originated from accessibility problems.

> Indeed, I am now afraid to leave my house. I began to feel outside the boundaries of our society. Before my ALS disease, I was able to cope with these difficulties on my own. If I want to go out now, I get in my automated wheelchair, and I will try to find people to help me with each accessibility barrier I encounter. It started to become a burden to me so that I started to become unsociable, which creates psychological trauma for people with disabilities. Especially during the lockdown processes in the COVID-19 pandemic, I can say that I completely locked myself in the house.

A significant dimension of accessibility problematic is highly related with the perception of the term disability. A person is to be with reduced mobility, which does not make her/him different or unequal with others. The point to be emphasized attention is not being disabled since what makes disabled are the people having reduced mobility is socio-spatial accessibility barriers. Participant F5-F explains this process by mentioning unpleasant perception of disability in society as a superior reasoning of inaccessibility in Turkey than spatial accessibility barriers.

> So, in my opinion, what we call disability is not that some people have problems with their feet or eyes. Disability is the situation we are exposed as a result of the barriers created by able-bodied people. If sidewalks and ramps are designed in accordance with the rules, their rights will not be seized. Environmental problems can be solved by obeying the rules. However, and most importantly, if people look at people with disabilities on the street as if they see a bogeyman, then they cannot maintain their life positively. If people with disabilities are treated as others, they don't even want to go out and socialize. This is what has been happening in recent years in Turkey.

Participant F9-E2 gives another example of the perception of able-bodied people that discourages them to stay at home, namely within their comfort zone without any social and spatial accessibility barriers.

> I hesitate to go out. People look at me with by feeling sorry, saying 'Poor guy! he cannot walk'. When I am exposed to such attitudes, I don't feel like going out. Actually, I say it's better if I never go out. The pavement is bad, accessibility is poor. People with disabilities prefer to stay at home and stay in their comfort zone. Before the pandemic, there has still been a social lockdown for people with disabilities as if there was actually a pandemic.

According to contribution of participant F9-E1, considering the comprehension of socio-spatial accessibility problematic from two sides, PRMs and other able-bodied people, a vicious cycle is visible. PRMs hesitate to become pedestrian due to accessibility problems; besides, urban space has insistently been left inaccessible since PRMs is not willing to go out. Such a prospective repetitive cycle is explained by participant F9-E1 over an example of accessibility of a café.

> Imagine that you have a cafe. You don't even think to make a smooth entrance for people with disabilities since they barely come to a cafe. On the other hand, we don't go to that cafe because there is not a smooth entrance for us. This is a repetitive cycle that prevents us to go out. It is same with urban planning. Wrong planning makes us not go out.

There is a group of PRMs, who are sick of dealing with social and spatial accessibility problems. On the other hand, there are others not isolating themselves from society despite discouraging accessibility barriers. Participant F9-B thinks that people with disabilities should not set themselves apart from society.

> If we refuse to go out, society does not beware of us. I have certainly encountered many social and environmental problems during my university education. I sometimes felt sad and disappointed but I have never isolated myself from society. Isolating yourself from society is not a solution. What others think about me does not make sense, because I am the one who lives my life.

Similarly, participant F7-G is highly aware of direct or indirect social exclusion against people with visual impairment; nevertheless, s/he has refused to stay within the boundaries of comfort zone, at home.

> There are environmental, social problems and biases against people having visual impairment. We also encounter extra financial burden since sometimes we are supposed to take taxi for a distance that can be walked by an able-bodied person. However, I don't stay at home, I force the boundaries of my comfort zone. I always try to encounter accessibility barriers.

In summary, participants of focus group discussions put forth social exclusion triggered by an ignorance process against people with disabilities while they fulfill their right to accessibility. This process of setting apart could most probably result in embarrassment as well as unsociability of people with disabilities. All these outcomes are highly linked with urban spatial accessibility as a reciprocal process cycle affecting each other. The more inaccessible the urban space and the more socially exclusive the society are, the more people with disabilities hesitate and become not willing to go out. As a result, less PRMs are to be seen on sidewalks, parks and public transport which might seem to cause a decrease in the demand for mobility right. Less demand brings about less socio-spatial accessibility enhancement interventions; and a less accessible urban space with a decrease in interventions brings about less PRMs on the street. Consequently, there seems to have an urgent need to break this reciprocal cycle implied by user perspective.

6.1.2.2.2 Lack of Awareness of People with Disabilities, Able-bodied People and Drivers

One of the prior emphases of focus group discussions was lack of awareness for certain groups in daily life that directly affects accessibility of PRMs. The first group is the main beneficiaries of accessibility -people with disabilities-, another group is other able-bodied people and the last group is drivers of buses and private cars. Some other groups and example insensible approaches were exemplified in focus group discussions, however only the ones related directly or indirectly with accessibility of urban space are taken for the analysis.

Supporting opinions emerged on the idea that there is a confusion to make a compromised problem definition favoring right based approach for accessibility

among people with disabilities. A considerable number of participants indicated that societal aspects of accessibility need to begin with a consensus on problem definition among people with disabilities to target accessible cities in Turkey with independent mobility. However, whilst some of the beneficiaries of accessibility, namely people with disabilities, pursue individual financial benefits without contributing the long-term solution of maintainable accessibility chain, some others are aware of obtaining preciousness of obtaining accessibility right being equal by means of benefitting each single urban service. Participant F2-A complains about not having a consensus on the vitality of accessibility problem.

> People with disabilities do not agree on what the accessibility problem is and how the problem is to be defined. First of all, we have to reach a consensus among ourselves as people with disabilities. Shall we seek our accessibility right to be given or wait to get help? The main goal is an entirely accessible world. The main problem is that we are not able to go from one place to another seamlessly.

By accepting accessibility as a right to be pursued by people with disabilities without expecting others to struggle on behalf of them is expected to bring an understanding that individual privileges are not the things to be pursued, but a right based approach is the one to be adopted among people with disabilities. Participant F4-S briefly puts forth problem as not beware of the underlying objective.

> The approaches of people with disabilities to the concept of disability also vary among themselves. In addition, the right-based approach is not an embraced perception among people with disabilities. Demanding more help, and social and financial privileges for people with disabilities does not advance our rights. There is no agreement among people with disabilities about what we really want.

As a supporting argument, participant F4-Y answered a question arose during 4th focus group meeting: what if everywhere was accessible? Do we still have problems of accessibility?

> OK let's imagine that everywhere was accessible. There would still be accessibility problems since there has always been a societal factor. We have not been agreed on a consensus about what we want. Sometimes, people with disabilities give me a call and ask about their rights by means of financial privileges they have such as free entrances, discounted services. They barely

> ask about their human rights or accessibility rights. Or from another perspective, some of people with disabilities even make their relatives benefit from their discounted car purchase right. Their relatives buy the car as if they are disabled and even park their car to special disabled parking. This is the abuse of rights given to them.

Incapability to reach a consensus for the value of independent mobility in an accessible urban environment could probably be an outcome of lack of awareness among people with disabilities as a problem directly affecting accessibility. In addition, the other complained group of people are the ones that do not feel what PRMs experience in daily life. These able-bodied people were firstly criticized by participant F4-Y with a meaningful approach with respect to urban and architectural design considering a standard body scale that had already been presented in theoretical part of this thesis between Le Corbusier's (1961) and Thomas Carpentier's (2011) arguments.

> Both the disabled and the able-bodied people contribute to the accessibility problem. We have never learned to live together and we have no respect for each other. Designers of the environment have taken into account the dimensions of a standard human body. They did not consider different people as if they did not have the right to walk in the city.

STORY-10

Participant F4-Y

MANIPULATION OF A PRIVILAGE

Do you know what a few people with disabilities do? If a person with a disability has a report showing s/he has more than 60% disability, s/he has the right to use the high-speed train with an accompanying person for free. In other words, the accompanying person can also use the train for free. The person with a disability waits in the ticket hall and when s/he sees the passenger going to Istanbul, says: 'Hello brother, come and don't buy a ticket. The ticket costs 85TL. You can travel beside me as an accompanying person and give directly 30 TL to me. I'll make you get on the train for free'.

Able-bodied people are also the designers, architects, sociologists and engineers of urban space and societal organization, who need to be aware of the fact that we do not live in a world of standard people. Therefore, planning of daily life with its spatial and societal aspects needs to ensure universal design by the group of people

composed of people with disabilities and people having enough awareness to empathize. Participant F9-B highlights a lack of understanding of able-bodied people about how people with disabilities experience the city.

> I think the main reason for having accessibility barriers is not actually elevators, sidewalks, or buses; it is a lack of empathy for able-bodied people. there can be a problem with the sidewalk and fixed sooner or later, but if they don't try to feel how we feel, it will be impossible to solve accessibility problems.

Lack of awareness of able-bodied people is also exemplified by participant F1-K2 with a specific example of the use of elevator with a priority.

> Able-bodied people don't understand what we experience. Elevators are a part of the problem for example. People with disabilities have priority to use, but insensible people seize our priority, and sometimes we were not able to find a room to use the elevator. They don't aware of people with disabilities in the society.

STORY-11

Participant F4-Y

A COMPLETELY MISLEADED PERCEPTION OF DISABILITY

Once, I didn't believe what I had heard. One of my able-bodied friends said to me: "Oh guy, you can buy a car with a discount, water is free, you can take the bus for free, you can enter the cinema for free, football games for free, theater for free... I wish I was disabled too." He dares to say it! Let's say you make each component of the city accessible, unless you eliminate a mindset like this, would there be a solution? There would definitely be no solution.

Helping people with disabilities insistently without considering their capabilities and right to access independently addresses a misunderstanding as if each single person with disability has always been in need of help. However, one of the most prior and evident outcomes of focus group discussions is that PRMs want to fulfill daily tasks by themselves for the ones that they have enough capability to manage to do. Although initial intention of able-bodied people is to help to enhance accessibility, it sometimes generates even worse outcomes. Participant F4-S defines accessibility as a right that does not always requires help of others as: "We want to be independent. This is a right for us. But, since this right is not recognized by able-bodied people,

they sometimes insistently try to help us. I am a visually impaired person and I can do almost everything by myself". In addition, inaccessible urban space makes people with disabilities not frequently go out, and this results in less visibility for their presence in social life and ultimately inaccessible urban environment as participant F10-M mentioned: "Able-bodied people become very surprised seeing us outside achieving to go to a place. They don't get used to see us as a pedestrian; so, urbanization in Turkey, entrances of buildings and main accessibility precautions are inappropriate".

In summary, awareness deficiency is put forth considering problematic attitudes of people with disabilities and other able-bodied people. In addition, another group of people affecting accessibility of PRMs is drivers of private cars and public transport. Automobile drivers and PRMs have a plenty of nodes within accessibility chain. Basically, carriage way part of roads belong to drivers and sidewalks are to pedestrians. However, cases occur that drivers seize right to access of pedestrians as well as PRMs. For example, participant F10-M focuses on ignorance of drivers at crossings as: "A visually impaired person passes slowly while crossing the street, and cars honk persistently. If a person is passing slowly, of course, there is a reason. There are some ignorant drivers".

Pedestrians have priority at crossings even if it is not a signalized junction as a guaranteed rights in the content of legislative measures in Turkey. However, lack of awareness in this sense was frequently mentioned in focus group discussions. As a result of spatial case study analysis in Ankara, no assessment could be made about problems sourced from the attitudes of drivers, however user perspective clearly puts forth lack of awareness as a social barrier preventing people with disabilities to reach urban services. Participant F1-C relates pedestrian priority and insensible attitude of drivers.

> At crossings, the green duration of the traffic light is short. Sometimes at intersections without signalization, some drivers have started to be sensible, they give passing priority to pedestrians, but many of them still do not even brake. Pedestrian priority is not observed by drivers.

For people using wheelchair, getting on the bus is a fundamental challenge since most of bus stop platform does not conform to 20 cm standard, there are still buses that are not low-floor and lifts at the door could be broken. And there is another reasoning as a barrier, which constitutes the societal aspect of the problem: attitude of bus drivers. If the lift is automated, driver needs to push button to make system work, and if it is the type that opened and closed manually, then bus driver has a responsibility to fulfill all the necessary actions. According some of the participants of discussions, insensible attitudes of bus drivers sometimes cause interruptions on accessibility chain of PRMs. Participant F1-K1 emphasizes unwilling attitude of bus drivers that s/he experiences.

> Bus drivers sometimes just says to us "my lift is not working". So, we keep waiting for a bus with a well-working lift. According to the rule, bus drivers must control the lift in the morning before departure. However, we still see many buses with not working disabled lifts. Or some of the drivers do not want to deal with getting us on the bus by ignoring.

Presence of intention of bus drivers to fulfill daily maintenance of lifts and to provide a seamless bus trip to PRMs by means of enabling a well-working lift. Sometimes, ignorant attitude of bus driver is combined with automobile drivers parking right on or adjacent to bus stop that prevents bus to approach adjacent to sidewalk. Participant F2-A emphasizes that such cases happen quite frequently and most of people using wheelchair complains about this issue.

> I want to state an experience that most of physically impaired people suffer from. Drivers are insensible to consider our accessibility right. Have you ever seen a bus approaching bus stop right adjacent to sidewalk level? I barely or never see. Some of car drivers are insensible because they leave their cars right on the place where the bus stops or on a place preventing the bus to approach adjacent. In addition, some of bus drivers are insensible because they sometimes ignore us in order not to deal with getting us on the bus. These both insensibility of drivers of cars and buses happens simultaneously that makes me very angry.

STORY-12

Participant F1-K1

OPEN THE LIFT AND GET ON THE BUS BY YOURSELF!

> Private Municipal Buses are one of the biggest problems for people with disabilities. Its drivers only have commercial concerns. Recently, they have developed a rule on their own. Persons with disabilities over 80% have the right to have an accompanying person while using public transport. I want to repeat that this is a right and a need for us. But recently, especially Private Municipal Bus drivers say “if you don't have an accompanying person with you, I don't have to get down and open the lift for you”. Municipal bus drivers also started to do this. I have come across this sentence at least 10-15 times in the last month. The driver doesn't get down and help me, he wants me to get on by myself, trying to punish me when the accompanying person is not with me. This is so humiliating! In addition, there are situations like the bus comes to the stop and the driver opens the door and says to me: 'The bus behind me has a lift, wait for it'. Now, it is not clear whether it is 10 minutes, 15 minutes, or half an hour that you say is coming after me.

In summary, three different group of actors play significant roles for PRMs to enable a seamless accessibility chain that became prominent among the opinions of participants of focus group discussions, which are people with disabilities, other able-bodied people and drivers. In other words, it could be mentioned that there is a lack of awareness ensuring that being mobile and reaching urban services independently for PRMs is one of the human rights. Certain training programs and awareness raising campaigns will be discussed in this sense in conclusion section.

6.1.2.2.3 A Dilemma of Positive Discrimination: Isn’t It Still a Discrimination Even It Is ‘Positive'?

Each participant of focus group discussions had a philosophical stance among two opposite point of views. The first one is that to fulfill the right to access; there is no problem with having positive discrimination by providing some extra privileges to people with disabilities. The second one is that positive discrimination is still a discrimination even it is positive. The ones defending the first view think that if privileges are not provided to people with disabilities as positive discrimination to enhance easier accessibility in the city, they will have become more and hesitating to benefit urban services independently. On the other hand, the ones defending the second view thinks that providing positive discrimination is not a maintainable

solution and what they need is just to have equal opportunity of access from one point to another in the city. In this part, proponents and opponents of these two views about positive discrimination are presented one after another.

Before giving examples, legal base of positive discrimination for people with disabilities is noteworthy to be provided. According to Article 4/A of Law No. 5378, Law on People with Disabilities, it is stated that:

> All forms of discrimination about disability including direct and indirect discrimination are forbidden. Necessary measures are taken for people with disabilities to ensure equality and eliminate discrimination. Special measures to ensure that persons with disabilities utilize their rights and freedoms fully and equally cannot be considered as discrimination.

It is clear that any discriminative measure is not allowed; on the other hand, the last statement of this article changes the dimension of the discussion, which is the one addressing the concept of positive discrimination, at least inferred in a way that people with disabilities have the right of positive discrimination that was guaranteed in the law. The last statement results in a gap since it is not clearly understood that how the framework of these special measures are drawn.

Firstly, the proponents' stance is exemplified along with their own words. At the end of the examination this side of views, it will be understood why they seek accessibility privileges and what the reasoning behind pursuing a sort of positive discrimination is. Participant F10-M wants to have more special area reserved in municipal buses.

> There is a special place reserved for the disabled in buses. I get on, then some other physically disabled or a parent with a baby stroller gets on after me. In such cases, we get stuck in the bus. There should be more areas reserved for people with disabilities.

Actually, even one single comment of participants of focus group discussions is quite valuable to understand their general approach to the issue of seeking privileged rights. In the 9th focus group meeting, two different participants complemented each other in terms of their opinions about the visibility of disabled person pictogram on their private car plate. According to participant F8-V: "Previously, there were plates

special to people with disabilities. Now, all the plates are standard. It was beneficial for others to see our special plate, behave carefully and give priority". Similarly, participant F8-A supports such a priority as: "I totally agree. In traffic, plates mentioning our disability was facilitating our accessibility in the city".

STORY-13

Participant F11-A

DISCRIMINATION TEST RESULT: POSITIVE!

One day, I was going to the district governorship and showed my disabled card in the HES code (COVID-19 verification application) queue at the entrance to come to the fore. The police officer told me to get in line. I got angry. I said you are a police officer and I don't need to prove my right to you while you should defend my rights first. Despite the police officer, I got the front of the line, I don't need to get people's approval because this is my right. Front of the line is my right in any case. The duty of the police officer is to approve the right given to me. I experience such situations because of the police officer's lack of awareness and knowledge.

In the sense of favoring priority of people with disabilities, another opinion was put forth by participant F11-E, who defines positive discrimination as a right and differentiates it from able-bodied people to have compassions for people with disabilities in an extreme manner.

> Since people with disabilities have the right to positive discrimination, other people should beware of this fact. However, able-bodied people need to make sure that our situation should not be perceived as emotional exploitation and they don't need to feel pity for us. In line with their duties, they should give priority to us. We need such positive discrimination to have the same accessibility level as other able-bodied ones. As there is positive discrimination for women, there should also be for the disabled.

On the other hand, a significant number of participants consider positive discrimination by means of accessibility as a sort of discrimination deepening inequality. Accepting people with disabilities as a marginalized group of people that have always been in need of help and additional privileges only contributes the level of social exclusion and prevents to open a path towards a solution to remove all aspects of accessibility barriers. For example, Participant F4-Y considers the process of getting on the bus as same as other able-bodied people as one of the steps towards

accessible cities composed of equal citizens: “Sometimes bus driver prevents me to validate my public transport card when I get on the bus. He just says ‘OK, pass’. But I don’t want any privilege, I want to be same as others”. Besides, same participant further contributes the discussion by giving example of elevator use.

> Disabled elevator... What a ridiculous term! This term means that no one other than the people with disabilities can get on it, let's lock it, let one guard have the key. Once I come to use the elevator, I became fully dependent on this guard. These elevators should always be under operation. I want to use the same elevator with others without being exposed to such discrimination. Enabling disabled elevators as a right for us just doubles our accessibility problem and discriminates us.

Giving priority does not always mean improving social and spatial justice for PRMs. Those specific cases of people with disabilities reveal that it sometimes affects negatively the deepness level of the problem. The last example in this sense is given as an opposing argumentation in the 2nd focus group meeting between participants F2-N (proponent of positive discrimination) and F2-A (opponent of positive discrimination). Both sides clearly explain why they defend the approach they adopt by means of positive discrimination with differentiated comprehension of legal base of the discussion. Table 6.5 shows the argumentation between two opposite sides.

Table 6.5. Two Specific Contradicting Approaches to the Idea of Positive Discrimination by Means of Accessibility in the Same Focus Group Meeting

Participant F2-N: Opinions of the proponent of positive discrimination	**Participant F2-A: Opinions of the opponent of positive discrimination**
- I want my special area in buses back. Nobody has the right to occupy this space. Even if the bus is full, the ones occupying my area need to get off. They have to respect my rights and priorities. There is a fact that a special area is reserved to people with disabilities in the bus, so I always have the right to use this area.	- Everybody is equal in buses. Each space belongs to everybody. If the bus was crowded and there was no space for even one more passenger, no person with disability should not say "get off the bus, I want to get on". We are equal with others. If other people wait for another bus, we have to wait for it, too. It doesn't matter that one of the waiters is disabled or not. This area in the bus belongs to passengers waiting standing and people with disabilities if the bus is empty enough.
- People with disabilities have been isolated from society. Other people don't understand our rights. Imagine that everywhere is accessible and we went anywhere independently. At this time, I can agree with you. But, now, there are obvious discriminations against us. If there is discrimination, I want to utilize all my prioritized rights and positive discrimination.	- For example, this is so ridiculous to think that any people except disabled cannot use toilets specific to disabled. No. All the toilets must be accessible and then for the use of everyone. An able-bodied person has the chance to pick among many toilets, but I am obliged to use only one. It is not fair. Public spaces, public transport and toilets must be 100% accessible and belong to all. If people with disabilities want to be considered equal with others, then we should not pursue privileges.
- We wouldn't need specific privileges for us if our cities were accessible. But able-bodied people use car parking, reserved area in buses, occupy my priority for elevators specific to people with disabilities along with insensible attitude to us. I am an equal citizen giving taxes to this country; so, I have equal rights. To ensure such an equality, I want my right of positive discrimination.	- There is nothing like positive discrimination in the law. It notes that measures to ensure our rights and freedoms cannot be considered as discrimination. The measures to be taken in the context of this article seem to us as positive discrimination. But, any sort of discrimination is called discrimination no matter it is positive or not. I don't want any favor or to be considered as different. I just want my right to access. Positive discrimination statement detracts from right-based approach.

An obvious conflict as a dilemma emerged within user perspective about privileges, priorities or measures to ensure equality for people with disabilities -called positive discrimination-. It can be inferred that these two sides, which seem contradictory to each other, perfectly complement each other in the process of reaching socially and spatially accessible cities. It is noteworthy to mention a conclusive statement, which is further discussed in conclusion chapter, that there are two steps heading towards accessible cities to be ensured with independent mobility. In the first step, positive acquisitions -instead of discrimination- might be needed to create awareness in the process of removal of spatial accessibility barriers. In the second step, it would be quite normal to expect perfect equality in daily life without providing any positive acquisition or privilege to any specific group.

6.1.2.2.4 Learning as a Solution

User perspective mentioned that one of the prior parts of the solution needs to begin with learning. Learning is phrased as education, training or awareness raising campaigns in focus group discussions. In the end, all those actions serve to a learning process of accessibility and persons with reduced mobility within the context of the research. This is a process for kids in their family and at school, for PRMs, for able-bodied people, for drivers and for local and central policy-makers. It is revealed as a process of learning;

-how to perceive disability and PRMs,

-how to become a part of accessibility policy-making,

-through awareness raising activities

-and how to empathize.

Is the reason why to need to learn and work for accessible cities because everybody is a candidate of become disabled? Or is the reason to pursue accessibility because

the urban belongs to all, each single person in society? A pragmatic shift has been experienced in this discourse towards the fact that accessible cities are needed since it is one of the human rights to be utilized in an independent and equal manner. Participant F4-S notes how ineffective and even harmful to perceive each able-bodied person as a candidate of disabled.

> In a conference, I raised my hand and explained my opinions about that we need respect and equality not because you are a candidate of disabled. many of the participants objected to me. I explained that this perspective is not good for people with disabilities even you have still been thinking so. There is a common belief in our society as it can never be known what to happen. The wrong belief has created a society deprived from empathy. Empathizing is not what if I became disabled; it is comprehending that the city belongs to everybody and each single person has the right to access.

In addition, participants mentioned education as one of the most significant parts of the solution path going towards accessible cities. According to user perspective, the level of education for people to learn what accessibility and disability are varies from pre-school family education to a part of courses at universities. Participant F2-N emphasizes the significance of making kids beware of a correct perception of disability in the family.

> Accessibility solution starts with children recognizing disability. A special effort needs to be put forth to make 3 or 4-year-old kids meet with people with disabilities. Unfortunately, able-bodied kids consider people with disabilities as bogeymen. So, it is significant to integrate pre-school and primary school kids with disabled kids and grownups.

STORY-14

Participant F8-A

INACCESSIBLE BUILDING AND POSTPONED EDUCATION RIGHT

My last job was at a university. It was impossible for me to go upstairs. When I need to fulfill work upstairs, I wasn't able to do it. I had a student with a disability and the school administration told him: 'freeze your registration until we make the necessary refurbishments to enable accessibility'. There are some accessibility rules but they are not enforced.

Similarly, participant F6-E mentioned that correct disability perception learning starts from the family and improved until university level of education: “A kid

doesn't have biases and obtain disability and accessibility perception easily from the family and improved it until the end university education". Participant F2-E put a particular emphasis on university education as a process of learning: "There needs to be must courses in universities to increase awareness of students about accessibility and perception of disability". Besides, another participant remarks the time frame of learning process. Expecting comprehensive quick wins in the short run will not be possible, but in the long run positive outputs will be gained, as mentioned by participant F9-E1 as: "Awareness raising needs to start with education at schools. In one year, five years, or even 10 years the consequences might not be observed, but after 20 years there might be conscious people about accessibility of us".

Enabling only spatially accessible cities does not ensure seamlessly experienced accessibility chains without supporting it with societal and administrative policies, which was supported by participant F11-A as: "Only making sidewalks smoother or buses accessible are not enough for accessible cities. Awareness of all society needs to be raised through correct educational policies in Turkey". One of the most prior strategies is learning as a process of education for different age groups and education levels. Participant F4-Y gives an example specific to visual impairment and lack of knowledge for other able-bodied people.

> If a visually impaired person is crossing the road, s/he should raise her/his white stick and hold it above the head with both hands. It literally means S/he is a visually impaired person, please stop. This a lack of knowledge for most of the people.

Another dimension of learning was put forth by user perspective as a requirement of learning for policy-makers to involve people with disabilities in decision-making processes of accessibility. The importance of learning the preciousness of participation of the main beneficiaries of accessibility policies, design and strategies is mentioned by participant F5-F with an example experience from England.

> I can define the underlying reason for inaccessible cities in Turkey as a lack of qualified professionals designing our cities and a lack of consulting with people with disabilities. In England, I was positively shocked. In designing a street, practitioners aim to create a place for both able-bodied and people with

> disabilities to live independently. They discuss the design with ergo therapists, people with disabilities, and activists defending the rights of people with disabilities. This consultancy occurs in both the design and implementation processes. In Turkey, we are not even allowed to express our opinions about the actions affecting the environment that we all live in.

In addition, participant F8-V indicates that employers need to learn how valuable the contribution of people with disabilities in production processes. Active participation in working life will enable the use urban space more frequently, make them be more visible in daily life that generates positive societal outcomes. Participant F8-V links employment of people with disabilities and becoming a shareholder in urban social life.

> The contribution of people with disabilities to the production processes is prevented. If people with disabilities participate in employment, their courage to seek their rights will also increase. In countries such as Norway and Germany, people with disabilities demand their own rights more easily because they make a significant contribution to production. People with disabilities should be stakeholders in working and social life and should participate more.

In summary, according to outcomes of focus group discussions, learning is composed of processes of education, participation in decision-making, empathizing and inclusion of more people with disabilities in professional life. The outputs gathered in this part become significant set of parts of accessibility problem and solution puzzle in this research.

STORY-15

Participant F1-K2

RIGHT TO ACCESS AND RIGHT TO BE EQUAL

There was an EU project workshop in Ankara about the accessibility of public transport services. I heard about it and wanted to attend. My name was not on the participant list, but I stated that I wanted to participate anyway to the organizers of the workshop. Since I use a wheelchair, they told me to sit a place at the farthest corner by the window. I said what do you mean, the place at the forefront of the table is mine next to the general director. So, I sit where I wanted. They want me to just listen at a further seat in the hall, but I obtained my right to attend the discussions at the forefront.

The main contribution of this sub-section is that societal barriers stand as crucial as urban spatial barriers against accessibility of persons with reduced mobility. In other words, only solving spatial barriers will never enable a maintainable and sustainable accessibility. Within the context of the entire research, spatial accessibility analysis was done and physical problems are gathered. At first sight, it might seem that solving spatial barriers would solve the entire problem. However, along with this second layer lying upon the very first spatial aspect layer, outputs of user perspective on societal aspects flourished accessibility discussion by bringing more problematic dimensions and complemented meaningfully to spatial aspect. In the following part, another layer is put onto the discussion bringing various more dimensions to accessibility analysis, which are the barriers generated by administrative aspects.

6.1.2.3 Administrative Aspects as the Barrier

Focus group discussions defined the sources of problems of accessibility of urban space under three main aspects, which are spatial, societal as well as administrative. In this part, accessibility barriers related with administrative aspects are analyzed depending on user perspective, which derived some sub-topics as:

-implementation problem legal measures and standards,

-problems related with Inspection processes of accessibility,

-wrong decisions and attitudes of central and local governments, and

-a dilemma questioning lack of budget or prioritization as the problem.

6.1.2.3.1 Implementation Problem of Well-Developed Rules

Analyses on the rules for accessibility in Turkey depend on legal measures and standards, which have already been analyzed in the context of this research. The legislative framework and standards obviously note that the rules of accessibility of people with disabilities is well-determined. On the other hand, spatial accessibility

analysis and investigation on user perspective has revealed that despite well-developed rules, implementation has still been quite problematic in urban space. User perspective extracted through focus group discussions highlights the same statement.

There is a standardization for the rules but not for the implementation. A contribution was made by Participant F8-A by mentioning that for any urban spatial plans and projects, people with disabilities have to be taken into account to create better mobility conditions.

> It is obvious that people with disabilities have not been taken into account in urban spatial development plans and projects. In the last few years, some improvements are seen in the accessibility legal structure of Turkey, but it is not enough. These rules should contain the accessibility of public transport vehicles and sidewalks. But due to lack of implementation, we are in a very bad condition of accessibility.

Without effective implementation, perfect rules mean only written documents having nothing to do with changing the cities. Implementation process starts with well-developed rules followed by urban plans and projects in which people with disabilities' needs and demands should be considered. Participant F4-Y highlights the significant position of urban planners and designers in accessibility policy and strategy implementation along with an example of accessibility of new buildings.

> The role of city planners and architects is very important in implementation of accessibility. There needs to be more planner and architect professionals in ministries and municipalities to create accessible projects for cities and buildings. For example, sometimes we, as group of people with disabilities, go and randomly check new buildings in terms of accessibility. It is hard to believe that even new buildings are 30% or 40% accessible at most. Rules state that at least new buildings must be accessible, but they are not.

Similarly, Participant F1-K1 explains inaccessible condition of even newly built apartment blocks in one of the neighborhoods in Ankara.

> In accordance with the Development Law in 1999 and the Law on People with Disabilities in 2005; all buildings constructed after 1999 must meet accessibility standards. For example, Mustafa Kemal Neighborhood in Çankaya is a newly built neighborhood and 90% of the buildings were built after these legal regulations. However, not even one of the buildings in this

> neighborhood is suitable for disabled access. All of them have high entrances with 7-8 steps, none of them have ramps or platforms.

The ultimate on-site implementers of accessibility measures of plans and projects are the workers and foreman. Going towards the upper actors, there are specialists from different disciplines such as urban planning, design or engineering and finally policy-makers. From on-site implementation to the top decision-making mechanism, there needs to be a shortage or lacking that makes implementation of accessibility rules problematic. In this respect, participant F4-Y emphasizes the right to know where this gap in the process exists.

> There is no coordination between foreman, worker, and policy-maker. It seems like, for example, refurbishment of a sidewalk is under the responsibility of a specific actor and if it is wrongly implemented, it is almost impossible to find the responsible person. People with disabilities have the right to know which person or department is responsible for accessibility barriers.

Some of the participants complain that on-site implementers make minor changes not compatible with the design or they sometimes make implementation how they previously experienced. For instance, even 1% difference in implementation of slope of ramp might interrupt accessibility chain for some of PRMs. F3-Y is one of the participants thinking in this manner as: “Even if the design of our environment is fine, foreman and workers take initiative to make minor changes in design that cause major problems for accessibility”.

Another dimension of implementation problem in Turkey is revealed in terms of accessibility of public transport vehicles. As mentioned in the legal analysis section of this research, the deadline to make public transport vehicles compatible with the access of PRMs has been postponed several times through new legal arrangements. Participant F1-K2 highlights implementation problem in the sense of public transport.

> In Turkey, all public transport vehicles must have been accessible years ago, however the deadline has always been postponed to a further date. People with disabilities are ignored in this sense and accessibility of buses and *Dolmuş*s has not been prioritized.

STORY-16

Participant F3-K

COMPLAINING TO ADMINISTRATION OR A CHANGE IN DISABILITY PERCEPTION: WHICH ONE IS THE SOLUTION?

I have a problem with municipal buses and private municipal buses. Sometimes the driver sulks his face as he gets down to open the lift and makes me feel that he is unhappy with my use of the bus. I solved this problem personally by talking to the department in Ankara Metropolitan Municipality that operates buses. They said to me, 'Don't bother, report me the license plate of that bus driver, and if necessary, I'll even cancel that driver from that line'. But this is not the solution for sure. Perceptions and consciousness of drivers need to change. In addition, they don't want to touch the lift and try to open it for us because it may become old or be very dusty. They try to discourage people with disabilities with this method. This is what they make us feel: 'where are you going at this hour, what are you doing now, go and sit at home or two hours later the articulated bus will come, get on it, don't bother us'. Sometimes we have to argue with the drivers. They clearly seize our right to transport.

Spatial and social aspects of inaccessible urban space, complemented by administrative aspects, clearly show that accessibility rules have not been effectively implemented in Turkey. In the following parts under administrative aspects of accessibility, the reasoning behind implementation problem is investigated.

6.1.2.3.2 Problems Related with Accessibility Inspection

A plenty of participants of focus group discussions mentioned that inspection mechanism for implementation has not clearly identified in Turkey. There are rules for how to design the components of urban environment and projects are drawn considering these rules. Then, these projects are implemented such as refurbishment of a sidewalk, ramps, bus stop platform or a building entrance. The point to be complained is the inspection process after or during implementation. Without a well-designed inspection mechanism along with related actors and timeframe, it could not be clearly known that if implementation was compatible with standards and rules or not.

Participant F2-E considers inspection mechanism as a missing gap in the process of creating accessible cities that ultimately results in a hesitation to go out for PRMs.

> To create accessible cities, there is a policy-making actor, a system with its rules and implementers. But, one of the most significant actors is missing: an effectively working inspection authority. We don't have problems with our rules, problematic parts are inspection and implementation. Rules are not correctly implemented due to a gap in inspection, which causes us to think twice to go out.

Beneficiaries of accessibility policies need to know what the responsible body to complain about barrier detections. Some of the participants mentioned that complaining an accessibility barrier directly to the related municipality help desks does not work. Along with an inspection mechanism for spatial accessibility, complaining system can also be developed accordingly. Participant F2-N mentions lack of inspection and complaining by giving an example from Ankara.

> There are rules, but inspection is missing. Inspection is a prerequisite for accessibility policies. Without an effectively working inspection, nobody is aware of the fact that whether a street has become accessible or not. I am living in Batıkent at Çakırlar part. Once I detected that the sidewalk next to the entrance of my apartment have level differences, I couldn't reach any person to complain. If implementation of refurbishment of this sidewalk was inspected effectively, there wouldn't be any accessibility problem.

In addition to the statement of lack of inspection mechanism, participant F2-A comes along with a definition of one of the main characteristics of this mechanism, which is inspection carried out by independent institutions or departments. The main claim of participant F2-A is that inspection needs to be separated from policy-making, design and implementation processes, which enables it to be free from any political or administrative pressure.

> Who prepares sidewalk projects? The municipality. Who is responsible for implementation? Municipality. Who inspects implementation? Municipality. If a body is the designer, implementer and inspector, it is not possible to create an accessible built-up environment. It is reasonable to assign planning and implementation to local government, but inspection must be provided by independent institutional units or organizations that need to be free from any political pressure. When the independent inspection notes specific barriers against accessibility, then the responsible local government department will

be asked to renew the implementation. Once a disabled person faces a barrier, s/he can call this independent inspection department and demand a refurbishment. Here I want to highlight that the department must be independent.

STORY-17

Participant F6-E

THE NEED FOR AN ON-TIME INSPECTION

Let's take the elevator problem as an example. In Kızılay, the elevator in Güvenpark in the center of Ankara was not working. That elevator has been there since the Metro was built, so it's an old one. Nobody is inspecting. It was a week ago, I checked, the elevator wasn't working, I went again two days ago and it wasn't working again. Nobody cares because the elevator is old, but I had to cross. For at-grade crossing, there are too many vehicles in traffic and they are dangerous for me. The slope of the ramp at the pedestrian crossing is very steep. If I tried to use that ramp, I would have tumbled down over. Things like elevators and ramps are not inspected. Our problem is not that accessibility things aren't done; it is that they aren't inspected at the right time. What is the point of inspecting the elevator 5 years later after it was built?

There are plenty of participants of focus group discussions mentioning that inspection process needs to involve users, namely people with disabilities, since the direct beneficiaries of accessibility policies are the actors who experience and know accessibility barriers in the most accurate manner. Participant F6-E defines inspection as a participatory process including representatives of people with disabilities.

> The accessibility inspector is an able-bodied person in Turkey. Representatives with different disability groups are supposed to be included in the inspection group. We, as users, can better know the accessibility problems of the environment related to us. Inspection needs to be carried out by groups that include people with disabilities. Even if there were only 2-3 disabled representatives within the inspection team, our problems could have been identified more accurately.

Participant F2-A, additionally, explains the benefits of involving NGOs as the part of inspection body triggered by their own demand as active participants in the process.

> NGOs are quite important in inspection processes. They have to get organized and take part in inspection groups. As far as I know, no single NGO demanded such a participation. If we don't mention accessibility problems to related administrative authority and track the process, power of sanction of legal measures will remain weak.

Power of sanction of legal measures is an argumentative issue. Rules are prepared for administrative authorities and citizens to obey. However, there could still be some other prioritizations of local and central government bodies that make them not to fulfill -sometimes not on time- the requirements by means of some certain issues. It is inferred from user perspective that accessibility is one of the prominent issues that have a problem of disobeying the rules, and power of sanction of these rules are discussed in focus group discussions to be directly enabled by fines or indirectly by rewarding mechanisms. Participant F3-Y is one of the proponents of the idea that increasing fines could be a solution to enable power of sanction of legal measures and standards.

> Fines are not enough in Turkey. I suggest that a few of workers or foreman, who are assumed to be responsible for inaccessible implementation of sidewalk, should be punished and this punishment needs to be advertised and announced through social media to the public. One of the most discouraging items in Turkey is fining.

STORY-18

Participant F1-K2

ACCESSIBILITY PLATFORM FOR RENT, NOT FOR SALE!

I take part in the enacting process of disability laws and regulations in Turkey. Our problem is implementation. According to the law, all newly constructed buildings in Turkey have to be accessible. For example, if the ramp is not suitable, this deficiency must be eliminated with the platform, otherwise, the license cannot be obtained. I'm a disabled engineer and sometimes people tell me implementation problems. One of the platform manufacturing companies called me. For a newly constructed building in Yenimahalle, the contractor asked this company: 'Do you rent a platform for the disabled?' I was very surprised when I heard that. The platform is not something to be rented, it is something that needs to be mounted and used. This company who consulted me continued: 'When the engineers came to inspect the accessibility of the building, the engineer inspectors want to see the platform elevator, so for the investigation, it needs to be there when the engineers came, and then after they leave, the platform can be removed'. In other words, I'm talking about a

> contractor who tries to pass the inspection process successfully to get rid of the purchasing cost of the platform. I have struggled for years for the law to be enacted, but can you believe the solution in practice?

Participant F1-C further exemplifies fining issue by means of COVID-19 pandemic and obligation of wearing mask.

> If you said to the people that wearing a mask in current pandemic is good for your health, they would not wear. Because, they would know that there will be any monetary sanction if they don't wear the mask. But if you say that you have to wear a mask otherwise, you'll be fined, you can easily see many people wearing one.

In the same context, participant F2-A supports the idea that fine needs to be addressed directly to the responsible body causing barriers.

> Please, somebody address me a solution when I face a barrier? We have effective legal measures on paper, but we still have physical barriers. Therefore, fines are not enough or it can be said that we don't even have a fining mechanism. Independent departments or units are the most critical component of accessibility of cities in this fining mechanism. But fines need to be addressed directly to the foreman or worker who makes the mistake as the responsible body, not to the municipality. The person who makes the mistake must beware of the fact that s/he made a mistake.

As a transition from fining to rewarding system proposals, participant F10-M puts forth a question mark that fine system does not work in Turkey in terms of accessibility by giving car parking behavior on sidewalk as an example.

> Fines do not work for accessibility. Sometimes, people with disabilities file suit against local governments to defend their rights, they sometimes win and local government is fined. But I think it doesn't work. After fining process, an effective inspection needs to follow the further process. Let's take car parking on pedestrian sidewalk as an example. Normally, it is forbidden to park the car on sidewalk by rules in Turkey, however people still insistently park their cars on sidewalk. So, fining mechanism in Turkey doesn't work.

The question mark, representing fine as not an effective solution, was handled by participant F4-S and generated the solution of rewarding good practices of municipalities. Therefore, municipalities would beware of the fact that if they prioritize accessibility policies, they will increase their visibility and reputation among other municipalities. In other words, forming a competition arena for local

governments by means of fulfilling good practices of accessibility of PRMs could pave the path towards accessible cities in line with some opinions of user perspective. Below, participant F4-S gives rewarding as a part of the solution.

> OK, sometimes foreman or worker as implementer can make mistake while refurbishing sidewalk surface or ramps. But sometimes local government, who takes wrong accessibility decisions, is responsible. In such cases, there can be another solution as the fact that good practices can be rewarded. Not fining but rewarding can better encourage policy-makers and implementers.

Participant F11-A is another proponent participant of the idea considering rewarding as a part of the solution.

> Local policy-maker needs to know that good practices of municipalities are rewarded. They need to be rewarded considering their projects related to people with disabilities, children and elderly by grading and rewarding. Then, each municipality will seek to get this kind of a reward.

After implementing fines and rewarding to force implementation of rules, there could still be a question mark: Would local governments take the necessary measures of accessibility because they internalized the accessibility problems of PRMs and consider lack of accessibility as a real barrier or because they have to due to financial costs of fines or competitive reputation that they get through rewarding? In the conclusion chapter, the effectiveness of fining and rewarding as mechanisms to enable implementation of laws, regulations and standards will be discussed.

In summary, within the inspection discussion of administrative aspect of accessibility, user perspective reveals specific points as:

- Inspection is one of the most prior missing parts of accessibility implementations.

- One of the main characteristics of inspection is to be made by independent bodies, free from any pressure.

- Inspection needs to be a participatory process with PRMs and NGOs.

- Fines and rewarding to enable the power of sanction of the rules.

Along with a thinking of a lack of or shortages in inspection, user perspective also mentioned wrong decisions and attitudes of administrative authorities as one part of administrative aspects of accessibility problem.

6.1.2.3.3 Wrong Decisions and Attitudes of Administrative Bodies

Questioning the underlying reason behind inaccessible urban space during focus group discussions revealed a fact that local and central administrative bodies are sometimes considered as the starting point of challenges. Wrong decisions and ignorance of administration towards people with disabilities are thought to be some parts of the sources of inaccessibility considering the approach of user perspective.

Participant F4-S approaches the issue emphasizing that administrative bodies make people with disabilities think they are prioritized and their accessibility barriers will be adopted as a challenge. However, in reality, accessibility barriers still exist.

> Representatives of municipalities or central government behave as if they really understand what I experience in specific times such as Disability Week or National Disability Day and they give promises to make the life easier for us. But in reality, they suddenly forget us and behave as if we don't even exist.

As mentioned in the social aspects as barriers of accessibility, people with disabilities are against any discriminative attitudes of other able-bodied people and representatives of local and central government. Participant F7-G emphasizes the wrong attitude of representatives of administration that make them feel not equal but marginalized group of people.

> For both municipal and government side, if they start their speech by declaring 'our disabled brothers', it sounds evidently like a matter of discrimination. It is not 'our lawyer brothers' for a policy regarding lawyers or not 'our worker brothers' for a policy regarding workers.

Ignorance of local policy-makers is considered to be a significant source of accessibility barriers in accordance with user perspective. Some of the participants of focus group discussions mentioned that although they complain about specific

accessibility barriers to the related district or Metropolitan Municipality of Ankara, the desired amount of interest has not been shown to fulfill the requirements. Participant F1-K1 gives an example of a not working elevator and lack of interest of the related local government.

> I want to give example of elevator of an overpass. I get used to the fact that they barely work. In Batıkent, I asked for a platform to reach an elevator from responsible body in the municipality. They said OK, but it has been one year with no platform.

Another example case is given by participant F1-C about parking on sidewalk preventing PRMs' passing as: "Parking on the sidewalk is a big problem for us. Although I complained to administrative authorities about such cases, nothing happened". According to user perspective, lack of interest of administrative authorities also revealed the fact that although the head of administrative body understands the seriousness of accessibility barriers, implementation still remains weak. Participant F5-F questions the know-how of planning and implementation bodies of accessibility.

> I talked with ruling and opposition party leaders about disability rights and accessibility issues. They all accepted what I mention. But, in practice, there are still many gaps. We still have sidewalk, ramp, bus stop and building entrance problems. Therefore, there are responsible people in between who lacks enough knowledge and consciousness about problems experienced by people with disabilities.

STORY-19

Participant F1-K2

WHO IS RESPONSIBLE?

Last year I went to Gordion shopping mall by Metro. After getting off the metro station, there are 10 steps of stairs on the route between the metro station and the entrance of the shopping mall. An elevator was constructed to eliminate stairs for people with disabilities, but it doesn't work. We went to the Shopping Mall Management and complained that it was not working. They stated that the area where the steps exist is a public space and it is the responsibility of the municipality. Later on, we went to the municipality to complain about not working platform and the municipality mentioned that there was a protocol between them and the shopping mall management and

> the shopping mall administration had to repair it. So, imagine there is an accessibility problem and it is not clear who is responsible.

On the other hand, participant F8-A thinks that firstly the head of administrative bodies should learn to approach accessibility as one of the most crucial aspects of PRMs daily life, stated as: "Head of institutions and administrative authorities should take the initiative to make our cities more accessible. But I think their lack of knowledge and empathy makes implementation harder".

From another perspective, participant F11-A puts a special emphasis on the lack of information about the current condition of people with disabilities and accessibility barriers on urban space. The proposal of creating a database of participant F11-A is exactly what has been done in spatial accessibility analysis chapter carried out in four case study areas in Ankara. For local policy-making bodies, without knowing what the exact positions of accessibility barriers, it will be hard to start refurbishment and reconstruction of parts of accessibility components. Participant F11-A mentions opinions about the significance of obtaining the picture of current situation.

> First of all, municipalities don't know what and where is the problem. They should create a database including the place where people with disabilities live and what the physical accessibility barriers are in the city. First and foremost, we need a picture of current situation. After getting such information about people with disabilities and accessibility of streets, it will be easier to make effective policies.

Another discussion was about discounts given to people with disabilities, which are said to be one of the wrong decisions of administrative bodies. For example, some of the participants mentioned that some people with disabilities make their free transport card be utilized by other able-bodied people. In addition, it was mentioned that there is a probability for policy-makers to manipulate the position of people with disabilities in the society as a channel to increase their votes. Participant F4-Y explains opinions about discounts and subsidies provided to people with disabilities.

> I am against all the discounts and subsidies given to people with disabilities. first, it is a topic quite open to abuse by people with disabilities. Second, along with these subsidies, the position of people with disabilities are manipulated by policy-makers quite frequently.

Different from the discussion about discounts and subsidies, there are specific equipment of certain disability groups that directly have impact on the quality of urban trips of people with disabilities. In case that unless people with disabilities afford such equipment, -i.e., automated wheelchair, best quality walking sticks for people with visual impairment or hearing devices for people with hearing impairment- some certain subsidies of administrative authorities might help the quality of accessibility of people with disabilities. Participant F1-K2 supports this idea by giving example about affording an automated wheelchair.

> Automated wheelchair makes the life easier for a person with physical impairment. I could afford to buy my own automated wheelchair, which costs about 10000 TL. Government gives subsidy for one fourth of an automated wheelchair. In this case, it is impossible for most of people with physical impairment to afford one. We need more subsidies for our equipment.

In addition, participant F8-V approaches the issue of lack of subsidies of administrative bodies for special equipment by from the point of view of physical and visually impaired people.

> The equipment we use is quite expensive. We have to use them, so there has to be a tax deduction or if possible free of charge. Because they are vitally important to us". I am a physically impaired person and I have automated wheelchair. But I know many friends, who does not afford one. Considering visually impaired people, a good quality walking stick is vital for their accessibility and costs about 300TL. For a low-income person with visual impairment, it is hard to afford.

Consequently, wrong decisions and attitudes of administrative bodies are mentioned to contribute accessibility barriers. The approach of user perspective is to be summarized as:

- Ignorance of administrative bodies about not showing enough interest to remove accessibility barriers.

- Indirect discriminative attitudes of representative of administration making people with disabilities feel as a different group in society.

- Ignorance to consider spatial accessibility complaints of people with disabilities.

- Significance of creating database.

- Discounts to people with disabilities as wrong decisions.

- Lack of subsidies on specific equipment of people with disabilities.

6.1.2.3.4 A Dilemma: Which One Is the Administrative Barrier: Lack of Budget or Priority?

In each focus group meeting, the participants were asked what the underlying reasoning behind inaccessible urban space and a considerable number of them discussed two opposite stances: the first one proposes that lack of financial sources causes implementation problems; and the second one considers not lack of financial sources but lack of prioritization of actions related to accessibility of people with disabilities is the underlying reasoning. With this respect, first the proponents of the idea of lack of budget -economic aspect of accessibility- and later on the opponent stance as the lack of prioritization are explained through contributions of participants of focus group discussions.

Participant F5-E thinks that comparing European countries with Turkey in terms of accessibility is a misleading approach due to economic development levels and amount of budget assigned for disability policies.

> European cities are accessible, because it is related with the development level of the country. Economically powerful countries are able to make more investments to accessibility policies. In Turkey, I think, administrative bodies know what the problem is and they want to make changes. But due to lack of enough budget for municipalities and government to make effective accessibility policies, implementation seems still problematic.

Similarly, participant F7-S considers lack of budget for local governments as the administrative source of accessibility barriers as: “Our problem is that the government don’t allocate enough budget to municipalities for accessibility of people with disabilities. Due to lack of budget, our sidewalks are still problematic”.

Participant F7-V gives examples of specific European countries as production economies in which people with disabilities have been employed and demand their rights as equal citizens as others.

> In Germany and France, people with disabilities are a significant part of production processes and they have the right to declare their rights in decision making processes through NGOs. These countries do not also have budget problem to allocate disability policies. In Turkey, our problem is that people with disabilities demand same service provision level with Germany, but Turkey does not have the same production level and national income as Germany. Our municipalities don't have enough financial sources to fulfill accessibility policies. This is a part of the problem.

Amendments in existing legal structure, enacting new laws and regulations and adopting new standards are the main steps taken by Turkey in the process of being a candidate country of European Union. Accessibility of people with disabilities has been one significant pillar of this process. For instance, Law on People with Disabilities, regulations related with accessibility policies and actions and related standards in Turkey are the outcomes of European Union accession process. As criticized by participant F1-C, some parts of necessities are directly adopted to legislative system of Turkey. For example, making all public transport vehicles fully compatible with the accessibility requirements in EU standards is a broad topic that need to be approached as a detailed project designed as stages for low, medium and long terms. Participant F1-C mentions opinions in this regard.

> In Turkey, we have legal measures and rules compatible with Europe, but our financial condition is not compatible with Europe. Turkey adopts accessibility rules of European Union. Turkey is a different country in terms of its financial and socio-cultural condition. Once Turkey directly adopted laws from Europe, then the budget problem emerges for municipalities to fulfill accessibility.

On the other hand, the opposite stance states that a lack of prioritization of actions related to accessibility of people with disabilities is the real administrative problem. According to their approach, although local governments have enough financial sources to support accessibility policies, they have not been willing to take

accessibility to the forefront. According to participant F9-B, losing vote concern is highly related with nor prioritizing accessibility for local governments.

> Politicians are not willing to take actions that will lose votes. The mayor falls into disfavor when more visible problems are not resolved. That's why they give priority to policies that will bring them votes. So, disability policies in cities are ignored. Municipal authorities cannot internalize our problems.

Participant F11-E also considers the underlying reasoning as not prioritizing people with disabilities by providing approximate percentages. The point that needs further consideration is the fact that the percentage of affected population from accessibility policies is much more than 15% since accompanying persons and their families live as dependents depending on the level of disability. A considerable number of people with disabilities have not still been able to achieve their accessibility through independent mobility in Turkey that makes accompanying persons still have crucial role in daily life of them. Participant F11-E establishes a relationship between losing vote concern and prioritizing people with disabilities.

> People with disabilities are not at the forefront of the priorities of mayors. Which one seems more plausible: satisfying the needs of 15% of the population or the other 85%? Losing vote is a major concern for municipalities. That's why people with disabilities have not been prioritized.

In the same focus group meeting, participant F11-A considers not lack of budget but prioritizing as a political issue that lies behind administrative aspects of implementation problem.

> Accessibility is our red line. It must be prioritized. There is a remaining budget in the hands of municipalities. I don’t think that there is a problem of lack of budget. Decision makers do not consider people with disabilities as the group having priority. This is all about politics. Municipalities have money, but they are more willing to use it for more visible actions.

In addition, participant F8-A states that there is no lack of budget, contrarily, there has been a budget surplus for local governments.

> Financial issues are also important for accessibility. But I need to note that many institutions in Turkey have a remaining budget at the end of the year. Those governmental institutions can use it for accessibility projects. If budget

planning of municipalities is sensitively made, there will not be any problem with implementations about sidewalk, buses and elevators.

The main outcomes obtained as a result of the analysis of administrative aspects as barriers defined by user perspective is implementation and inspection deficiencies, wrong decisions and attitudes of policy-makers and officials, planning financial sources of local governments in a not comprehensive and inclusive manner, and prioritization deficiencies. It is noteworthy to state that spatial, societal and administrative barriers as three pillars against accessibility of PRMs are interdependent with each other. It means that solving a part of the problem belonging to one pillar will not have the capability to solve the entire accessibility problem. In fact, for example, eliminating all spatial aspects of accessibility barriers will not solve the entire accessibility problem in Turkey due to other two interdependent aspects.

In conclusion, user perspective is investigated in detail under three aspects as barriers related with spatial, societal and administrative. At the end of accessibility analysis, a mapping metaphor can be formed by establishing a connection of the entire research as the components a map: a base map and layers upon it. Figure 6.15 demonstrates this metaphor with a base map and four layers upon it. At the bottom, the legislative framework of accessibility lies that constitutes the rules, namely the basis of accessibility concept in Turkey. On the base map, there is the layer-1 composed of two sub-layers as parts of spatial accessibility barriers. First sub-layer is the analysis done through researcher perspective in four case study areas in Ankara and the second one is the user perspective obtained through focus group discussions. Later on, layer-2 comes upon the spatial aspect, which is the societal barriers as a part of user perspective analysis. finally, layer-3 comes as the top layer upon the societal one, which is the administrative barriers similarly as a part of user perspective. All these layers and the base map comes upon each other and form the ultimate ‘mapping’, which indicates a set of barriers preventing PRMs to obtain their right to mobility in the context of the research.

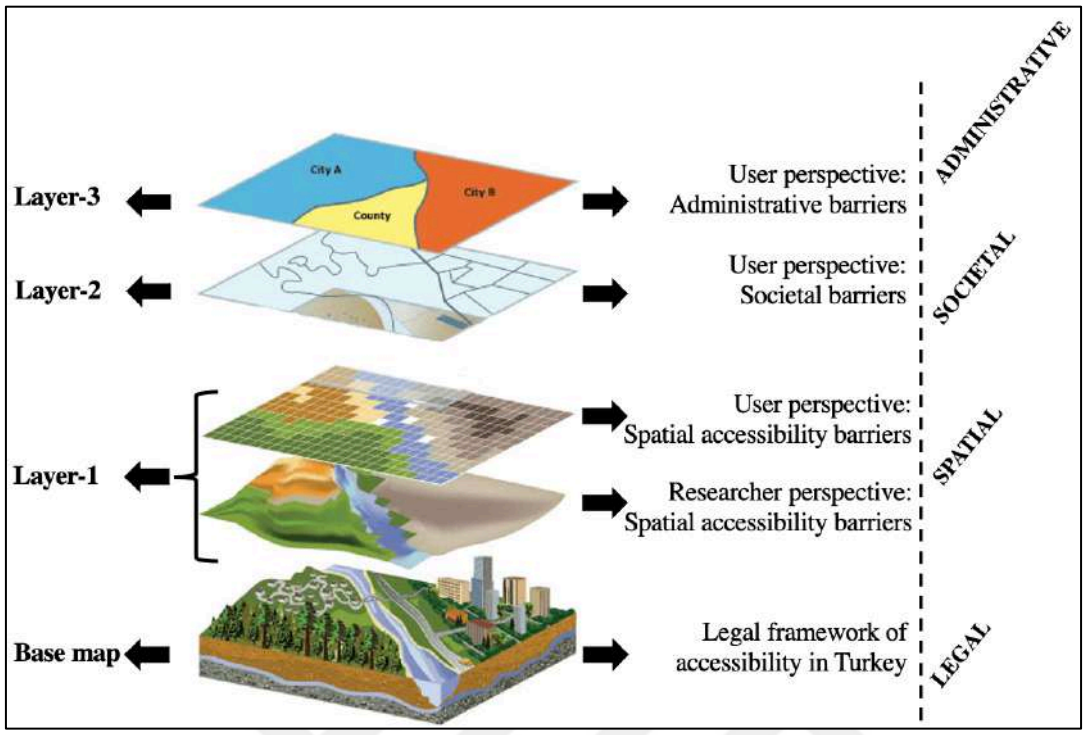


Figure 6.15. Mapping Metaphor as a Summary of Accessibility Research (Produced by the Author -Image was Captioned from (Nelson Institute for Environmental Studies, 2021)

In the conclusion part, the results of the research are synthesized supported by the user opinions on the meaning of accessibility, right to mobility, and independent mobility along with the ultimate answers to the research questions.

CHAPTER 7

CONCLUSION

The research reveals concrete answers for some of the research questions or new question marks of further discussions for some others. As a conclusion of the research, this chapter presents a conclusive syntheses and critical discussions of the outcomes obtained from three different but interrelated research methods. Interrelation between methods means that the acquisitions of legal system in Turkey directly affect how to approach the analysis spatial right to access through case study research, and the outcomes of an understanding for spatial barriers do not represent the reality that the research has aimed to reach since user perspective contribute remarkably to both understanding of spatial barriers and introduction of new layers of aspects of barriers: societal and administrative.

In this chapter, right based approach to accessibility concept is firstly presented by a discussion on the definition of accessibility, the concept of right to access, and independent mobility. Later on, the conclusive analysis follows layers in mapping metaphor shown at the end of Chapter 6, from bottom to the top as the base map and layers upon it, which are discussions on legislative framework and spatial, societal and administrative aspects as barriers against right to access. At the end of the chapter, main contributions of the thesis and prospective further researches are mentioned.

To begin with two informative summaries of the outputs of researcher and user perspective, Table 7.1 and Table 7.2 shows main outputs of case study research and focus group discussions methods. In Table 7.1, key spatial accessibility indicators of

spatial GIS analysis are elaborated with their sub-items. The last column is composed of summary sentences inferred as a result of the related set of sub-items.

Table 7.1. Summary of Chapter 5: Key Spatial Accessibility Indicators, Content, and Main Outputs

Key Spatial Accessibility Indicators	Content	Main Outputs from Chapter 5
Pedestrian sidewalk	Width of sidewalk	- The more the housing stock inaccessible, the more the pedestrian sidewalk inaccessible is. This does not mean that newly built housing stock is accessible (Example of new Beştepe Neighborhood) - There are surface problems, and barriers against accessibility. There are serious problems with tactile pavement (Counter arguments exist within user perspective about taking tactile pavement policies for granted!) - Field observation of the researcher states that parked and waiting cars on sidewalk create accessibility problems.
	Surface of sidewalk	
	Barriers on sidewalk	
	Tactile pavement	
Ramps	Existence of ramp for the level differences above 2cm	- Residential settlements in Beştepe, Söğütözü and Bahçelievler are prominently more problematic in terms of ramp. - Considering all indicators, condition of ramps stands as a significant barrier.
	Width of ramp	
	Slope of ramp	
	Surface of ramp	
	Ramps at crossings	
Pedestrian crossing	Barriers to access crossing	- There are three types of barriers: *Structural barriers: barriers related to the structure of the road *Temporary barriers: vehicles occupying at-grade junctions, posts, bollards, advertisement signboards) *Permanent barriers: fixed Bollards and Street Furniture to Prevent Motorized Vehicle Access into the sidewalk. - Accessibility dimensions of overpass/underpass: *the existence of elevator or automated disabled platform *being free from safety problems - Field observation of the researcher states that parked and waiting cars on at-grade crossings create accessibility problems.
	The condition of at-grade crossing stripes	
	Pedestrian crossing sign at uncontrolled crossings	
	Visual and hearing features at signalized junctions	
	The height of pedestrian pass button (if any)	
	Pedestrian overpass and underpass	
Public trans	Bus stop platform height	- Rail system station entrances seems problem-free, but practical barriers are still questions (not working elevators, gaps between station and wagon etc.)
	Accessibility of entrances of rail system stations	
	Sitting bench at bus stops	

Table 7.1. (continued)

	Enough space at bus stops for people with wheelchair	- Bus stop platforms above 20cm, lack of braille information and voice warning/information systems are prominent problems.
	Braille alphabet info at stops	
	Voice warning for hearing impaired people at stops	
Open and green areas	Lighting for main paths in parks	- Despite lacking aspects, parks are more likely to be accessible than other indicators.
	Width of main paths	
	Slope of main paths	
	Urban furniture as a barrier in parks	
	Sitting bench: on the path/side of the path	
	Frequency of sitting benches	
	Min. 1.2mspace next to sitting bench	

The other table (Table 7.2) shows main outputs obtained from Chapter 6, from focus group discussions under three key aspects of spatial societal and administrative barriers. These tables help to have a quick overview of the research that sheds light to conclusive analysis.

Table 7.2. Summary of Chapter 6: Key Aspects, Content, and Main Outputs

Key Aspects	Content	Main Outputs from Chapter 6
Spatial Barriers	Barriers related with accessibility chain	- Accessibility needs to be considered as a chain, not as a single link in the city, which contains many interruptive barriers. There are social consequences of not achieving accessibility chain. - There are accessibility barriers to reach crossing (ramps, sidewalk problems, barriers etc.) and about green light duration. - People with disabilities prefer to use road level rather than sidewalk level, which means risk of accident. - Parents with baby stroller have similar accessibility problems with physically impaired people. For the ones twin baby stroller, accessibility is much more problematic. - For visually impaired people, parks are inaccessible. - A dilemma: There are barriers with tactile pavement (route problems, texture change, being slippery) but it is useful vs. tactile pavement is one of the sources of discrimination.
	Accessibility of Public Transport: Stations/Stops and Vehicles	- Ankara is a car dependent city. - PRMs are not willing to use public transport. - There are accessibility barriers about buses, bus stops and urban rail systems. - Dolmuş system has not been used by PRMs (25.5% of all public transport trips are done with Dolmuş) - Parents with baby stroller are not willing to use public transport, they prefer their cars. - Bus stops and buses are not accessible (too high bus platform resulting in the use road level while getting on, problems with door lifts).

Table 7.2. (continued)

		- Significance of smart application systems for visually impaired people. - Not working elevators, and gap between wagon and station platfom are the main accessibility barriers.
	A Dilemma: Car as a Real Barrier or An Ignorable Issue that Facilitates Accessibility	- Car is a crucial accessibility barrier since waiting or parked cars as barriers on the route of PRMs, and inconsiderate attitude of car drivers. - Car is one of the most prominent facilitators in PRMs' daily life to reach urbans services.
	A Dilemma: Parks as Problem-free or Problematic Spatial Indicator	- Case study analysis mentions that parks are almost problem-free - User perspective of visually impaired people present that parks are one of the most inaccessible places in Ankara.
Societal Barriers	Social Exclusion and its Unsociability Consequence of Inaccessibility	- Ignorance process against people with disabilities and social exclusion; the feeling of 'others'. - Social embarrassment - Unsociability of people with disabilities and the resulting outcome of not willing to go out (additional effect of COVID-19 pandemic). There are also others refuse to isolate themselves.
	Lack of Awareness of People with Disabilities, Able-bodied People and Drivers	- Lack of awareness for people with disabilities (lack of consensus on right-based approach, manipulation of privileges) - Lack of awareness for able-bodied people (lack of empathy, considering and behaving as if they are different) - Lack of awareness for drivers (bus drivers and car drivers)
	A dilemma of positive discrimination: two opposite views	- The ones favoring positive discrimination: It is a right - The ones opponent of positive discrimination: no matter it is positive, it is discrimination.
	Learning as a solution	- Learning; *how to perceive disability and PRMs, *how to become a part of accessibility policy-making through awareness raising activities, and *to empathize.
Administrative Barriers	Implementation problem legal measures and standards	- There is a well-developed legislative framework for right to access of people with disabilities - Despite well-developed rules, lack of implementation is a crucial barrier
	Problems related with inspection processes of accessibility	- Lack of inspection is one of the mostly mentioned administrative barrier. - Fines need to be more discouraging; they should be increased vs. rewarding rather than fine is a better solution.
	A dilemma questioning lack of budget or prioritization as the problem	- Implementation is problematic since local governments do not have enough budget - Budget is not a problem, the real barrier is lack of prioritization in administrative policies.

Table 7.2. (continued)

	Wrong decisions and attitudes of central and local governments	- Administrative bodies make people with disabilities think they are prioritized, but in reality, accessibility barriers have still been existed. - Attitude of administration make them feel marginalized. - Late responses of local-governments to demands of them. - The problem of who is the responsible authority. - Lack of know-how for local governments. - Discounts and subsidies as discriminative or supportive policies?

7.1 Right-based Approach to Accessibility

The thesis starts with an assumption: 'Accessibility is a right for all'. At the end of the research, the formation of the claim of considering accessibility as a right is discussed. Theoretical framework depicts the city as a right for all with the contributions of various scholars. For instance, Lefebvre (1968) defined the essence of the Right to the City, Harvey (2008) and Purcell (2013) extended the boundaries of the concept by relating the discussion with urban politics considering more concrete considerations about the city itself as a commodity, and Castells (1977) paved a path to show how to obtain the city as a right through urban social movements. As a result, this research addressed the focus of the concept towards accessibility as a right. At first sight, accessibility is a term stating how easy or difficult to access an urban service. It seems like if one manages to arrive the destination, then the route would be called 'accessible'; in the reverse case then it would be 'inaccessible'. To clarify, the main determinant seems to be urban space. On the other hand, right-based approach to accessibility exactly questions what if there were some other underlying reasons of not managing to access. Within this framework, firstly, the boundary of definition of accessibility is drawn, then, the discussion from accessibility to right to access is presented, and finally, in what way right to access has a specific complementary requirement that is independent mobility is explained.

7.1.1 Defining Accessibility: Is It Only Accessing from One Point to Another?

The most contemporary debates in recent decade follow UN Sustainable Development Goals (SDGs) to encourage countries in reaching a more sustainable and resilient future. Accessibility is also a matter of sustainable future of cities mentioned under the 11th goal (Sustainable Cities and Communities) as: Creating accessible cities and water resources, affordable, accessible and sustainable transport systems, providing universal access to safe, inclusive, accessible and green public spaces" (United Nations, 2015). This UN accessibility implication among SDGs seems as the closest content that this research has been pursuing, which still remains quite far. SDG-11 takes accessible cities, accessible transport and accessible public spaces at the core of the strategy as a specific focus on urban spatial accessibility. However, there are other determinants as significant as spatial accessibility that means accessibility is not only accessing from one point to another. Taking legal measures as the baseline, societal and administrative barriers are the aspects directly affecting how to define accessibility. Therefore, it means the definition of accessibility needs to be composed of three interdependent dimensions.

From a right-based perspective, accessibility means more than urban spatial policies to be adopted for people with disabilities within urban mobility, and not limited to people with disabilities. Once right to access is adopted as one of the human rights, it brings in mind the first article of Universal Declaration of Human Rights (United Nations, 1948), "All human beings are born free and equal in dignity and rights…". The rights and equality dimension imply that accessibility is an outcome of the combination of spatial, societal and administrative policies and implementations, and accessibility is a matter for not only a specific group of people with disabilities, but also for any person having reduced mobility. Once it is accepted that each single person is equal no matter what the cultural, ethnic, socio-economic condition or level of ability to access is, then it becomes certain that right to access is for all encompassing needs and demands of different groups of persons with reduced

mobility. To ensure needs and demands of various beneficiaries of accessibility, the platforms, to obtain their ideas about what their experiences are considering barriers against right to access, need to be provided by administrative authorities. Prior to have such a participatory decision-making platform to discuss their right to access, local and government policy makers must be considerate to PRMs as equally as all others.

User perspective contributed the discussion of how to define accessibility. Participant F9-E2 highlights the relationship with respect. “Accessibility means respect to all; to any able-bodied individual and any single person with a disability, respect to a mother with baby stroller to get on the elevator, and respect to us”. Participant F8-V puts the emphasis on societal barriers.

> Accessibility is the removal of barriers that society puts against us. Without barriers, we could be anywhere. In working life, entertainment life, socializing with people... Accessibility can be called as the removal of societal barriers. When there are no barriers, we aim to live on equal terms with everyone in society.

Furthermore, participant F5-F focuses on the beneficiary of accessibility policies by mentioning societal and administrative aspects.

> We are not disabled. We just have some shortages with our capabilities. The cause of our accessibility problems is those who created disabler cities for us. There might be a deficiency with my feet, but it doesn't mean that I cannot sustain my own life. Societal and governmental barriers need to be eliminated. They shouldn't seize our rights.

An emphasis on right-based approach clearly indicated by user perspective, which is in line with the contributions of Sager (2006) and Harvey (2008) stating that mobility needs to be considered as a right that is highly related with the social need of each individual in society. Thesis research supports this by putting a right-based approach to accessibility with interdependently related legal, spatial, societal and administrative aspects. As a consequence, considering outcomes of the research, accessibility means more than spatial measures or refurbishments. A new definition of accessibility that the thesis proposes is as follows:

Accessibility can be defined is a right-based approach to reach urban services composed of routes free from any spatial barriers; of societal setting free from any discriminative and exclusionary perception; and of administrative structure free from any inspection deficiencies, inconsiderate attitudes and lack of prioritization.

7.1.2 From Accessibility to Right to Access

From a right-based approach, the notion that accessibility is a human right needs to be settled in disability and accessibility perception of minds. Accessibility policies are composed of three aspects, keeping legal framework as the baseline, and barriers about these three aspects are examined from user perspective in the research. The underlying notion behind insistently examining accessibility along with those interdependent aspects is handling accessibility concept from a right-based approach.

In Turkey, accessibility concept is under consideration of policy-makers and mostly scholars over only spatial aspect. However, without societal and administrative aspects, accessibility solutions are reflected upon urban space as, for example, construction of elevators for overpasses (but without their operation maintenance with an effective inspection mechanism), construction of ramps (without effectively working administrative inspecting mechanism checking compatibility of slope or level difference), providing lifts for buses to make them compatible with the public transport accessibility rules (without drivers' being aware for if they work or not), and declaring administrative policies for the benefit of people with disabilities (sometimes with an attitude that makes people with disabilities feel as marginalized and separate part of the society). The way of decision-making and implementation process of an accessibility policy needs to consider spatial aspect (i.e., construction of a new sidewalk with tactile pavement), societal aspect (i.e., sidewalk must have the same width standard and ramps with decent slope, otherwise people with disabilities will be in need of help for accessibility that have societal consequences), and administrative aspects (i.e., sidewalk construction policy is supposed to be

comprehensively planned and sensitively designed not for only a single street, but for a specific entire area). Without considering these three aspects together, there becomes fragmented and specific solutions that means interruptions on accessibility chain, for example going out of the home to work, easy access to sidewalk, but bus stop covering almost entire width of sidewalk, the use of road level, not working lift of the bus etc.

Right to access represented a central part in focus group discussions. It was clearly observed that right-based approach to accessibility is a commonly accepted fact despite unification problems among people with disabilities. Participant F4-S establishes the link between rights and accessibility.

> It is necessary to act from a right-based approach. If accessibility is examined from a religious point of view, we get a different definition, from a cultural point of view, again different. But it needs to be examined from the perspective of the rights of people with disabilities. If there is no right-based approach, someone else decides on behalf of us.

Acquisition of right to access through demonstrations is also exemplified by Participant F1-K2 as one of the pioneer persons leading enacting process of legislative framework for people with disabilities as an active citizen

> I have served as the general chairman of the Orthopedically Disabled Solidarity Association for 28 years. I have contributed to 90% of the enacted laws about the rights of people with disabilities in Turkey. As a representative of the association and the Ministry of Environment and Urbanization, I put a lot of effort into the legislative framework in Turkey. Protests are necessary to win rights. Our association was an activist one. We held demonstrations in Kızılay, closed the Metro, chained ourselves in front of the prime minister's office. In other words, rights were not given to us, we obtain our rights ourselves. Now people with disabilities are worried about if something bad happens to our rights, or if we lose the rights we have won. The fear of losing them is the biggest barrier for people with disabilities in their future struggles.

Another example of an active citizen who defines herself/himself as:

> I am a member of an association that puts forward certain standards on accessibility and struggles for the sake of rights or people with disabilities. We have also created a platform named 'keep struggle in order not to be disabled. Sometimes, we do activities, events, and protests.

Similarly, Participant F4-S puts being an active citizen from a right-based approach.

> I have visual impairment from birth. I am a psychology graduate from Middle East Technical University, I am retired now. I am a manager in the Turkish Federation of the Visually Impaired. My struggle in disability organizations is a right-based struggle and I carry out struggles in the field of women, especially disabled women.

The reflection of Harvey's (2008) collective thinking and action concepts predominantly emerged within user perspective Participant F1-K2 stated that there are plenty of NGOs for varying interests.

> There are hundreds of associations working on the same issue for people with disabilities. We are not united even within ourselves. We can't take action without being united. We need to be together, but we can't. Right now, we have two confederations, very interesting, one closer to one political view and the other closer to the other. In this sense, people with disabilities also act according to their interests. Most people either establish an association or become a member for their own benefit, and everyone generally pursues their own interests.

From another outlook, Participant F1-C specifically emphasizes the need for collective action and urban social movement as Castells (1977) and Harvey (2012) discussed.

> As long as we don't raise our voices and unless we unite and do demonstrations, we are doomed to creep. I am a member of the executive committee of Ankara's first disabled assembly. While defending the rights of people with disabilities, they seem as if they can do any demonstration or protests, but there has been no action. Shame on those who seek the rights of people with disabilities in this way.

As another discussion topic emerged within user perspective is participation as a right paving the path towards obtaining right to access. Participation in decision-making processes and inspection system enable people with disabilities to express their daily spatial experiences to policy-makers and implementers. Many participants of focus group discussions put forth their opinions in this respect. Participant F3-Y mentions the significance of participation as: "Policy-makers should involve people with disabilities in processes. But, policy-makers need to make the call, otherwise, individual efforts of people with disabilities do not work". In addition, participant

F4-S, as a visually impaired person, gives an idea about how the process should be and should not be.

> Participation is very important in decision making. Policy-makers should make invitations to disabled groups and involve them in the processes. But it shouldn't be like 'invite disabled groups, listen them, then ignore what they say and implement what we planned as before'. Participation needs also to be free from political biases while selecting the participants.

Inspection system was also stated as an administrative barrier by user perspective. Participation in inspection processes is valued by participant F1-K2.

> Inspections are carried out in some buildings about the accessibility of the people with disabilities, but we are not called as Yenimahalle City Council Disabled Assembly representatives, we are not informed. We search and sometimes find such inspections and attend.

Similarly, participant F3-K expresses her/his desire to directly participate infield analyses.

> Municipalities design tactile pavement. But, it goes, then a tree emerges, tactile pavement is interrupted and then continues from the other side of the tree. No. Municipalities should invite me or people like me to design together. I can express what I feel, they cannot know.

This is in line with the contribution made by Purcell (2013) stating that participation in decision-making can be considered as an awakening making participants feel embedded into social and urban spatial relations. Being both the beneficiary and a part of decision-making will probably result in the emergence of a new sort of dignified urban well-being. The last contribution was made by participant F7-V as a suggestion on how to arrive a consensus and participate in budget management allocated to disability policies.

> What is missing in this process is that there is no consensus and unity among NGOs. I think what is needed is a disability administration institution that takes action as a whole unit, has the authority to inspect and act as an expert. And NGOs will be able to come together under this institution to discuss the allocated budget and discuss that this is the money we have and what are our needs and priorities.

As a consequence, inextricable cycles of inaccessibility prevent PRMs to have their right to access. Unless right-based approach embedded in right to access is adopted for accessibility policies in Turkey, it could not be possible to live in cities in which accessibility chains would be able to achieved without any barriers.

7.1.3 Independent Mobility

A person decides to go to the theatre with a ticket at the front row (inspired by the story told by participant F9-E2). First s/he checks time schedule of bus to reach the theatre from internet by herself/himself, then goes out and walks on the sidewalk, gets on the bus by herself/himself, enters the theatre building and the hall by walking down the stairs by herself/himself. This part of the trip represents the combination of links of a successful accessibility chain with an emphasis on managing each single link 'by herself/himself' that means without seeking any help; and that means independent mobility. Independent mobility has been taken as a significant complementary concept of right to access since the beginning of the research. It means having the capability to access urban services without seeking any help of others.

Above mentioned example chain is supposed to be a normal case for any single individual in society because of the right based approach to accessibility. Independent mobility has a remarkable significance for right to access since human rights are for all and each single individual is equal with each other. Therefore, everybody has the right to access that needs to be ensured with independent mobility. However, ensuring right to access is not the only precondition. Spatially sustainable right to access and societally sustainable right to access are the two others -and related -components. Firstly, urban space along with its public transport infrastructure needs to be accessible, which represents spatial accessibility. If right to access is not ensured by enabling spatially sustainable accessibility, accessibility chain is frequently interrupted for PRMs that results in frequent failures in urban trips. Therefore, PRMs become unwilling to go out in time that means unsociability

consequences emerge. Secondly, socially sustainable accessibility means achieving accessibility chains without facing any social consequence sourced by inaccessible urban space. Independent mobility is the key factor to enable social sustainability by means of accessibility. For example, user perspective clearly revealed that when they get help from other passengers in the bus or from driver while getting on, it creates a social embarrassment for people with disabilities caused by not getting on independently without seeking any help.

User perspective made remarkable contributions to the discussion of independent mobility. Participant F6-M sincerely desires to have independent mobility in daily trips and stated as: “Sometimes I say, I wish I could be able to do my daily work without being helped. I would like not to be dependent on a parent. This is exactly what accessibility is. But I am in need of help. I wish I could handle my own works without help”. A similar contribution came from a visually impaired person, participant F9-E1.

> They planted a lot of trees in the middle of the sidewalk, and sidewalks are high. I can't get down and I have to ask for help. For example, I am hesitant to ask someone for help while getting down from the pavement except for my family. I would love to be able to do it myself.

The general understanding in Turkey is that once a person with disability is seen, s/he surely is in need of help. However, this is the issue that persons with visual impairment specifically complain. Participant F3-Y gives an interesting example of such situations.

> Perception must change, otherwise, this system will not change. People's point of view is sometimes very strange, sometimes their only problem is to take my arms and help while walking. He thinks he has to do that. I say I don't need it; I can do it myself. He says no, I'll take your arm. Why?

The misunderstanding on under what conditions people with disabilities are helped was also mentioned by another visually impaired participant F4-S.

> Since I don't trust traffic lights, I always cross streets with the help of someone else. Even if there are audible lights, I don't trust them because drivers do not obey the traffic rules in Turkey. But there is another problem. The fact that people want to take the arm of the visually impaired while

> crossing the street is not actually a behavior for the benefit of the visually impaired. On the contrary, the effort of the helper is to seem pleasant to ease her/his conscience.

Lastly, definition of accessibility is linked with independent mobility by participant F5-E from a right-based perspective.

> Accessibility is the ability for all people to live independently. This is what each individual deserves. Everybody needs to be free and without dependence on anyone in each aspect of life. In other words, accessibility is a right like the right to education and the right to housing.

To ensure independent mobility, right to access needs to be ensured along with spatially and societally sustainable urban mobility trips. Taking the fact that everybody is equal as given, then groups such as people with disabilities, elderly people and parents with baby stroller is expected to access any urban service independently. However, it is worth to note that helping as a culture in Turkey sometimes causes deprivation of a fundamental human right in terms of urban mobility for PRMs, therefore spatial and societal structure needs to provide independent mobility for all.

7.2 Is Legislative Framework a Barrier or Not in Turkey?

Legislative framework clearly states that accessibility of people with disabilities is guaranteed mainly by the supranational documents, laws, regulations and standards in Turkey. This comprehensive and well-covering set of rules for the accessibility needs of PRMs supported by Turkey's becoming a party to supranational framework that increases bindingness of worldwide accepted requirements provides a potential for future development to ensure right to access.

The hierarchy of norms in Turkey starts with the Constitution of the Republic of Turkey, which means all the articles and content in it are binding for all other legislative documents. The second legislative item is International Agreements in the hierarchy of norms that makes Turkey become a party with certain agreements done by other countries as parties. Besides, Convention on the Rights of People with

Disabilities is the most prominent international agreement preserving the rights of people with disabilities that triggered the initiation of efforts to make legislative rules compatible with the needs and demands.

The Constitution of Turkey and Law on People with Disabilities can be accepted as the main national legal documents ensuring spatial accessibility supported by various laws, regulations and standards urban space. One of the focus group participants F7-S puts a specific emphasis on the significance of supranational documents, legislative measures and standards in Turkey focusing on accessibility.

> As one of the supranational documents, United Nations Convention on the Rights of Persons with Disabilities has the force of law in Turkey. When we look at the articles of Law No. 5378 that guarantee accessibility and the TSE accessibility standards, Turkey has no shortage compared to developed countries.

As the weakness, there are still not so much effort and enough practices to make the lives of PRMs visibly accessible. The fact that which liability is assigned to which institutional body is evident in the legislative framework in Turkey. However, the real-life practices have still been problematic or incompatible with what they need to be. One of the research sub-questions is that "Is the legal framework one of the underlying reasoning behind inaccessibility of cities in Turkey?" In this sense, a notable further questioning emerges feeding this question: providing that the problem in accessibility of urban environment is not originated from the deficiencies in legislative framework in Turkey, what is the underlying reasoning of inaccessible urban space that directly prevents PRMs to ensure their right to access? It is evident that legislative framework is not the source of barriers against right to access in Turkey, and it was revealed from personal syntheses supported by user perspective that the underlying problem is not the deficiency in a single aspect, but lack of an interrelated organization of spatial, societal and administrative aspects of accessibility in Turkey.

Problem of implementation was mentioned by participant F1-K1 who puts forth the fact that it is quite difficult to observe the reflections of rules onto urban spatial

setting and in our daily life as: “Most of our legal rights have been obtained. We have rights in European standards, but we have very serious problems in practice. Rules are randomly implemented in an initiative-based manner”. Implementation as a barrier, which has not been originated from legal aspect, as a barrier is discussion in detail under conclusion discussions of administrative barriers.

Putting aside the implementation problem, three main specific deficiencies emerge from legislative analysis. The first one is a vague indication of the term ‘positive discrimination’ in Law No. 5378, Law on People with Disabilities Article 4/A, which is mentioned as:

> All forms of discrimination about disability including direct and indirect discrimination are forbidden. Necessary measures are taken for people with disabilities to ensure equality and eliminate discrimination. Special measures to ensure that persons with disabilities utilize their rights and freedoms fully and equally cannot be considered as discrimination.

The article clearly prohibits discrimination towards people with disabilities and guarantees for necessary actions to be taken. The last sentence implies positive discrimination, but not obviously determined positive discrimination as a right for people with disabilities. It states that some privileges can be provided to people with disabilities to keep them benefit their human rights as equal as able-bodied people. What makes this statement vague is that putting people with disabilities to an extreme privileged level might cause discrimination and setting people with disabilities completely apart from the society. In other words, the legal efforts to provide some exceptional rights to protect them to be exposed to discrimination could even cause discrimination. Positive discrimination was one of the most argumentative topics among user perspective in focus group discussions. As a synthesis of my personal observation and outcomes of user perspective, a two-stage solution is proposed under the discussion in ‘societal aspect as a barrier’.

The second one is the way that some of the laws and regulations were rapidly enacted in EU accession period of Turkey. Easily visible outputs of such a rapid adaptation are the process of tactile pavement implementation on sidewalk, and accessibility of

public transport vehicles. Tactile pavement is an outcome of European standardization of streets to be accessible for people with visual impairment. In recent decade, the initial policy was implementation of easily adaptable sticked yellow stripes on sidewalks in Turkey, which costed considerable amount of financial resources to local governments. In Ankara, for example, the policy changed after few years and most of the sticked ones were replaced with concrete yellow paving stone, which was the second cost on the same issue. Actually, there is also an ongoing debate among people with visual impairment about whether tactile pavement system really works for them or not. Details of the discussion is given under 'spatial aspect as a barrier' part of conclusion.

Thirdly, related legal document ensures that until a final deadline, which has already been postponed several times, all public transport vehicles from *Dolmuş* to buses and intercity coaches are required to be accessible. For example, if municipal bus is not a low-floor one, a lift needs to be mounted as an apparatus establishing a connection between disabled person and bus stop. For *Dolmuş*s, the requirement was same. However, the deadline was postponed several times since there is a significant implementation problem due to lack of budget and/or priority from the side of operators or shareholders. Therefore, in the process of making all public transport vehicles compatible with accessibility standards, the first step could be analyzing the current condition of existing stock of buses, coaches and minibuses. After the stock analysis, local governments would have been given the authority to enact applicable legislations to make the transformation of public transport vehicles become implemented. This is an example on a specific issue; however, many more similar cases could have been found in Turkey. One of them could be obligation of designing cycle way for newly developing urban areas in Turkey according to the Article 4 (5) of 'Cycle Way Regulation': "It is obligatory to include segregated cycle way and bike parking stations in the Urban Development Plans for unplanned areas...". In implementation, it is a controversial topic. As another example, an implementation problem for urban regeneration processes has been experienced in Turkey due to manipulation of acquisitions of law (Law No. 6306 Law on Urban Regeneration of

Disaster Risk Areas) for the sake of obtaining more rents for developers and shareholders. Therefore, the solution template could be;

- analysis of current condition,

- delegation of authority to local governments providing an effective inspection mechanism,

- stage-by-stage process planning

- implementation of the required change.

In order for a law, regulation or a single legislative article to be legitimate, it needs to be reasonably applicable for policy-makers and private operators. The following statement that represents a centralistic policy-making power does not always work in the legislative and institutional context of Turkey: ‘once a legislative item is enacted and taken for granted by the central government, it is strictly expected that this rule must be implemented in the local level without allowing any single gap’.

7.3 Spatial Aspect as a Barrier

Spatial aspect of right to access is the only one under the analysis through a mixed-method: firstly, the spatial indicators were objectively processed through a quantitative case study research, and secondly opinions of user perspective were obtained through focus group discussions on the same indicators. These two overlapped investigations allow a verification of data obtained about some specific sub-items of indicators and some controversial issues arose. In this section, firstly, the outcomes of case study analysis and then outcomes of spatial parts focus group discussions are critically discussed. Then, a table is presented that includes a comparison between case study research and focus group discussion outputs. The aim here is to see which sub-item of indicators are verified and which ones include a controversial discussion. In this respect, finally, the outcomes of user perspective are discussed with respect to the comparison.

At the end of concluding remarks for spatial accessibility analysis, it is worth to set answers for research sub-questions determined at the beginning of this chapter. Some of the answers have already been discussed so far. The sub-research questions with summarizing answers are presented below.

- Are there spatial accessibility barriers in Turkey? If yes, what is spatial accessibility level?

As mentioned with graphs, images, tables, GIS mapping and conclusive synthesis table with scores, urban space is quite problematic in terms of accessibility from researcher perspective. In Table 23, spatial GIS accessibility scoring table, reveals significant facts for urban parks, city center and old residential settlement areas. Above all, scoring analysis shows that streets, crossings and sidewalks are full of barriers preventing PRMs to exercise their right to access in Ankara.

Spatial case study analysis was carried out under the light of scientific pre-assumptions coming from literature review establishing relationship between the Right to the City concept and accessibility. Considering this perspective, the literature review was emphasizing a deprivation for PRMs to live in accessible cities. Similarly, spatial case study analysis in Ankara supports this argument about accessibility barriers.

- Do the spatial accessibility barriers prevent PRMs to ensure their right to access?

Spatial accessibility barriers exactly prevent users to ensure their right to access. Urban space is full of barriers as challenges continuously creating interruptions on accessibility chain that are clearly seen on GIS maps. These spatial challenges are highly related with societal and administrative aspects that are presented as the outputs of focus group discussions.

The Right to the City is a concept initiated by Lefebvre, followed by the contributions of Harvey, Castells and many other scholars. There is a strong relationship between the Right to the City and independent mobility for PRMs. The

urban itself is an inclusive right for all framed by right to access, which is a precondition to obtain the Right to the City. Besides, accessibility is a concept to be considered as a chain for all. In the ideal case, it would be expected that there should be no barriers at any link of this chain. As a result, achieving accessibility chain independently and maintaining it brings independent mobility for all. Case study analysis in Ankara showed that there are plenty of barriers against accessibility in the city, which prevents PRMs to achieve independent mobility, to beware of accessibility as a right, to obtain their right to access and therefore the Right to the City. The discussion of independent mobility is in line with the expression of Falkmer, Fulland, & Gregersen (2001) stating that people with disabilities need to have their right to access independently without facing barriers. In addition, Ahmad (2015) considers independent mobility as a matter of citizenship right and equity in urban mobility. The thesis research proved the significance of independent mobility for any person having permanent or tamporary impairment. Furthermore, at some specific points in case study research, it is revealed that three or four barriers are combined on just a specific point that make independent mobility impossible for PRMs. Consequently, it is clear that spatial barriers against accessibility prevents PRMs to obtain their right of access.

- Is the car dependency an accessibility barrier for PRMs to ensure their right to access?

Car dominance in the city is not an issue that can be justified through GIS data collected within the case study analysis in Ankara. However, field observation clearly states that leaving domination of urban mobility to motorized vehicles brings urban planning, design and transport policies accordingly. It is quite probable to hear voices of drivers about complaining the lack of car parking, inadequate carriageway width, and lack of new roads. Such a perception doubles these virtual necessities and have emerged new virtual demands. Therefore, such an urban mobility structure, established upon induced traffic, has created a problematic cycle, in which road widths, supply of car parking and new road investments will never be enough. This

is in line with the discussion made by Harvey (2011) and Gottdiener (1993) stating that neo-liberal urban form and transport structure increases segregation between social groups and such a consumption pattern for urban space decreases social interaction. In the end, widening roads and provision of additional car parking has been equaled to narrowing down sidewalk, to leaving less space for pedestrians. Therefore, car dependent cities have ultimately resulted in a decrease in mobility options for PRMs as well as being barriers for PRMs to obtain their right to access.

- Can accessibility be related with urban land-use structure, socio-economic status, and service of urban rail systems?

In terms of the relationship between accessibility level and land-use structure, two consequences emerged as a result of case study analysis:

-The first one is that average accessibility level is highest for the part examined on Atatürk Boulevard, which is 2,96 out of 4,00. Therefore, it can be inferred for Ankara that in core city centers much more attention had been paid by policy-makers in consideration of accessibility facilities such as quality of sidewalk, existence of ramps, less -ideally no- barriers on sidewalk and accessible public transport stops/stations and vehicles.

-The second one is the issue of old residential areas and their accessibility. Inaccessible point maps and accessibility problems intensification maps above revealed a direct relationship between old built environment having residential land use structure and inaccessibility. Old Bahçelievler, Beştepe and Söğütözü residential settlement areas are the ones in which problematic points of accessibility intensify. Therefore, there is an observable relationship between old residential urban fabric and accessibility. Other than these two statements, accessibility problems scattered around hospitals, business centers, shopping malls, public institutions and commercial uses homogeneously without showing any intensification on certain areas.

In terms of the relationship between accessibility level and socio-economic structure, classification of residents with respect to socio-economic status was mentioned within the research and the part studied on Atatürk Boulevard is omitted since there is no settled population living on the line. Table 7.3 shows socio-economic status group and accessibility scores of each case study areas. Letter 'A' represents the highest socio-economic status, then comes 'B' and lastly comes 'C1'. The sequential order in this respect is Bahçelievler (50,6 accessibility points), Söğütözü (45,3 accessibility points) and Beştepe (38,6 accessibility points). Therefore, it is worth to keep in mind that there could be a direct relationship between accessibility level and socio-economic status. This relationship implies that the neighborhoods with a high household income level present a more accessible urban environment. Considering spatial case study research, it is acceptable that Bahçelievler presents a more accessible environment compared to other cases. However, the accessibility score of Bahçelievler is 50,6 indicating extremely inaccessible urban fabric compared to standards. Consequently, to obtain seamless mobility with a perfect accessibility chain, overall accessibility level score needs to get close to ideal standards.

Table 7.3. Socio-economic Status and Accessibility Scores of Case Study Areas

	Bahçelievler Neighborhood	**Beştepe Neighborhood**	**Söğütözü Neighborhood**
Total Population	2636	12059	8695
Socio-economic Status Group	A	C1	B
Accessibility scores out of 100 points	50,6	38,6	45,3

In terms of the question of whether same urban rail system offers different accessibility levels in different neighborhoods, the answer could not clearly be specified according to the results of spatial case study analysis. Within the analysis Söğütözü, MTA, AŞTİ, Beşevler, Sıhhiye and Kızılay Metro and Ankaray (LRT)

system station entrances/exists were examined and several problems such as tactile pavement problems and not working elevators were detected. Those problems did not indicate outputs to make inferences about accessibility levels in different areas.

After the conclusive inferences over research sub-questions, it is quite useful to combine the results of case study research and focus group discussions. In other words, the comparison between objective researcher perspective and subjective user perspective is expected to generate a blend of two different scientific approaches into one part of the research. In this respect, Table 7.4 gives a conclusive summary output composed of outcomes of spatial aspect of focus group discussions compared with the ones from case study analysis, and the last column mentioning if the qualitative data is verified with the acquisitions of quantitative case study research or not.

Table 7.4. Summary Outcomes of Spatial Aspect of Acquisitions from Focus Group Discussions in Comparison with the Outputs of Case Study Research

Main Issues Discussed in Focus Group Discussions	**Outcomes from Focus Group Discussions**	**Outcomes from Case Study Research**	**Data Verification**
Prominent accessibility barriers	Surface quality of sidewalk Barriers on sidewalk Problems related with ramps Accessibility barriers for bus stops and buses	Pedestrian sidewalks and ramps are the most prominent indicators as barriers	Verified
Accessibility Score of Ankara	87.1% of participants gave 2 and 3 points (out of five): There are serious accessibility barriers in Ankara	There are serious accessibility barriers in Ankara	Verified
Percentage of the Use of Road Level rather than Sidewalk Level	96.8% of participants use road level (meaning that pedestrian sidewalks have plenty of accessibility barriers)	Pedestrian sidewalks have plenty of accessibility barriers	Verified
Types of Barriers on Sidewalk	Level differences and deformation of surface of sidewalk, and lack of ramps were predominantly selected.	Sidewalk surface problems and level differences represent most prominent accessibility barriers.	Verified
Barriers at Crossing	Lacking, narrow, steep, ramp with not smooth surface and level differences by getting 71% of all choices	Ramps have slope, surface and width problems as barriers.	Verified
Accessibility to be Considered as A Chain	Accessibility chain is defined indirectly (barriers are mentioned separately by users)	Accessibility is clearly inferred as a chain.	Verified

Table 7.4. (continued)

Smart application systems	For especially visually impaired people, smart systems are important	No data from case study research	No coincidence
Barriers with Overpass and Underpass	Lack of or not working elevators or automated platforms (77.4%) Others: Steep ramps and no overpass/underpass	No data from case study research about working condition of elevators	No coincidence
Accessibility Barriers Faced by Parents with Baby Stroller	Similar accessibility problems with physically impaired people (especially with people using wheelchair)	No data from case study research	No coincidence
Accessibility of buses, bus stops, urban rail systems, and Dolmuş	There are accessibility barriers for buses, stops and urban rail systems. Not working elevators, and gap between wagon and station platform are the main accessibility barriers.	No data were obtained for vehicles. Stops and stations have accessibility barriers.	Partially verified
Mode Choice of People with Disabilities	Metro and buses as the most frequently used ones	No data from case study research	No coincidence
PRMs' Public Transport Use	They have hesitation to use public transport. Dolmuş has almost never been used by PRMs (Dolmuş carries daily 25.5% of total public transport passengers in Ankara. Parents with baby stroller mostly prefer to use their cars.	No data from case study research	No coincidence
Car as an Accessibility Barrier (including the score of Ankara)	Car is a barrier (parked or waiting cars on sidewalk (16 participants gave four and five points; 13 participants gave zero, one, and two points) Car is a barrier due to inconsiderate attitude of drivers Ankara is a car dependent city As the counter argument, car is a significant facilitator of accessibility.	No data from case study research except a few photographs. Personal observation indicates that car is a significant barrier that makes Ankara a car dependent city.	Controversial
Accessibility of Parks	For especially visually impaired people, parks have plenty of barriers (surface of paths, gradient and narrowness of paths, barriers on walking route and branches)	Parks are almost problem-free	Controversial
Tactile pavement as an accessibility component	Controversial issue: despite problems tactile pavement system is crucial vs. tactile pavement is a component of discrimination	There are problems with tactile pavement especially with sticked ones.	Controversial

According to comparison table, each row is discussed including the data verification as a comparison. The table begins with questioning what the spatial accessibility barriers are. User perspective mainly focuses on barriers with sidewalk, ramps and

getting on/off the bus. Except for the accessibility analysis of buses, case study research exactly verified barriers on sidewalk ramps and bus stops. The interesting point here is that the three components of accessibility can also be considered as the first three links of most of the accessibility chains. However, if sidewalk has plenty of barriers, PRMs cannot use sidewalk; given that they use sidewalk, then they cannot use ramps; and given that they use ramps and reach the bus stop, they cannot get on the bus because of spatial accessibility barriers. Finally, they remain deprived from right to access since it is impossible to achieve accessibility chain through independent mobility.

Most participants of meetings scored that accessibility of Ankara is below average that means most of them think that they are living in an inaccessible city and they many things to say about the barriers in the city. As a supporter of this argument, case study research revealed similarly that Ankara is composed of accessibility barriers in terms of pedestrian sidewalk ramps, crossings, and public transport. Therefore, it is noteworthy to infer that selection of Ankara as the case study area for both researches is an exactly correct choice.

A critical question was asked to all 31 participants of different focus group discussions: ‘Do you use road level rather than sidewalk level?’ This question was expected to trigger answers and give an idea towards a specific short-cut statement; if they have been using road level, then it would have meant that sidewalks and ramps could be full of barriers. Keeping in mind that participants live in various parts of Ankara, 96.8% of them prefer to use road level except for one single participant taking a probable risk of accident. Furthermore, this fact verifies what case study research in Ankara proposes in a sentence that is pedestrian sidewalks have plenty of accessibility barriers. The consequence indicates that it is worth to study Ankara as the case study area of an inaccessible city. From another perspective from a deeper comprehension of the essence of sidewalk and road relationship, sidewalk is one single raised lane of vehicular road, (with changing width) to address people on foot to access urban services. When we have a look at any street in Turkey on a map, narrow lanes that are called sidewalk, and wider and multiplied lanes for vehicles

that are called carriageway (or directly road) are seen that dominance of motorized vehicle is predominantly accepted over pedestrian access. At this point, this coincides with the discussion made by Harvey (1985) highlighting that within neo-liberalism process, cities play the role of being a mirror reflecting capital accumulation through new constructions and infrastructural investments. Urban transport is one of the most prior arenas of such capital accumulation processes that results in huge highways, prioritization of car dependent urban form as well as narrowing down sidewalks. In short term, it surely does not mean that cars must be eliminated and road -namely public spaces- must be given to its real owner, to pedestrians. However, each single individual needs to start thinking that our cities have a problem with car dominance as well as car dependency. Although there is a need for urgent sustainable and accessible solutions with an idea of adapting active travel modes in urban transport as well as urban and regional planning, we really need to start primarily to understand what the essence of the problem is. Without a deep internalization of the need for accessibility through a more sustainable mobility patterns in the minds of inhabitants, private sector representatives and policy-makers, it is even impossible to imagine to transfer the right to access from cars to pedestrians.

In the context of research structure, case study analysis was firstly done before focus group discussions. It revealed that there are plenty of various types of barriers in urban space. Then, users were asked to elaborate what types of barriers they mostly face. The predominant types emerged as level differences and deformation of surface of sidewalk, and lack of ramps. As a supporting fact, case study analysis detected barriers with pedestrian sidewalk and ramps as prior ones. Therefore, it can be noted that once local governments intend to fix spatial accessibility barriers, pedestrian sidewalk and ramps could be correct starting points.

Accessibility is a notion to be thought of as a chain containing links that form various stages of a journey. Every roundtrip link in the chain must be accessible to everyone. In each probable accessibility chain, crossings stand as an accessibility indicator connecting sidewalks with each other or with other urban services. In case study

research, ramps particularly emerged as barriers for crossings. Similarly, user perspective noted that ramps stand as the most prominent accessibility barrier for crossings. Lack of ramp and narrowness, steepness, rough surface with level differences is declared as main problems. The results of two researches in terms of crossing analysis coincides with each other. Therefore, ramp that is for eliminating level differences between sidewalk and road is a significant part of accessibility of PRMs. From another look, the reason to have steep ramps and level differences between the end of ramp and road level is that height of sidewalks is quite high in Turkey. Therefore, it could be a good starting point first to start thinking on decreasing the height of sidewalks by ensuring pedestrian safety on sidewalks through discouraging policies towards private car use. Ramps, sidewalk height and decreasing the number of cars in urban traffic need to be considered together since drivers have an insistent tendency to use sidewalks or crossings as waiting or parking spaces in Turkey.

Theoretically, accessibility does not merely mean having barrier-free sidewalks as a result of partial accessibility rules. It is the result of a chain of thorough policy-making and action that begins with pre-trip activities at home, right before the trip. The chain's connections are thus the accessibility of the urban physical environment, public transportation stops/stations or coach terminals (in the case of intercity travel), and the vehicle (bus, Dolmuş, train, or coach and plane). After disembarking from the vehicle, further rings can be added to the chain by planning new locations along the way or by returning home. In this respect, Zajac (2016) stated that accessibility barriers could originate from urban space and/or public transport that require a proper socio-spatial design in cities. In both spatial case study research and focus group discussions, accessibility barriers are directly or indirectly defined along with the links of chains. In Turkey, to make cities more accessible, local governments make refurbishments or new urban infrastructure constructions such as renewal of sidewalk stones, constructing ramps on the points that are required one, or mounting lifts to municipal buses. However, PRMs have evidently and deeply been experiencing spatial barriers despite such efforts of local policy-makers.

Then the question arises considering spatial aspect: why do we still have accessibility barriers despite those efforts? The answer is clear by means of spatial aspect. Barriers have not been considered as a chain that requires a database in which each accessibility barrier point is pinned with its explanations, which is what was done in spatial case study analysis. To solve the spatial problems sourced by accessibility barriers by considering them as parts of an accessibility chain, initially there is a need to see all the barriers on a map showing the proximities of barriers, the relationship of barriers with land use, and which part of the city requires an urgent intervention. Furthermore, spatial case study analysis conducted through GIS mapping database in the thesis also proved that having a database of barriers is an approach of smart city solution enabling transformation of digital data into socio-spatial urban policies that could have direct impact on the challenge of eliminating spatial accessibility barriers. In addition, it needs to be kept in mind that spatial aspect is bonded with societal and administrative aspects meaning that while solving a problem at spatial pillar, other pillars -societal and administrative- need to be considered simultaneously.

Smart information systems and mobile applications are crucial for people with disabilities for trip and route planning, for especially people with wheelchair and visual impairment (i.e., 'Wheelmap, 'Navilens', 'Appertum'). In focus group meetings, the use of smart systems is emphasized by participants with visual impairment as one of the most significant complements of their accessibility. The following examples are the ones that could be inspiring for the future of spatial accessibility in Turkey. For example, Wheelmap is an app using information derived from crowdsourcing but is aimed specifically at wheelchair users. It collects and then shares information about the level of wheelchair accessibility of locations throughout the world, using a four-point scale that states whether a place or facility is 'Fully wheelchair accessible', 'Partially wheelchair accessible', 'Not wheelchair accessible' or 'Unknown' in terms of wheelchair accessibility (Figure 7.1). This information is displayed using colored symbols on a map (Sozialhelden, 2019).

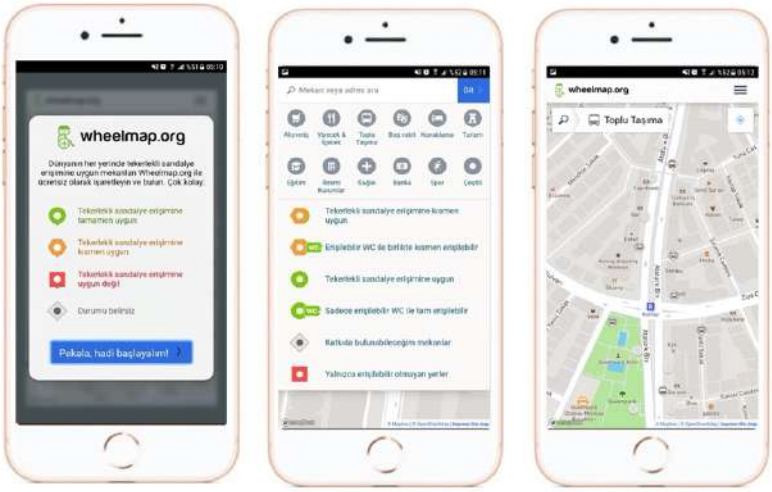


Figure 7.1. Application Menu of 'Wheelmap' with Screenshots (Sozialhelden, 2019)

Another mobile application that facilitates the lives of people with visual impairment is 'NaviLens' which is offered for service in Barcelona, Spain. NaviLens mobile application is a new holistic system that is based on computer vision. This application reads a special label attached on subways, ticket machines, signs of public transport and bus stops from a substantial distance (similar to 2d-code reading) and gives necessary information to people with visual disabilities vocally (Figure 7.2). In this way, the user listens to the vocal information and finds her/his way accordingly (Navilens, 2022).



Figure 7.2.Examples of QR Labels to Be Scanned by Navilens App (Navilens, 2022)

Case study analysis in Ankara (in four case areas) stated that there are accessibility problems with the old overpasses that have no facility to enhance easy access of PRMs. Apart from the old ones, the ones providing connection to metro stations seemed accessible by means of existence of elevators, ramps and guardrails. However, focus group meetings revealed a significant fact that elevators of underpasses and overpasses do not usually work. From spatial aspect, it looks problem-free, but operationally, a significant administrative management barrier exists.

United Nations (2013) put forth the Design for All approach as a tool to generate comprehensive accessibility policies. The term 'for all' indicates not only people with disabilities but any person having reduced mobility by means of accessibility. This is in line with the definition of PRMs made by European Commission (2014) stating any person who has permanent or temporary physical, mental, intellectual or sensory impairment. Within the context of the research, parents with baby stroller are included in focus group meetings as representatives of persons with reduced mobility other than people with disabilities. They mostly contributed the spatial aspect of accessibility in terms of sidewalks, ramps and public transport stops and stations. It was revealed that they have been experiencing almost the same challenges as people with physical impairment, especially the ones with wheelchair as significant group people dealing with accessibility barriers. They mentioned that independent mobility cannot be possible for them unless they have someone else as accompanying person with them. Although a small sample is taken from this group, they insistently stated that they have to use their cars for daily urban mobility trips, which implies private car use as a prominent determinant of accessibility from both spatial and administrative aspects.

Accessibility of public transport systems is comprehensively investigated in the content of the thesis in two parts. In spatial accessibility analysis, data were obtained about accessibility of bus stops and rail system stations leaving barriers with public transport vehicles omitted. Right upon case study analysis, focus group discussions complemented public transport accessibility analysis by investigating both public

transport stops/stations and vehicles. In other words, the acquisitions from focus group discussions are mentioned to be partially verified since case study research only produced data about stops and entrances of stations. As another core part of accessibility chain, especially bus stops and entrances of buses are extremely problematic for PRMs. This fact stands as a fundamental spatial links composed of barriers interrupting accessibility chain. In addition, accessibility of public transport also contains vital societal barriers that discourage PRMs to use public transport in daily urban trips. In means being aware of bondedness of spatial aspect with other aspects is crucial to generate effective solutions of accessibility.

In relation with the previous one, focus group participants were asked which public transport mode they prefer. This question presented a clear indication of accessibility ranking of publica transport modes in Ankara. Urban rail systems stand as the most accessible modes along with not-working elevators and gaps between station platform and wagon. However, getting on and off a bus reveal plenty of spatial, societal and administrative barriers, which gets the second mostly used mode. Then, as expected, *Dolmuş* has almost never been used by people with disabilities and parents with baby stroller.

In relation with the previous analysis of questioning the use of public transport modes, an overall fact arose as PRMs have an overall hesitation to use public transport due to accessibility barriers. Among other modes, *Dolmuş* is one of the mostly preferred public transport modes in Ankara (a privately operated-owned public transport mode) which serves many parts of the city a as a mode carrying one fourth of all public transport passengers in one day according to modal shares as of February 2020. On the contrary, it is the least accessible public transport mode. In addition, inaccessible public transport addresses PRMs, who are able to drive a car, to purchase and use private car for daily trips that emerged as a controversial issue among PRMs. As an overall inference, PRMs face accessibility barriers in public transport systems, and people with disabilities have privileges as tax discounts in purchasing a car. From one side, car ownership and use are encouraged as an administrative policy, which is quite fine for people with high level disabilities. In

fact, some of the participants insistently defended the advantages of the use of car. From other side current accessibility discourse defends the significance and sustainability of walking and public transport as active travel modes. Then a fact related with the essence of these two-sided approaches arises: the distances are extremely long in Ankara and in many big cities in Turkey. This brings about a need for questioning urban development and urban form. Analyzing the topic over the case of Ankara, urban development has triggered a sprawled macroform that increased the distances between residential areas and other urban services of working areas, health facilities, schools, open and green areas. Keeping in mind that the stem of accessibility word is 'to access', and the first and foremost principle to access is having a reasonable distance between urban services. Ankara is a city far from the discourse that promotes mixed urban land uses and compact urban form in which distances are decreased and walking and cycling are encouraged. By combining these with the following argumentation of whether car is an accessibility barrier or not, new ideas of urban forms such as '15-Minute city' and 'Superblock' interventions in Paris and Barcelona are exemplified a way towards spatially accessible city.

The rationale behind selecting Ankara as case study area, the as the city in which sample participants of meetings lives, is explained in detail before explaining researches. Theoretical framework of right to access has a specific emphasis on the fact that car oriented urban mobility structure deeply affects accessibility of urban space. In the simplest terms, more cars in traffic means increasing demand over more public space allocated for vehicular traffic, and as an outcome of induced traffic effect, it generates new demands and more cars again in traffic. This cycle is an exact outcome of what car dependency is and Ankara is regrettably a perfect example of a car dependent city with a 38,6% of private car use modal distribution of daily motorized trips in Ankara as of February 2020. Combining the outcomes of theoretical review, results of two field researches, modal share distribution of Ankara, and personal observations, Ankara is a car dependent city, which results in spatial accessibility barriers for PRMs. Integrating the discussion with the former urban sprawl problem in relation with accessibility discussion, the contemporary

practices aim to experience cities with more walkable urban services and shorter distances. The first example is 15-Minute city approach popularized by Paris Mayor Anne Hidalgo and explained as: “The 15-Minute City Project is designed to help access-focused urban transformations be what we need them to be: ambitious, inclusive, measurable and effectively implemented” (Luscher, 2020). The aim of the project is creating the neighborhood in which urban services are accessible by walking and cycling as a long-term urban neighborhood plan. The interventions are planned as a participatory process with four principles: proximity of urban services, diversity of land uses as a mixed-use development, enough density to support a diversity of businesses in a compact area, and ubiquity that makes the neighborhood to be available and affordable to anyone who wants to live in. The 'Superblock' program in Barcelona's Eixmaple District is the second example. This idea aims to reduce car occupancy on streets, increase the percentage of green areas and green streets, and eliminate air pollution in the city through a new public transport system, route and accessibility re-designing on the grid system to eliminate environmental and health problems as well as an emerging urban mobility crisis. These practices are in line with the discussion made by Banister (2011) mentioning that mobility interventions play vital role in developing a mixed-use and dense urban pattern and physically, socially and economically sustainable urban development. By mentioning these two examples, the aim is not to suggest a direct adaptation of these projects to our cities. Instead, they are sustainably accessible inspirations including an effective coordination between urban space, societal aspects alongside with administrative policies that coincide with prospective solutions of accessibility barriers in the cities of Turkey. However, the counter argument stated by some of the participants redefines this issue as a dilemma since there is no consensus among participants of focus group discussions to define car as a barrier. It is fine to understand that car provides door-to-door transport in the city that seems to be exactly what PRMs need. However, car dependency has environmental, social and economic consequences triggered by misleading policies of central and local governments. Furthermore, once participants were asked what if

the entire city was accessible would they still prefer their car, some of them answered yes taking the value of walking and social interaction into account by additionally mentioning that this would be a dream but not a reality.

In terms of parks another dilemma emerged not among the participants, but between the outputs of case study research and focus group discussions. Investigated parks in Ankara revealed very few barriers that made parks as the most accessible indicator in Ankara. On the contrary, in terms of rough walking paths with steep ramps were mentioned as barriers in parks that makes them hesitate to go. Specifically, branches on the eye level create significant barriers for visually impaired people, which is a significant barrier not detected neither in case study research nor participants of discussions except visually impaired.

The last issue is another dilemma about tactile pavement in the discussions. Among user perspective, one approach thinks that tactile pavement is a crucial urban spatial accessibility facility guiding people with visual impairment despite structural and maintenance problems. On the other hand, another approach suggests that sidewalk with its each sing characteristic needs to be accessible in a well-designed and maintained manner. Once all sidewalks are accessible, there will be no the need for tactile pavement as well as discrimination related to it. This opponent side notes that assigning a specific route on the sidewalk is a sort discrimination, each piece of public space belongs to all. The ultimate aim of both views is having accessible urban space free from any barriers by following different paths. This discussion is quite similar to the one about positive discrimination, which will be discussed under social aspect as a barrier. In Turkey, it is not possible to remove all tactile pavement system and expect PRMs to use each piece of sidewalk as their right to access in short terms. From another approach, it is again not possible to maintain tactile pavements as the best solution by assigning specific line on sidewalk. Both approaches are right, but for different time periods. A two-level stage solution can be proposed in this sense.
- The first stage is the short-term solution: a well-structured and maintained tactile pavement system is provided, and at the same time period, strategies and policies are designed and implemented to make all sidewalks accessible free from any barrier,

roughness on surface of sidewalk and ramps, steep ramps, and inaccessible public transport systems.

- The second stage is the mid- and long-term solution: providing that all facilities related to urban spatial accessibility are ensured and maintained, then there will be no need to keep any tactile pavement system. At the end of the second step, the only challenge would be the maintenance and inspection from administrative side, and socially inclusive perception for all persons with reduced mobility from societal side.

This second step seems to be an imaginary case once we have a look at the current practices, not because of the difficulty of eliminating spatial accessibility barriers. If there were enough budget and prioritization of accessibility policies, it would not be challengeable to remove spatial aspects. However, societal aspect needs to considered as significant as spatial. The overall outcome of focus group meetings is that without societal policies, spatial accessibility policies do not work.

7.4 Societal Aspect as a Barrier

In Turkey, perceptively, the prominent challenge for accessibility is societal barriers as significant as spatial ones. One of the top priority indications obtained as a consequence of legal aspect, researcher perspective and user perspective is that particularly people with disabilities have been experiencing unsociability and social embarrassment processes since they sick of all the spatial and societal barriers they have been facing. For an able-bodied person, a journey that is only a 5-minute walk away -for example, going shopping from home, going to the bus stop from work- can turn into a complete socio-spatial challenge for a person with reduced mobility. While an able-bodied person is able to reach the destination by ordinary walking on the sidewalk, a person with reduced mobility has to make quite differentiated plans and brainstorming prior to the journey; barriers related to the sidewalk, the problem of not opening bus lift, how the bus driver's attitude will be, how other people will

look when s/he gets on the bus. All these social and spatial barriers stand against right to access.

In this section, a conclusive analysis is presented about societal barriers mentioning social exclusion and unsociability, lack of awareness, positive discrimination, and how learning can be a part of the solution.

People with disabilities have the right to participate in daily and professional life as equally as able-bodied people. Once it is accepted that accessibility depends on a right-based approach, first of all, the right to access is a baseline to be able to access. As mentioned in the accessibility chain discussion, as each inaccessible point in the city is interconnected as a link in the chain, they eventually emerge as spatial and social barriers to accessibility. Focus group discussions revealed that social exclusion and social embarrassment experienced by people with disabilities are primarily manifested in professional life and public transport trips. It is not possible to cope with spatial accessibility barriers without accepting the fact that people with disabilities in social life have no single difference from any others, regardless of their level of ability to access. along with this equality emphasis, trying to help a person with a disability, despite not seeking help, is clearly turning into a social exclusion process. It is a fact that spatial barriers make them be in need of help. However, no matter they need help or not, and no matter how able-bodied people perceive disability, the helping process turns out to be an embarrassment considering and acting as if they are different. Therefore, emotional and psychological consequences emerge and become difficult to get better. To reverse the embarrassment and social exclusion process, there is a need for a perceptual paradigm shift for able-bodied people starting with not considering people with disabilities and all other persons with reduced mobility as different from anyone else. The notion underlying this transformation is: accessibility is a right for all, no matter what the ability to access is.

The second discussion is about lack of awareness for people with disabilities, able-bodied people, and drivers. Initially, the question of lack of awareness of what is

worth to be defined. Awareness is a concept indicating the level of comprehension on a specific reality. First of all, there is a problem with the definition of this reality that needs to be aware of by means of right to access and disability. In Turkey, disability comprehension still remains at the level of medical model that represents consideration of any physical or mental lacking as a medical issue to be cured. In other words, there is an approach towards persons with disabilities as they are different group of individuals probably seeking help. This perspective is not acceptable in the framework of the current discourse. People with disabilities and all persons with reduced mobility are parts of the society having any sort of freedoms and rights as any other individual. Therefore, the reality to be aware of is that they are not different; only their ability of access is restrained by the city, by the society; above all, by certain disablers. This is the notion that each single member of society must be aware of.

Social barriers prevent PRMs to right to access to be ensured in Turkey. User perspective stated that there are three groups in society who have been lack of awareness about accessibility as a right to access for PRMs. The first group is strikingly people with disabilities. Differentiating approaches of people with disabilities on certain issues is quite normal and favorable. However, right-based approach must be the concrete assumption that needs to be adapted as given in the minds of the main beneficiaries of accessibility policies. As mentioned by user perspective, there is still no consensus about what the rights are and how accessibility to be considered as a right. In addition, there is a misperception among people with disabilities about privileges and discounts as rights, which makes them politically vulnerable and open to manipulation. Above all, people with disabilities need to be aware the fact that right to access is not something to be the subject of any help, privilege or discount. It is a right that needs to be aware of by firstly people with disabilities. The second group who have been lack of awareness to consider PRMs' right to access is able-bodied people. When a person with wheelchair is getting on a bus, other passengers need to observe the case as 'a passenger is getting on the bus', not as 'a person with disability is getting on the bus and most probably we will have

to help her/him'. This is the awareness to be shifted from perceiving people with disabilities as a member of marginal group in the society. However, to enable such a perceptive paradigmatic shift, then the question comes to the statement of interdependencies of societal and spatial aspects. Considering above mentioned example about getting on the bus, without the entire bus and bus stop stock accessible with appropriate lifting system and bus floor level, it will not be possible even to talk about enabling societal awareness raising aspect for able-bodied people. The third group who have been lack of awareness to consider PRMs' right to access is drivers of buses and private cars. The attitude of bus drivers is a significant determinant that encourages or discourage people with disabilities to use bus as a public transport service. Their complaining or extreme helping attitude might stand as a societal barrier. Especially, cars on sidewalk or in front of crossing and inconsiderate attitude of car drivers ignoring pedestrian priority right at crossings are the main barriers not sourced by spatial or legal deficiency, but by a lack of awareness about right to access of PRMs for a group of actors -drivers- in urban mobility.

Discrimination is explicitly defined in supranational documents, the Constitution of Turkey, and Law on People with Disabilities that frame the boundaries of discrimination as a crime. On the other hand, there is another argumentative term, positive discrimination, is understood as a right and something to be pursued. In this respect, controversial opinions emerged among people with disabilities. One side defends positive discrimination as a right. The other side proposes that no matter it is positive, it is still discrimination, not a right. Critically discussing the proponents' approach on positive discrimination, there exists a tiny line between two different understanding of the term. For one understanding, if positive discrimination is seen as some strictly determined priorities to people with disabilities, it might be considered as useful in short-term since urban space is inaccessible and it could be appropriate to support them at some certain measures. For the second understanding, if positive discrimination is seen as one of the core rights that needs to be pursued no matter what the current spatial, societal and administrative condition is, then it could be nothing different than other sorts of discriminations in terms of language,

sex, political opinion, or religion. Therefore, there is a need to start with the naming of the term composed of two words: ‘positive’ and ‘discrimination’. It firstly sounds as nothing positive is possible to be the subject of discrimination concept. Interestingly, the official dictionary of the Republic of Turkey, ‘Turkish Language Association Dictionary’ defines positive discrimination, and more interestingly, the definition is “supporting certain groups that are not thought to live on equal terms with others in the society by granting them various privileges”. It is not acceptable to adapt a term of ‘positive discrimination’ and defining vague privileges to an undefined group of people in the society. It needs to include neither the word ‘discrimination’ nor ‘privilege’, the correct term could only be ‘priority’ to a certain extend. The reason to open a linguistic discussion for positive discrimination is that it is quite misleading among people with disabilities. what my standing point within this controversial issue is both approaches have right points to a certain extend. First of all, the definitions addressing such a priority on legislative level need to be revised in a way to take the word ‘priority’ as the basis. Then, a prospective solution can be framed as a two-level stage program as having a similar template with the one discussed for tactile pavement:

- The first stage is the short-term solution: In legal terms, specific, well-defined along with related actors as both beneficiaries and implementers priorities could be provided in the short term until the elimination of spatial barriers against right to access. Only a spatially accessible city could convince people with disabilities as the proponent of positive discrimination to give up perceiving positive discrimination as a right.

- The second stage is the mid- and long-term solution: This level is close to what opponents of positive discrimination proposes. This stage is the second level assuming all spatial accessibility barriers were eliminated and the was no need to have any priorities, privileges, or positive discrimination

As a final conclusive analysis of societal barriers, user perspective proposed learning as an overall solution according to inferences made from focus group discussions.

The first step is whole societal setting needs to learn how to perceive disability and accessibility. The second step is participation of users as a part of policy making practices as active citizens. However, the third one is a controversial one from my point of view to the discussion. Some of the participants suggested that other people need to learn to empathize what the experiences of people with disabilities are. Empathizing implies a meaning as understanding what another group feel and experience. In addition to this understanding, there is an ongoing trend having a notion as "everybody is a candidate of a person with disability". This statement unfavorably orients able-bodied persons' and policy-makers' perception of disability and accessibility as an extreme circumstance that needs to be avoided. Participant F4-S from focus group discussions puts a specific emphasis on this issue.

> There is a notion on the agenda: 'everyone is a disabled candidate; we can never know who will be disabled and when'. Disability is seen as if it was the end of the world. This is a very wrong approach. If your approach is from this point, it is impossible to see the world clearly. What if I am sensitive to animal rights, do I have to feel like I could be an animal?

The statement assumes that the feelings of people with disabilities need to be understood and behave accordingly. Furthermore, the notion represents the main approach of some governmental organizations, NGOs, and local governments (Figure 7.3).



Figure 7.3. Posters of Some Governmental Organizations, NGOs, and Local Governments Having the Unfavorable Notion of 'Everybody is a Candidate of A

Person With Disability' (Çanakkale Gençlik ve Spor İl Müdürlüğü, 2018) (Beyoğlu İlçe Milli Eğitim Müdürlüğü, 2019) (Şafak, 2020) (Meslek Adamları Birliği, 2020)

Two contradictory statements emerge as;

- Statement one: We have to understand the feelings and experiences of people with disabilities, and must provide accessible cities since everybody is a candidate of becoming a person with disability.

- Statement two: Right to access is one of the human rights for persons with reduced mobility. As this is a human right, right to access must be ensured.

From the stance of this thesis, statement one needs to be denied, and statement two needs to be adapted without doubt. In this respect, empathizing is an argumentative word from right based approach.

Consequently, it has been justified how interrelated spatial and societal aspects are. Without enabling one, the other does not work and interruption-free accessibility chains could not be possible to ensure. Furthermore, there is one final aspect representing policy-making side of right to access, which is the last interdependent layer upon the other aspects.

7.5 Administrative Aspect as a Barrier

Spatial and societal aspects are embedded with each other and a deficiency in one causes the other to emerge as a barrier. Administrative aspect is another one lying upon the former embeddedness as policy-making, implementation, inspection, and budget prioritization. User perspective indirectly highlighted four issues in this respect: implementation deficiency of legal measures and standards, deficiencies with inspection, wrong decisions and attitudes of administrative authorities, and if budget allocation is the barriers or lack of prioritization.

Conclusive analysis made under 'legal aspect as a barrier' stated that, as a verified result through legislative framework analysis desk research and user perspective, a

well-framed set of rules exist for accessibility of people with disabilities in Turkey, and the real challenge emerges as the implementation of rules. Looking from a broader outlook, there are rules to be reflected upon urban space, however the expected reflections are not visible. Then, there is a breakage worth to examine.

Inspection is the fact that whether the implementation correctly carried out or not is not left to the initiative of the implementer. There must surely be an effectively working control mechanism over the processes. Otherwise, the problem of monopolistic decision making and implementation arises, which results in accessibility barriers. In this respect, the decision -i.e., refurbishment of a sidewalk- is taken by policy-maker -i.e., general directorate of construction of a municipality, implementation stages are determined by the policy-maker, and implementers are assigned by policy-maker. At the end of this flow, the output needs to be inspected by independent institutional body, which also mentioned in focus group discussions. Here, there is a reasoning to note the term 'independent' since policy-making, implementation and inspection are the processes open to the external political impacts, personal interests and manipulation. To avoid these externalities, what needs to be taken as an action is the perceptual paradigm shift for primarily policy-making authorities towards adapting accessibility as a right. In Turkey, the policy-making and implementation flow starts with central government at the top including central decision making as the assembly and followed by the related ministry, local government, then related department of local government, and field implementers as foreman and workers. The right to access understanding primarily needs to be adopted by the top of the hierarchy, then by all other actors intervening in the process of implementation.

User perspective proposed fining and rewarding mechanisms as the solutions for implementation and inspection deficiencies. However, effectiveness of fining and rewarding is a quite debatable issue. In the related chapter of the research, a question mark is addressed to this part: Would local governments take the necessary measures of accessibility because they internalized the accessibility problems of PRMs and consider lack of accessibility as a real barrier or because they have to due to financial

costs of fines or competitive reputation that they get through rewarding? Fining and rewarding are called sanction mechanisms. There is a direct relation between sanction mechanisms and implementation in a way that if accessibility interventions are carried out correctly only for the sake of avoiding sanctions; or from a reverse reading, if sanctions did not exist would there still be well-working accessibility measures. Therefore, there is a need for a perceptual paradigm shift towards considering right-based approach of accessibility, which will bring internalization of right of access for policy-makers, decision-makers and implementers.

A dilemma was formed by the combination of different user opinions about an investigation for the underlying source of accessibility barriers. One group stated that there is nothing to do with local governments since they have budget deficiency problem to implement accessibility policies. Another group stated that budget is not a problem for local governments, the problem is addressing the budget for the accessibility benefit of people with disabilities that means lack of prioritization. However, the discussion needs to start from beyond a practical matter of a lack of budget or prioritization. The problem is the lack of perceptual understanding of the fact that PRMs are not the members of a marginalized group, do not always in need of help, are not different but just in need of elimination of spatial, societal and administrative barriers to ensure their right to access alongside with independent mobility.

User perspective mentioned that because of attitudes of representatives of central and local governments, people with disabilities are sometimes aggrieved. The unfavorable consideration of people with disabilities in society as a marginalized different group of people who are assumed to be always in need of help constitutes the basis of the problematic attitudes of policy-makers, which result in seizing of right to access of people with disabilities. To open a new path towards having cities free from spatial, societal and administrative barriers, the thesis research frames a four-stage solution flow:

- Stage 1- perceptual paradigm shift for the whole society and policy-making bodies towards right-based understanding of accessibility,

- Stage 2- Among people with disabilities, arriving at a consensus on right to access as one of their prominent rights and the basis for the elimination of spatial, societal and administrative barriers,

- Stage 3- Participation of people with disabilities and other beneficiaries -as they are called as PRMs in this research- in decision-making processes, and

- Stage 4- Participation of people with disabilities and other beneficiaries in inspection processes.

It is certain that it has never been and will not be possible to eliminate all wrong decisions and attitudes of policy and decision-making bodies since human nature varies and all decisions are sourced by individual or a combination of individual opinions of representatives. However, it is surely possible to mount right-based approach as the philosophical base of the discourse, which needs to be the most prior action to be pursued.

7.6 Concluding Final Words: Revisiting the Hypothesis and Research Questions of the Study

The main hypothesis of the research is that 'Right to access is a right for all and the way to have accessible cities is possible as long as a comprehensive accessibility framework is ensured, including four interdependent aspects: legal, spatial, societal, and administrative'. At the end of the researches of the thesis, it can be mentioned that right to access is one of the human rights that is not assigned to specific groups in society such as not only to able-bodied, or to car owners. In the content of the research, persons with physical and visual disability, and parents with baby stroller are taken as sample beneficiaries of accessibility. It is a right for all PRMs since each person with reduced mobility has both common and variable needs and demands. In addition, the hypothesis highlights that the only way to have accessible cities is

considering legal, spatial, societal and administrative aspects interdependently. A gap within one aspect could probably change the entire accessibility structure of another aspect. To consider this interdependent network of aspects, the initial step needs to be understanding accessibility barriers by asking meaningful research questions.

The thesis is composed of one main research question and various sub-questions related with legal, spatial, societal and administrative aspects. At the end of the research, concluding final words for the research questions are mentioned below Table 7.5.

Table 7.5. Concluding Final Words for the Research Questions

	QUESTIONS	ANSWERS
MAIN RESEARCH QUESTION	- How do legal, spatial, societal, and administrative aspects of accessibility, as interdependent processes, create barriers that prevent PRMs from exercising their right to access in Turkey?	Except for the legal aspect (despite some minor gaps), there are spatial, societal and administrative barriers interdependent to each other
SUB-QUESTIONS	- What is the meaning of right to participation by means of accessibility of PRMs?	It means participation of PRMs in decision-making and inspection processes.
	- What is the relationship between the concepts of accessibility and the right to the city?	Theoretical background starts from the Right to the City discussions to define accessibility as a right for all, that is the concept of right to access.
	- The Right to the City is a collective right for Harvey (2008); what does this mean for accessibility of PRMs?	People with disabilities obtained their legal rights with collective movements and still some of them have same intention to obtain implementation accessibility rights.
	- What does independent mobility bring about by means of right to access?	Independent mobility enables spatially and societally sustainable right to access.
	- Is the legal framework one of the underlying reasoning behind inaccessibility of cities in Turkey?	Despite a few shortages, legal framework is not the underlying reasoning.
	- Are there spatial accessibility barriers in Turkey? If yes, what is spatial accessibility level?	There are plenty of spatial accessibility barriers in the cities of Turkey. considering Ankara case, spatial accessibility level is below average.
	- Do the spatial accessibility barriers prevent PRMs to ensure their right to access?	Yes, a set of spatial accessibility barriers is a significant part of not ensuring right to access.
	- Is car dependency an accessibility barrier for PRMs to ensure their right to access?	Car dependency is a barrier for accessibility.

Table 7.5. (continued)

	Can accessibility be related with urban land-use structure, socio-economic status, and service of urban rail systems?	In terms of land-use: Several implications obtained from case study research that locations with old housing stock and old urban fabric have more accessibility barriers. For more precise conclusions, further researches need to be done. In terms of socio-economic status: Accessibility level and socio-economic status emerged directly proportional, for more precise conclusions, further researches need to be done. In terms of rail system service: Satisfactory data were not able to be obtained. For more precise conclusions, further researches need to be done.
	- What are the spatial accessibility barriers experienced by parents with baby stroller?	Spatial accessibility barriers experienced by parents with baby stroller are almost same with people with wheelchair.
	- Are there any discriminative measures towards people with disabilities in Turkey by means of accessibility?	People with disabilities feel discrimination against their right to access despite discrimination is clearly inhibited.
	- Are people with disabilities the only group of beneficiaries for accessibility measures?	In Turkey, apart from people with disabilities, elderly, parents with baby stroller, passengers with heavy luggage etc. all persons with reduced mobility are the main beneficiaries of accessibility policies.
	- If car dependency is an accessibility barrier for PRMs, is it a spatial, or administrative or both spatial and administrative accessibility barrier?	Car dependency is both spatial and administrative barrier. It has spatial implications that prevents PRMs to access, and it is an administrative barrier since car ownership and transport planning decisions are taken by central and local governments.
	- What would be the way for a city to become accessible within the current system of neo-liberal urbanization? (from administrative aspect)	A city can both be embedded in neo-liberal urbanization economies and be accessible by prioritizing a perceptual paradigm shift to ensure right to access, planning evolution processes by short-mid-long term stage by stage with independent inspection mechanisms, and implementing awareness raising programs.

7.7 Limitations and Further Research

In terms of research methods, four case study areas were selected for spatial accessibility analysis. Prior to the beginning of data collection, it was aimed to involve Yukarı Bahçelievler and Emek Neighborhoods to constitute a unity between

areas along Eskişehir Road, which could have provided more data about the relationship between urban rail system connections and accessibility. Due to time limitation and COVID-19 lockdown periods, only four neighborhoods were examined. As further research, more neighborhoods can be selected from areas with different socio-economic levels, areas with steep roads, areas with new residential development and old residential stock. Furthermore, accessibility of public transport vehicles was kept outside of the design of the case study research and complemented by focus group discussions. Similarly, this research is a thesis from city and regional planning, buildings and their entrances were not included within the context of research design. As further research, public transport vehicles and building aspect can be examined under another quantitative case study research.

In focus group discussion, the number representatives from PRMs could have been increased such as more representatives from parents with baby stroller and elderly people to obtain more comprehensive outputs. Persons with hearing impairment were not invited, too since there would be a need for an additional person who know sign language. In addition, discussions were conducted through online meetings due to COVID-19 pandemic. If face-to-face meetings were carried out, more differentiated outputs could have been obtained through face-to-face interaction among participants.

Prior to beginning to conduct research methods, the initial aim was to use two more qualitative research methods that are participant observation and travel diary methods. In participatory observation method, it was aimed to walk with a person with physical impairment from one point to another by taking notes; and in travel diary method, the aim was asking people with disabilities to record their journeys for one week. Due to time limitation and the fact that the used two research methods provided data at saturation level, other two methods were omitted.

In the thesis, researcher perspective and user perspective were analyzed. Moreover, there are also academic perspective and policy-maker perspective that are worth to investigate to reveal a scientific approach to right to access concept and to check the

outputs of administrative aspects through the acquisitions from policy-makers of representatives from ministries, metropolitan municipalities and district municipalities.

The perception of 'city' evolves with developing and transforming digital technologies. We might even experience a paradigm shift in the near future in this sense. The most prominent of these are new technologies are Decentralized finance systems, the development of Web-3, and most importantly Metaverse. User perspective made it clear that people with disabilities have hesitations about going out due to different spatial and social concerns. At this point, especially for people with disabilities, Metaverse technology will probably emerge as a remarkable potential by providing opportunities to visit different virtual universes, to shop, to participate in business life with the appearance of their choice in the virtual environment where all inequalities and accessibility barriers are eliminated. In other words, people with disabilities, who have already been facing the problem of unsociability and societal barriers, will be invited to the Metaverse in the near future, where they no longer need to go out and walk as in near life. This will surely have various socio-spatial positive and negative consequences. Virtual human interactions will increase, however face-to-face communication and consensus making will deeply decrease. Therefore, the relationship between one of the contemporary understandings of the city and society -Metaverse or other prospective virtual universes- and people with disabilities is an upcoming subject worth further research.

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APPENDICES

A. Article Codes, Titles and Main Topics (For International Literature Review Content Analysis)

Appendix Table A.

Code of the article	Title	Main Topic
1 (Frye, 2013)	*Disabled and Older Persons and Sustainable Urban Mobility*	Inclusion of people with disabilities for sustainable urban transport systems
2 (Wilson, 2003)	*An Overview of the Literature on Disability and Transport*	Current situation analysis for accessibility of built environment and public transport for people with disabilities
3 (Venter et al. 2002)	*Enhanced Accessibility for People with Disabilities Living in Urban Areas*	Current situation analysis for accessibility of built environment and public transport for people with disabilities
4 (Litman &Rickert, 2005)	*Evaluating Public Transit Accessibility: 'Inclusive Design' Performance Indicators for Public Transportation In Developing Countries*	Accessibility of public transport with respect to inclusive design principles
5 (ECTM, 2006)	*Improving Transport Accessibility for All: Guide to Good Practice*	Accessibility for all built environment and public transport
6 (Kuneida & Roberts, 2006)	*Inclusive access and mobility in developing countries*	Inclusive accessibility review of current condition for all
7 (Tennøy & Hanssen, 2007)	*Policies, legal frameworks and other means for improving accessibility of public transport systems in the Nordic countries*	Legal analysis and accessibility
8 (Soltani et al., 2012)	*Accessibility for Disabled in Public Transportation Terminal*	Accessibility of public transport stops/stations

Appendix Table A. (continued)

9 (Cañal & Hernández, 2016)	*An exploratory analysis of people with disabilities accessibility to urban public transport: the use of Geographical Information Systems*	Analysis of accessibility of public transport
10 (Schlingensiepen et al., 2015)	*Empowering people with disabilities using urban public transport*	Social empowerment through accessibility of public transport
11 (Aarhaug & Elvebakk, 2015)	*The impact of Universally accessible public transport–a before and after study*	Accessibility of public transport before-after comparison
12 (Priestley, 2016)	*The political participation of people with disabilities in Europe: Rights, accessibility and activism*	Rights, accessibility and activism for people with disabilities
13 (Zajac, 2016)	*City accessible for everyone – improving accessibility of public transport using the universal design concept*	Accessibility for all and universal design
14 (Sze & Christensen, 2017)	*Access to urban transportation system for individuals with disabilities*	Accessibility of public transport
15 (Hansson & Holmgren, 2017)	*Reducing dependency on special transport services through public transport*	Public transport as a sustainable mode for all
16 (Cepeda, 2018)	*How much do we value improvements on the accessibility to public transport for people with reduced mobility or disability?*	Evaluating accessibility of spatial environment and public transport for PRMs
17 (Park & Chowdhury, 2018)	*Investigating the barriers in a typical journey by public transport users with disabilities*	Analysis of accessibility barriers for public transport for people with disabilities
18 Wong et al., 2018)	*Public transport policy measures for improving elderly mobility*	Accessibility elderly to public transport
19 (Corran et al., 2018)	*Age, disability and everyday mobility in London: An analysis of the correlates of*	Investigating the ones not travelling among people with disabilities and elderly

Appendix Table A. (continued)

	'non-travel' in travel diary data	
20 (Williams et al., 2018)	*Neighborhood walkability and objectively measured active transportation among 10–13 year olds*	Walkability and active transport modes analysis for 10-13 years old kids
21 (Banister, 2011)	*The trilogy of distance, speed and time*	Sustainable transport, short distances and walkability
22 (Kraft et al., 2020)	*Travel diaries, GPS loggers and Smartphone applications in mapping the daily mobility patterns of students in an urban environment*	Mapping the daily mobility patterns of children
23 (Neven et al., 2018)	*Data Quality of Travel Behavior Studies: Factors Influencing the Reporting Rate of Self-Reported and GPS-Recorded Trips in Persons with Disabilities*	Mapping travel behavior of people with disabilities
24 (Imrie & Kumar, 1998)	*Focusing on Disability and Access in the Built Environment*	Accessibility of urban space for people with disabilities
25 (Church & Marston, 2003)	*Measuring Accessibility for People with a Disability*	Accessibility of people with disabilities
26 (Sawadsri, 2011)	*Accessibility and Disability in the Built Environment :negotiating the public realm in Thailand*	Accessibility of people with disabilities
27 (Clarke et al., 2008)	*Mobility Disability and the Urban Built Environment*	Accessibility of urban space for people with disabilities

B. Article Codes, Titles and Main Topics (For National Literature Review Content Analysis)

Appendix Table B.

Code of the Article	Title	Main Topic
1 (Hidayetoğlu & Müezzinoğlu, 2018)	*User-involved universal design experience in the space, product and service development process*	-To understand universal design, be able to think with universal design principles in design, offer solution proposals about city and space, increase the awareness of young designers, get to know, listen, understand or experience a product, service or physical environment together with people with disabilities.
2 (Belir, 2018)	*Independent movement experience with the other senses*	-Design students realize that they must search solutions addressing the senses of all human beings, make student become aware of the senses they do not use frequently even though those senses exist, enable spatial legibility, attract the attention of educators involved in design education.
3 (Meşhur & Çakmak, 2018)	*Universal design in urban public spaces: the case of Zafer Pedestrian Zone/Konya-Turkey*	-To evaluate the usage of urban spaces in Zafer Pedestrian Zone, located in Konya city center, within the scope of universal design principles.
4 (Yılmaz, 2018)	*Public Space and Accessibility*	-To put forth the standards and measures for public spaces by the analysis of universal design principles over the cases from different countries
5 (Çağlar, 2012)	*Engellilerin erişebilirlik hakkı ve Türkiye'de erişebilirlikleri*	-To identify the extent to which the legal, political, physical and social environment in Turkey allows persons with disabilities to participate in all realms of life equally with other individuals without being discriminated, evaluate state's responsibilities and make suggestions.

Appendix Table B. (continued)

6 (Fırat, 2009)	*Engelsiz bir kent tasarlamada yerel politikaların önemi*	-To emphasize the responsibilities of local governments to overcome the barriers against people with disabilities in urban life, accept accessibility as the main axis in designing a barrier-free city.
7 (Kaplan & Özkürt, 2004))	*Engelliler, Kamu mekanı ve engelsiz tasarım: Kamusal iç mekanlarda irdelenmesi için bir çerçeve*	-To generate a framework for public interiors by means of disabled-free design, creating a list of the elements of interiors in metro and LRT systems
8 (Öztürk, 2011)	*Türkiye'de engelli gerçeği*	-To understand disabled profile, disabled concept and disabled groups in Turkey, make interpretations on what kind of benefits that laws and regulations bring into practice in Turkey.
9 (Polat, 2016)	*A picturesque view to able-bodied persons in the city and the stigma of disability*	-To mention that there are social, psychological and structural barriers against accessibility of disabled individuals, increase awareness that disability stereotypes and the disability itself is not something you overcome, change or cure, mention that the society must be viewed as whole human beings, not human being with holes with disabilities.
10 (General Directorate of Services for Persons with Disabilities and Elderly People, 2011)	*An Analysis of The Labour Market Based on Disability*	-To conduct a 'needs analysis' of the labor force market, investigate perception, attitude and expectations of private sector enterprises in Turkey employing more than 50 people as well as other demand for labor force in the private sector and occupations with employment deficit.
11 (Evcil, 2012)	*Raising awareness about accessibility. Procedia-Social and Behavioral Sciences*	-To clarify the importance of raising awareness in design courses for better implementing accessibility for everyone
12 (Sabancı University, 2013)	*Towards a Barrier free Turkey: The Status Quo and Proposals*	-To create a holistic perspective in developing effective policies for persons with disabilities, make research on the sub-topics of Access

Appendix Table B. (continued)

		to Information and Services, Physical Accessibility, Education, Employment, Political Participation, Health and Rehabilitation Services, and Cost Analysis
13 (Republic of Turkey Ministry of Family and Social Policy, 2014)	*Development and Disability in Turkey: A Report of the Last Decade*.	-To put forth the facts with numerical data on people with disabilities in Turkey, 378ort how Turkish government contributed positively to the solutions of problems of people with disabilities in Turkey
14 (Şahin & Savaş, 2014)	*Disabilities and accessibility: Turkish sample. Academic Journal of Interdisciplinary Studies*	-To identify the extent to which the legal, political, physical and social environment in Turkey allows persons with disabilities to participate in all realms of life equally with other individuals without being discriminated, evaluate state's obligations and make suggestions.
15 (Kaplan, 2016)	*Erişebilirlik İzleme Ve Denetleme Sürecinin İrdelenmesi*	-To investigate the implementation process of Accessibility Monitoring and Auditing Regulation in Turkey
16 (Meral & Turnbull, 2016)	*Comparison of Turkish Disability Policy, the United Nations Convention on the Rights of Persons with Disabilities, and the core concepts of US disability policy*	-The purpose of this study was to determine the structure of Turkey's legal texts when compared with national and international legal agendas on disability policy.
17 (Akıncı & Kasalak, 2016)	*Are Travel Agencies Ready for Accessible Tourism in Turkey? The Tendencies and Expectations of Travel Agencies as Supply Side of Accessible Tourism in Turkey*	-To determine the existing attitudes, expectations, and tendencies of the travel agencies related to accessible tourism.
18 (Enginöz & Şavlı, 2016)	*Examination of accessibility for people with disabilities at metro stations*	-To find out the acceptability of informative, stimulating and guiding regulations at metro stations for all disabled groups, use the checklist 378ort he investigation of metro

Appendix Table B. (continued)

		station and its surrounding prepared regarding the accessibility and the architectural barrier-free design criteria.
19 (Özoğul & Baran, 2016)	*Accessible tourism: the golden key in the future for the specialized travel agencies*	-To contribute to the comprehension of the importance of Accessible Tourism 379ort he specialized travel agencies by proposing suggestions and key factors to improve the supply of accessible tourism offers.
20 (Tiyek et al., 2016)	*Engellilerin erişilebilirlik sorunu ve TSE standartları çerçevesinde bir araştırma*	-To analyze the compatibility of public transport systems in İstanbul to accessibility of people with disabilities, discuss the sufficiency of legal-administrative measures and arrangements 379ort he379 people with disabilities.
21 (Embarq, 2017)	*İzmir Tarih Sürdürülebilir Ulaşım Projesi*.	-To increase the accessibility of the areas by enabling effective connections with surrounding urban transport network, increase the priority on walking and cycling as sustainable transport modes.
22 (Ercoli, Ratti & Ergül 2015)	*A Multi-Method Analysis of the Accessibility of the Izmir Ferry System*	-To find out who the users are in trouble with accessibility, understand which design elements cause accessibility problems, and to which users.
23 (Kesik et al., 2014)	*Büyükşehirde yaşayan engelli yayalar için kaldirimlarin analiz edilmesi: Şişli örneği*	-To generate an ultimate map through a GIS software showing the compatibility of a wheelchair user to use the environment.
24 (Sözen, 2017)	*Engelli Vatandaşların kamu Hizmeti Almada Karşılaştıkları Sorunlar: Konya İli Örneği*	-To reveal the incompatibilities for disabled use of pedestrian environment and public transport, understand the point of view of policy makers regarding this issue
25 (Dikmen, 2011)	*Avrupa Kentsel Şartı Ulaşım ve Dolaşım İlkeleri Kapsamında Engellilerin Kentsel Alan ve Yapılara Erişilebilirliklerinin*	-To determine the difficulties of people with disabilities in terms of transport, mobility and accessibility to buildings, generate solution proposals specific to the case of Yozgat city by

Appendix Table B. (continued)

	Sorgulanması: Yozgat Örneği	means of increasing quality of life and their participation to urban life
26 (Kaplan & Ulvi, 2009)	*Engellilerin kaldırım ve yaya geçitlerinde karşılaştıkları kaza riskleri: Konya kent merkezleri örneklemi*	-To determine the accident risks of people with disabilities at sidewalks and pedestrian crossing
27 (Kesik & Aydınoğlu, 2014)	*Ulaşılabilirlik Kavramı ve Engelli Örneği*	-To investigate the concept of accessibility for people with disabilities, 380ort the need for a "national disabled information system" and a national disability action plan
28 (Nehir, 2009)	*İzmir'de otobüs duraklarının etkin kullanımları üzerine bir inceleme*	-To examine the reasons behind the congestion at bus stops.
29 (Aykal et al., 2018)	*Kent Mobilyalarının Yaşlı ve Engellilere Uygun Tasarımı: Elazığ Kenti Meydanları Üzerine Uygunluk Analizi*	-To examine the 380ort h furniture in terms of accessibility of people with disabilities and PRMs in the most crowded squares of the city.
30 (Seyyar, 2013)	*Bağcılar'da engelli poli`ti`kalari ve engellilere yöneli`k uygulamalar*	-To evaluate the social programs and projects applied by Bağcılar Municipality as the local government interventions to the issue.
31 (Kozan et al, 2018)	*Engelsiz Kent: Görme Engelli Bireylerin Kentlerde Yaşadıkları Problemler*	-To put forth the environmental difficulties experienced by visually impaired people, analysis made over five themes: public transport, park and sport areas, public spaces, public institutions, and hospitals.
32 (Ergenoğlu, 2013)	*Mimarlıkta Kapsayıcılık: Herkes İçin Tasarım*	-To explicitly reveal the principles of designing public transport, private car use, pedestrian cycle, ramps, 380ort h furniture and informative signs considering people with disabilities.
33 (Akbaş & Atabeyoğlu, 2015)	*Sırrı Paşa (Fidangör) Yaya Bölgesinin Engelli Kullanımı Açısından Ulaşılabilirliğinin Değerlendirilmesi*	-To evaluate Sırrı Paşa Street by means of the use of people with disabilities
34	*Kentsel Mekan Tasarımlarının Tekerlekli*	-To evaluate the compatibility of design interventions on Işıklar Street

Appendix Table B. (continued)

(Olgun et al., 2014)	*Sandalye Kullanıcıları İçin Yeterliliği: Antalya Işıklar Caddesi Örneği*	by comparing the current situation of pavements, crossways and ramps, parking areas, bus stops and stations, equipment elements and entrances of buildings with basic design principles.
35 (Kaplan, 2010)	*Kentiçi Toplu Taşımda Durak Erişilebilirliği*	-To examine the accessibility of bus stops
36 (Çakır, 2015)	*Engelsiz Şehir" Kavramı Açısından Malatya*	-To investigate urban facilities, infrastructure, public institutions, buildings and enterprises in Malatya city center from the perspective of "barrier-free city".
37 (Mülayim, 2019)	*Bedensel Özürlüler İçin Mimari Mekan Tasarımı*	-To present solution suggestions, analyzing the handicapped people's problems in terms of transport and urban space.
38 (Güngör, 2016)	*A Research on Accessibility of Urban Parks by Disabled Person: The Case Study of Birlik Park*	-To analyse the components of park entrances, walking trails and ramps, car parking, seating components, toilets, playgrounds, lighting elements, bins, fountains, telephone cabins, planting regarding accessibility of people with disabilities.
39 (Meşhur et al., 2014)	*The Integration of Elderly and People with disabilities into Urban and Social Life: A New Model for Konya/Turkey-YEBAM*	-To put forth the new model 381ort he integration of people with disabilities and PRMs into the urban and social life: in the sense of training, education, rehabilitation, working areas, housing, care-giving and recreation areas.
40 (Yardımcı & Bezmez, 2018)	*Disabled Istanbulites' everyday life experiences as 'urban citizens': accessibility and participation in decision-making*	-To contribute the redefinition of disability as a political issue in Turkey – where it has always been perceived as an incurable medical condition, mention the socio-spatial exclusion, physical 381ort h to urban spaces and significance of participation in decision-making processes.
41 (Evcil & Usal, 2014)	*Wheelchair users' accessibility problems in*	-To reveal the accessibility problems faced by wheelchair users corresponding to the Law No. 5378

Appendix Table B. (continued)

	public transportation-case of metro bus	and TSE 12576 standard (comparison of the items in the law and the standard, and the existing situation in Metrobus system in Istanbul)
42 (Bozdağ et al., 2017)	*Accessibility Analysis 382ort he Elderly in an Urban Area from Turkey*	-To examine the capability of elderly people, whose needs are typically neglected in the urban planning process, in accessing spatial services in Niğde, investigate the level of accessibility to spatial services by the elderly during the urban planning process, which are aimed at supporting active aging.
43 (Kaya, 2015)	*Düzce Kent Merkezi Yaya Yollarında Engelli Erişilebilirliği*	-To determine the obstacles preventing people with disabilities to reach urban space
44 (Yeğnidemir, 2013)	*Engelsiz havalimani" projesi ve havalimanı terminal binalarının engelliler açısından örneklerle incelenmesi*	-To examine the compatibility of those two airports from Turkey by means of accessibility of people with disabilities
45 (Bekiroğlu, 2002)	*Peyzaj Düzenlemelerinde Özürlülerin Kullanımları Ile İlgili Sorunların Saptanması*	-To determine the problems of people with disabilities in the use of landscape components in the environment
46 (Özdingiş, 2007))	*İstanbul Kent Parklarının Bedensel Özürlüler Açısından Değerlendirilmesine Yönelik Bir Araştırma*	-To examine urban parks in İstanbul and generate suggestions to improve the disabled accessibility
47 (Gümüş, 2008)	*The attitudes of responsible local agencies towards disability*	-To investigate the local governments' perspective to the issue of disability, generate conclusions about legislation, institutional structure and attitudes of local governments

C. The Ultimate Conclusive Analysis Inferred from Literature Review

Appendix Table C.

Main Theme	Conclusions Inferred
URBAN BUS	• Accessibility concerns for bus stops: Implementation of technical design measures
	• Ignorance of bus drivers towards people with disabilities -Lack of perception of disability as something to be socially included -Lack of mobility culture facilitating accessibility of PRMs
	• Necessity of information systems for buses/stops -Audio information system -Notes with braille alphabet
	• Rethinking the distribution of bus stops as a transport planning concern -Aiming to avoid traffic congestion and pedestrian intensity at stops
	• Bus Rapid Transit to be considered as a significant urban bus mode and to be designed according to the Law No. 5378 and TSE 12576 standard
COACH TRANSPORT	• Lack of accessibility to terminal and to vehicle as remarkable problems
	• Parents with children and/or baby to be a concern for intercity transport by coach
	• The need for assigning tour buses for tourism specific to people with disabilities
	• Need for communication and behavioral training to staff of coach transport system
RAIL SYSTEMS	• Accessibility problems at metro stations for people with disabilities

Appendix Table C. (continued)

	• Necessity of information systems → informative and guiding signboards and braille alphabet notes
MARITIME TRANSPORT	• Lack of seamless travel for ferries → getting on/off, arriving terminal, toilets etc.
	• Necessity of information systems → informative and guiding signboards and lack of audio information systems.
AVIATION TRANSPORT	• Airport accessibility as one of the most prominent part of the mode along with three dimensions: terminal access, accessibility within terminal and plane access.
INTEGRATED TRANSPORT	• "Design for all" concept regarding the intersection of pedestrian mobility and public transport accessibility. -Rethinking urban furniture, pedestrian crossings, ramps, disabled parking, signalization, bus stops, tactile pavements and movement between stops
PEDESTRIAN AREAS	• Significance of "independent mobility" concept for pedestrians. -A matter of human rights and the right to the city concepts.
	• Interrelation between participation of social life perception and accessibility of pedestrian areas. -The correlation between accessibility and social justice -Physical accessibility along with design standards, equality in use, social equality. -Disabled friendly urban parks by designing disabled friendly routes.
	• A need for implementation of standards in urban public spaces -Problems in parking areas, sidewalks, ramps, stairs and any other building elements and pedestrian zones—the design of landscape components. -Accessibility concerns regarding pavements on the street, garbage bins, lightening, planting, position of bus stops, seating places, sidewalks, tactile pavements and ramps
	• Decreasing car traffic → increasing pedestrian accessibility

Appendix Table C. (continued)

ACCESSIBILITY AND DISABILITY IN GENERAL	• A need of user involved participatory design process.
	• Responsibilities of the ministries and local governments on accessibility of public transport.
	• A comprehensive set of regulations related to disability in general in Turkey.
	• The fact that there are social, psychological and structural barriers against accessibility of people with disabilities".
	• Lack of participation of people with disabilities to social life; accessibility of public transport that brings the emergence of social life and independent mobility.
	• Awareness raising for people with disabilities, PRMs, able-bodied people and policy-makers as the major factor in accessibility
	• Encouraging training and research in this respect: training of experts, school education, focus on research projects.
	• Despite developing legal measures for disabled accessibility, still existence of drawback in legal terms.
	• A solution: the benefits of walking and cycling; and encouraging public transport and discouraging car dependency to bring more accessible urban environments
	• Unplanned urban development results in inaccessible urban spaces
	• Existence of socio-spatial exclusion and participation in decision-making processes in Turkey

D. Accessibility Focus Group Meetings Questions Set

Urban Transport

1. What kind of accessibility barriers do you face in your living environment?

- I have problems with getting on/off the bus at bus stops.
- I have problems at rail system stations.
- There are insufficient voice, visual, and warning systems at public transport stops/stations.
- Sidewalk quality is insufficient.
- I face barriers while walking (garbage bins, trees, posts, etc.)
- Sidewalk ramps are problematic
- Orientations signages are insufficient
- There is a lack of resting areas for people with disabilities
- Others: ……

2. What would be your score for accessibility measures in Ankara?

- 1 (Accessibility is not adequately taken into account)
- 2
- 3
- 4
- 5 (Accessibility is one of the top priorities)

Pedestrian Sidewalk and Crossing

3. Do you need to use road level because of accessibility barriers on the sidewalk?

- Yes
- No

4. What are the barriers you face on the sidewalk?

- Narrow sidewalk
- Height of sidewalk
- Cars parked on sidewalk/in front of the crossing
- Level differences and deformation of the surface of the sidewalk
- Barriers 8tree, post, garbage bins, etc.)
- Others: ……

5. Please mention the problems you have while crossing the street

- Disappear of pedestrian crossing stripes on the road
- Lack of signalization for pedestrians
- Problems with tactile pavement
- Short green duration of pedestrian traffic light
- Problems with ramps at the crossing
- Others: ……

6. What are the accessibility barriers you faced while using overpasses/underpasses?

- No overpass/underpass on the route that I mostly use
- Steep ramps to reach the entrance
- No elevator/automated platform or not working
- Deficiencies with tactile pavement around overpasses/underpasses
- Lack of signage stating disabled friendliness of overpass/underpass
- Others: ……

7. Does intensive use of cars and traffic affect your accessibility negatively in Ankara? (0=lowest / 5=highest)

- 0 (Not affecting)
- 1
- 2
- 3
- 4
- 5 (Absolutely affecting negatively)

Public transport

8. Which public transport modes do you use in Ankara?

- Municipal bus (including private municipal buses)
- *Dolmuş* (Minibus)
- Urban rail systems (Metro, Ankaray, Sub-urban)
- Cable car

- Others: ……

9. What are the barriers you face for accessibility of public transport stops/stations?
    - Problems with bus stops (accessibility of stop and getting on/off the bus)
    - Sharp/pointed corners of signboards of advertisement and information at stops
    - Deficiency in the number of covered bus stops
    - Lack of sitting bench at bus stops
    - Lack of reserved space at bus stops for wheelchair users
    - The difficulty of reliability/noticeability of the number of the stop and which lines it serves
    - Braille information at bus stops for visually impaired people
    - Lack of deficiency in voice warning and braille information at urban rail system stations.
    - Inconsiderate attitude or wrong practice of public transport

10. What barriers do you face for accessibility of open/green areas:/parks?
    - Lighting deficiency/lack of lighting
    - The narrowness of walking paths
    - Level differences and deformation of the surface of walking paths
    - The gradient of walking paths
    - Posts, garbage bins, and other urban furniture elements as barriers
    - Inappropriate height of desks/benches

- Branches of trees at eye-level on the walking route
- Problematic ramps entrance/exit
- I do not have any accessibility problem

Discussion questions

11. Which one is the most relevant statement that fits your accessibility perception? Why?

- Being able to reach where I want without seeking any help by public transport and on foot
- Being able to reach where I want by public transport and on foot, without rejecting the helpful behavior of other people
- Being able to freely reach where I want by using my car or when I have an accompanying person.
- Being able to reach any place in my living unit without having to go out from my own home or garden unless necessary

12. There are barriers against accessibility in the city. What could be the underlying reasoning for these problems?

13. How do intensive car use and traffic congestion affect your accessibility and mobility in the city? Is this one of the main reasons?

14. Accessibility is one of the primary human rights. Accessing the public space and being able to go anywhere in the city is a right. What kind of a solution is needed to ensure this right?

E. Focus Group Discussion Number and Date, Participant's Pseudonym, and Reason of Reduced Mobility

Appendix Table E.

Focus Group Discussion Number	Focus Group Discussion Date	Participant's pseudonym	Reason of Reduced Mobility
Focus Group Discussion-1	4.03.2021	F1-K1	Physical impairment
		F1-K2	Physical impairment
		F1-A	Visual impairment
		F1-C	Physical impairment
Focus Group Discussion-2	8.03.2021	F2-A	Physical impairment
		F2-N	Physical impairment
		F2-E	Physical impairment
Focus Group Discussion-3	12.03.2021	F3-Y	Physical impairment
		F3-K	Physical impairment
Focus Group Discussion-4	3.04.2021	F4-Y	Visual impairment
		F4-S	Visual impairment
Focus Group Discussion-5	4.04.2021	F5-E	Physical impairment
		F5-F	Physical impairment
Focus Group Discussion-6	6.04.2021	F6-E	Physical impairment
		F6-M	Physical impairment
Focus Group Discussion-7	9.04.2021	F7-V	Physical impairment
		F7-G	Visual impairment
		F7-S	Visual impairment
Focus Group Discussion-8	15.04.2021	F8-A	Physical impairment
		F8-V	Physical impairment
Focus Group Discussion-9	16.04.2021	F9-E1	Visual impairment
		F9-E2	Visual impairment
		F9-B	Physical impairment
Focus Group Discussion-10	17.04.2021	F10-G	Physical impairment
		F10-M	Physical impairment
Focus Group Discussion-11	20.04.2021	F11-B	Physical impairment
		F11-E	Physical impairment
		F11-A	Physical impairment
	5.05.2021	F12-A	Parent with baby stroller

Appendix Table E. (continued)

Focus Group Discussion-12		F12-C	Parent with baby stroller
		F12-B	Parent with baby stroller
		F12-S	Parent with twin baby stroller

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MS	METU Urban Policy Planning and Local Governments	2014
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PUBLICATIONS

1. Erçetin, C. (2014). "Planning and Management of Bikesharing for Sustainable Urban Transport: Konya, Kayseri and İstanbul Cases from Turkey", Lambert Academic Publishing, ISBN 978-3-659-64077-3, Saarbrücken-Germany.

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