Master Thesis M.Sc. International Cooperation in Urban Development

Pedestrian Road and Public Space, Where Does One Start and Where Does the Other One End? Case Study: Caferağa Neighborhood, Istanbul

Master's Thesis

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Confirmation of authorship

I certify and that this is my own work and that the materials have not been published before, or presented at any other module, or program. The materials contained in this thesis are my own work, not a “duplicate“from others’. Where the knowledge, ideas and words of others have been drawn upon, whether published or unpublished, due acknowledgements have been given. I understand that the normal consequence of cheating in any element of an examination or assessment, if proven, is that the thesis may be assessed as failed.

Darmstadt, 12 September, 2017

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Ege Özer

İstanbul, September 11, 2017

Abstract

This study emphasizes the significance of pedestrian road as public space in urban space and builds an analytical framework based on the studied case Caferağa and its pedestrian network.

Walkable city, a city having walkable streets is a sustainable concept that has multiple environmental, economic and health benefits. This concept puts pedestrian at the center of the urban scene and works towards making pedestrian road easy and worthwhile. This study aims to close research and information gap on pedestrian network of a Turkish neighborhood, and it does that on a street-level-busy one. This study tries to implement the utility of mixed methods that integrate qualitative and quantitative data through a transformative process on both field and research level.

Above all, this study asks if streets be used as public space in the absence of open spaces and parks or in the time where there's an excess amount of people in the neighborhood by conducting multiple spatial analysis and asking survey questions to people who use the neighborhood, whether they are local or not.

However this study does not aim to redefine the literature from top to bottom, but merely aims to fill an information void in Istanbul.

Glossary

TL Turkish Lira

WHO World Health Organization

WCCF World Cities Culture Forum

TÜİK Turkish Statistical Institute

İBB Istanbul Metropolitan Municipality

G.D.D.L.P.T.R General Directorate of Development of Legislation and Publication of Turkish Republic

APRPM2 Average Price of Residential Property per m2

NGO Non-Governmental Organization

Currency (per September 08, 2017): 1 TL equals to 0.243 €

Table of Contents

List of Figures

List of Tables

I Introduction

Cities with spaces where people cannot walk comfortably or cannot walk at all, are similar to the human bodies without nerves, muscles or skin. Because the vital organs of the cities are human beings, not cars that spread into the city like cancer cells in a human body.

This thesis is about the interaction between pedestrian roads as public space and pedestrians as users. This thesis time to time, word by word, paragraph to paragraph may feel personal. It may feel that way, because it is personal, as a citizen, as a pedestrian and lastly as an urban planner. Public space belongs to citizen, not someone specific, not to any individual, but to all. As Kunstler points out “The public realm is the connective tissue of our everyday world. It is made of those pieces of terrain left between the private holdings. It exists in the form of streets, highways, town squares, parks, and even parking lots... The public realm exists mainly outdoors because most buildings belong to private individuals or corporations... Some places, while technically private, function as quasi-public realm — for instance, college campuses, ballparks, restaurants, theaters nightclubs, and, yes, shopping malls, at least the corridors between the private shops. Their owners retain the right to regulate behavior within, particularly the terms of access, and so the distinction must be made that they are only nominally public. The true public realm, then...is that portion of our everyday world which belongs to everybody and to which everybody ought to have equal access most of the time.” (Kunstler, 1998, p.16) This thesis will open up this argument and analyze the core study by standing on this point. And since people, the citizens of a city and of its neighborhood deserve a livable city there needs to be peace between its users at the street level as Jacobs writes “city's streets are safe from barbarism and fear, the city is thereby tolerably safe from barbarism and fear. When people say that a city, or a part of it, is dangerous or is a jungle what they mean primarily is that they do not feel safe on the sidewalks.” (Jacobs, 1961, p.30) Therefore if urban planners or politicians aim a community which consists of a group of people working together to a common and a better future, there should be peace at the street and sidewalk level which both are basis of the city.

I.I Background

First half of 21st century is marked by massive increase of population in cities comparing to the first half of 20th century. World Health Organization reports that “the percentage of the world’s population living in urban areas is projected to increase from 54% in 2015 to 60% in 2030 and to 66% by 2050. This is particularly significant when considering that until the start of the 20th century only one in 10 people lived in urban areas. In absolute terms, more than 1 billion people were added to urban areas between 2000 and 2014.” (Who & UN Habitat, 2016) With this in mind it’s important to examine main arteries of the cities as known as streets and blood flowing through it which is people as pedestrians.

Streets have always been places where social, economic, entertainment and other types of facilities’ human traffic and its goods transported. In city centers, this traffic of humans and goods concentrates and this creates traffic jam, pollution in other word conflict, in every way, anything that puts pressure more than it can handle on the infrastructure thus creating unpleasant environment. Furthermore if people tend to use private cars to reach city center, or just pass through it, it creates a repulsive image of the city, and a bad use of the space, which results in stressful everyday life in it. For this reason there’s a need to open up this argument on pedestrian road and also the argument of “bad use of the space”, analyze, study and discuss it on a country’s with highest population growth rate of Europe one of the busiest city’s busiest neighborhood where these effects of excessive human movement, over population, wrong choice of transportation by municipality, and scarcity of public space can be easily observed on urban environment.

In order to focus on the study, G20 countries on Europe have been picked for comparison. G20 countries have the world's leading industrialized and emerging economies. The group accounts for 85 per cent of world GDP and two-thirds of its population. Between France, Germany, Italy, Russia, Turkey and United Kingdom, it can observed that between the years of 1955 and 2016, Türkiye not just has the highest population growth rate but also predicted to have the highest population growth rate between the years of 2017-2045 amongst European G20 countries. (Figure 1)

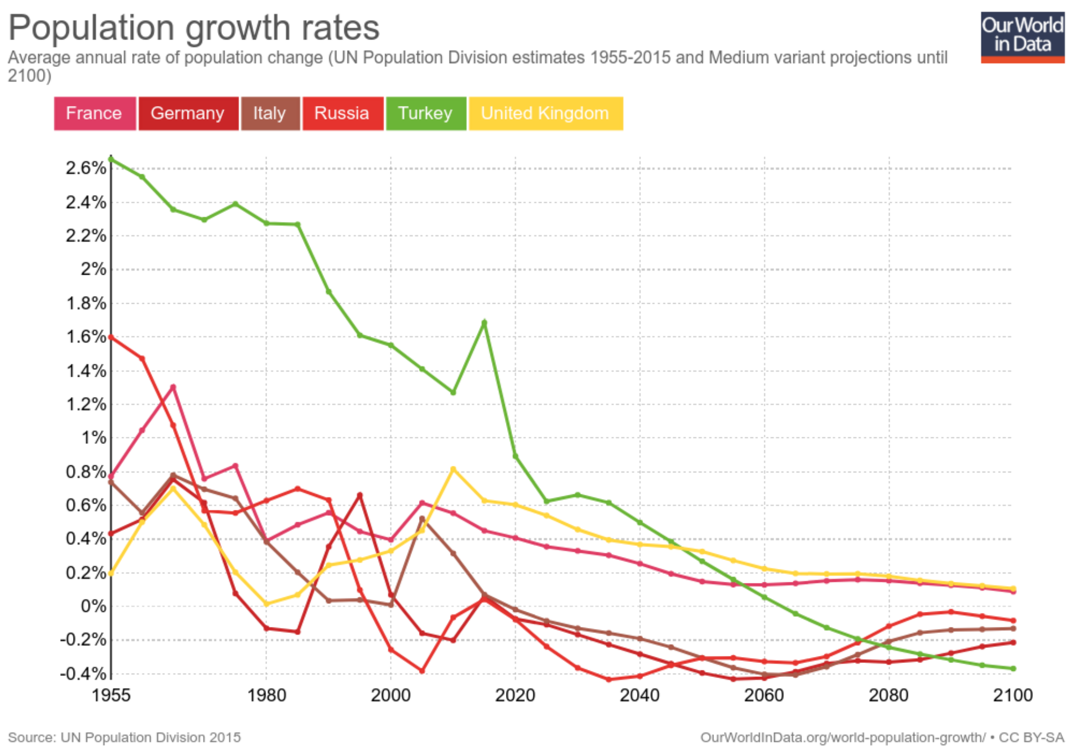


Figure 1 Population Growth Rates and Projections Among European G20 Countries (Visual by Roser & Ortiz-Ospina, 2017)

Istanbul, like many other developing world urban areas, has grown rapidly since World War II. In 1950, the urban area contained a population of less than 1,000,000. Research conducted by United Nations on world cities' population showed that Istanbul has the 15th highest population in among the world cities and highest population among European Cities. By 2030, it's predicted that Istanbul will go down to 20th highest between cities worldwide but remain the city with highest population among European Cities with its high annual growth rate of population and population density. (Table 1 and Table 2)

Rank	City, Country	Population in 2016 (thousands)	City, Country	Population in 2030 (thousands)
1	Tokyo, Japan	38 140	Tokyo, Japan	37 190
2	Delhi, India	26 454	Delhi, India	36 060
3	Shanghai, China	24 484	Shanghai, China	30 751
4	Mumbai (Bombay), India	21 357	Mumbai (Bombay), India	27 797
5	São Paulo, Brazil	21 297	Beijing, China	27 706
6	Beijing, China	21 240	Dhaka, Bangladesh	27 374
7	Ciudad de México (Mexico City), Mexico	21 157	Karachi, Pakistan	24 838
8	Kinki M.M.A. (Osaka), Japan	20 337	Al-Qahirah (Cairo), Egypt	24 502
9	Al-Qahirah (Cairo), Egypt	19 128	Lagos, Nigeria	24 239
10	New York-Newark, USA	18 604	Ciudad de México (Mexico City), Mexico	23 865
11	Dhaka, Bangladesh	18 237	São Paulo, Brazil	23 444
12	Karachi, Pakistan	17 121	Kinshasa, Democratic Republic of the Congo	19 996
13	Buenos Aires, Argentina	15 334	Kinki M.M.A. (Osaka), Japan	19 976
14	Kolkata (Calcutta), India	14 980	New York-Newark, USA	19 885
15	Istanbul, Turkey	14 365	Kolkata (Calcutta), India	19 092
16	Chongqing, China	13 744	Guangzhou, Guangdong, China	17 574
17	Lagos, Nigeria	13 661	Chongqing, China	17 380
18	Manila, Philippines	13 131	Buenos Aires, Argentina	16 956
19	Guangzhou, Guangdong, China	13 070	Manila, Philippines	16 756
20	Rio de Janeiro, Brazil	12 981	Istanbul, Turkey	16 694

Table 1 World Megacities Population Ranking (United Nations, 2016)

Annual growth rate of Istanbul's population (‰)

2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
9.8	17	26	27.4	16.8	21.8	15.2	19.3	10

Population density of Istanbul

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
2 420	2 444	2 486	2 551	2 622	2 666	2725	2767	2821	2 849

Table 2 Annual growth rate and Population Density of Istanbul (TÜİK, 2017)

Furthermore the problem within the Istanbul comparing to other world cities, public green spaces occupies only 2,2% of the city's area (Table 3). The only city that Istanbul could pass is Dubai which is known for its non-green areas and desert climate. The green area per person in Istanbul was 6,4 m^2 per person in 2012 according to İBB (Figure 2). In 2017, the green area per person in Istanbul rose up to 8.41 m^2 according to İBB, but according to Republic Of Turkey Ministry Of Environment And Urbanization it's 7,57 m^2, which are bot lower than WHO's defined minimum green area per person needed.[1] But according to The Foresters'

[1] The World Health Organization (WHO) recommends that cities provide 9m2 of undeveloped (unpaved) open space for every inhabitant.

Association of Turkey[2] the green area per person in Istanbul is 1 m^2 per person. The reason that there's a serious difference is the definition problem, İBB defines Lawn areas and flowering around the road as green zones while Foresters' Association of Turkey specifies these areas as passive green areas which should be exempt when calculating green areas per person in the city.

Citizens of Istanbul favors on Foresters' Association of Turkey's side, in a survey conducted by European Commission in 2015 (Figure 4) there were six cities where less than half the respondents expressed satisfaction with the green areas in their city: Greater Athina and Irakleio in Greece, Valletta in Malta and Palermo and Napoli in Italy; the same was also true for Istanbul in Turkey.(European Comission, 2016) Likewise, satellite pictures taken from the years of 1977, 1988, 1999 and 2009 shows the gravity of the situation, green areas, both active and passive green areas have been decreasing throughout the years (Figure 3). Inadequate sources in Istanbul have pushed people into looking other areas with potential, like open public spaces, or pedestrian roads to spend their time and socialize on.

City	Figure	Date	Source
Moscow	54.00%	2013	Department of natural resources
Singapore	47.00%	2011	National Parks Board
Sydney	46.00%	2010	New South Wales Department of Planning
Vienna	45.50%	2014	Vienna Annual Statistics 2014
Shenzhen	45.00%	2013	Shenzhen Statistical Yearbook 2014
Hong Kong	40.00%	2015	Agriculture, Fisheries and Conservation Department
Stockholm	40.00%	2014	Stockholm Stad
Madrid	35.00%	2014	Archivo del Ã�rea de Gobierno de Las Artes, Deportes y Turismo. Ayuntamiento de Madrid
Rome	34.80%	2014	Roma Capitale
London	33.00%	2013	Greenspace Information for Greater London CIC
Rio de Janeiro	29.00%	2013	SIG Florestas do RIO
New York	27.00%	2010	New York City Department of City Planning Land Use
Seoul	26.60%	2015	Seoul Metropolitan Government
Johannesburg	24.00%	2002	State of the Environment Report, City of Johannesburg

[2] The Foresters' Association of Turkey (TOD) is a Civil Society Organization which was established on December 26th, 1924 by Forest Engineers.

			2009
Brussels	18.80%	2015	IBGE
Warsaw	17.00%	2015	Head Office of Geodesy and Cartography
Edinburgh	16.00%	2009	Edinburgh City Council
Austin	15.00%	2015	City of Austin
Montréal	14.80%	2013	Ville de Montreal, Direction des grands parcs et du verdissement
Berlin	14.40%	2011	Berlin.de
San Francisco	13.70%	2012	San Francisco Recreation and Parks Department Community Report/US Census Bureau
Amsterdam	13.00%	2015	Statistics Netherlands/TNO
Toronto	12.70%	2012	Toronto Parks, Forestry and Recreation Park Plan 2012-2017
Paris	9.50%	2013	IAU
Melbourne	9.00%	2015	Metropolitan Planning Authority
Buenos Aires	8.90%	2013	CABA
Tokyo	7.50%	2015	Bureau of Urban Development - Tokyo Metropolitan Government - "Survey of City Planning Park and Green Space in Tokyo 2015"
Los Angeles	6.70%	2012	Greater Los Angeles County Open Space for Habitat and Recreation Plan
Bogota	4.40%	2013	Alcaldia Mayor de BogotÃ¡, Departamento Administrativo del Espacio PÃºblico
Taipei	3.60%	2014	Parks and Street Lights Office,Taipei City
Shanghai	2.80%	2014	Shanghai Theatre Academy
Mumbai	2.50%	2011	Tata Institute of Social Sciences
Istanbul	2.20%	2015	Istanbul Metropolitan Municipality
Dubai	2.00%	2015	Dubai Culture and Arts Authority

Table 3 % of public green space (parks and gardens) in world cities

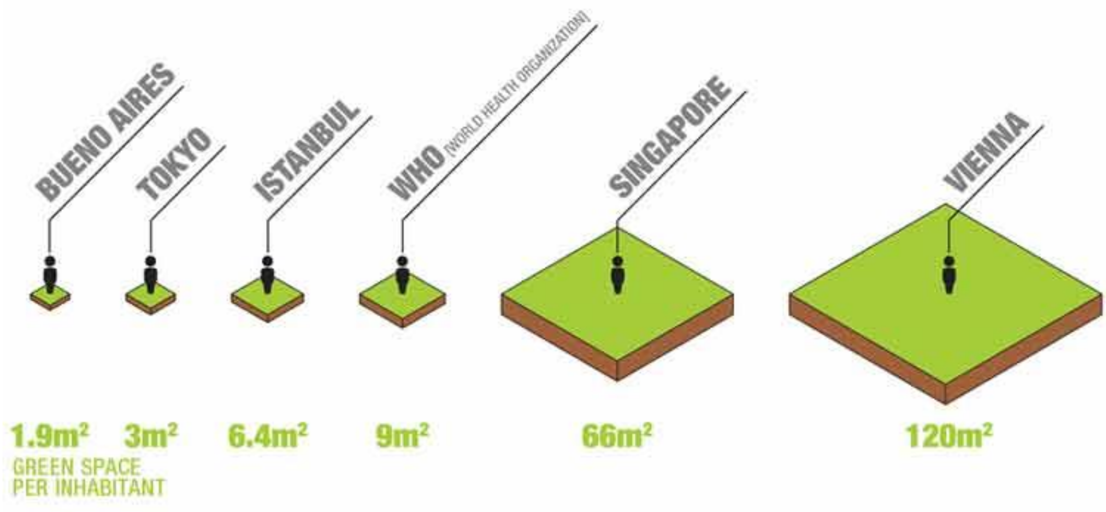
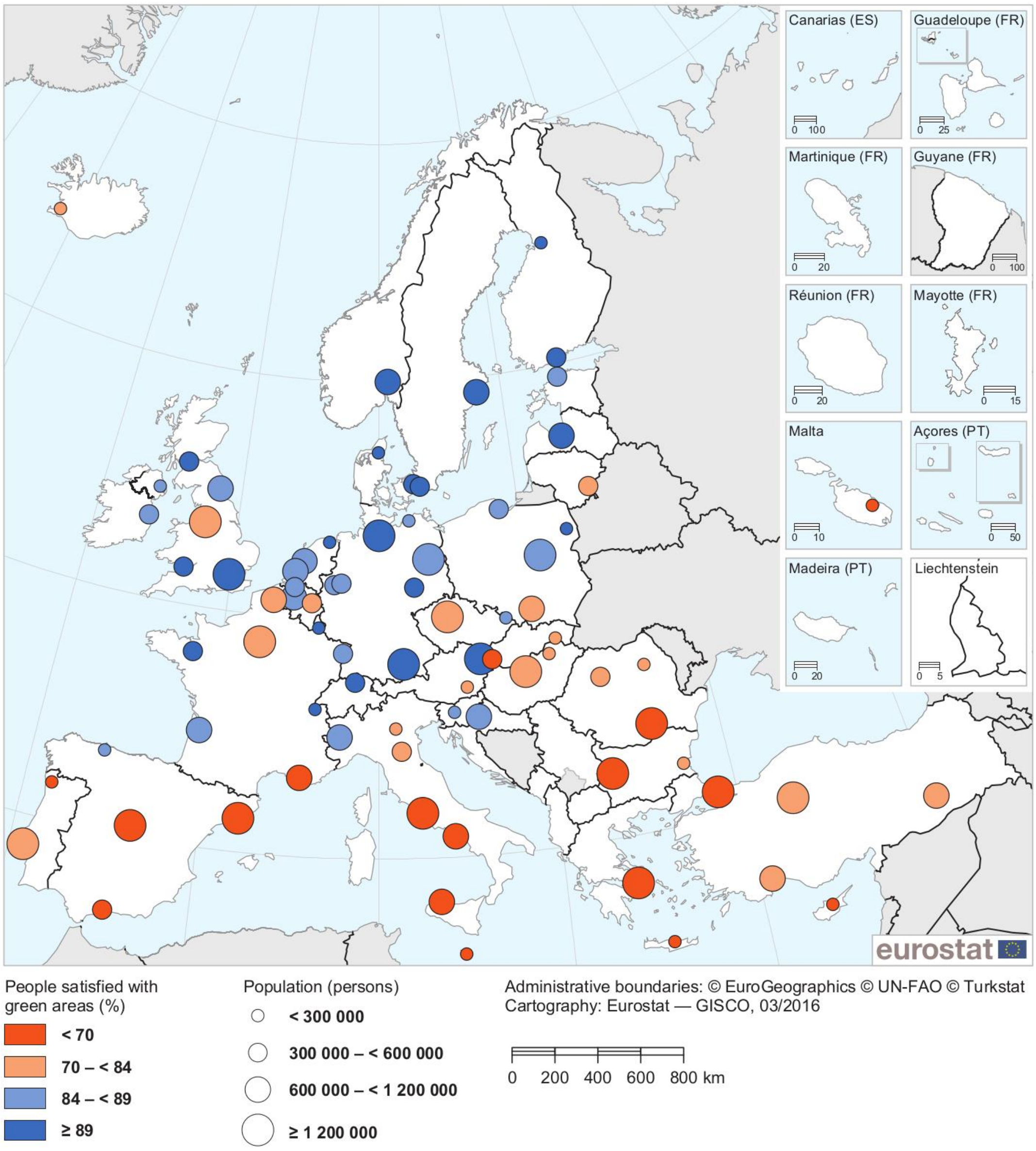


Figure 2 Green Spaces per Person in Cities (Bagherian, 2012)

Figure 3 Satellite pictures of Istanbul Throughout the Years (Politikyol, 2009)



([1]) Athina (Greece), Paris (France), Lisboa (Portugal), London, Manchester and Tyneside conurbation (all United Kingdom): greater city. Population data generally refer to 1 January 2014. Portugal: 2015. Denmark, Estonia, Latvia, Lithuania, Hungary, the Netherlands, Austria, Poland and Norway: 2013. France, Slovenia and Finland: 2012. Greece and Sweden: 2011. Cyprus, Luxembourg and Malta: 2009. Turkey: 2004. Bulgaria, Ireland, Lithuania, Malta, Poland, Portugal, the United Kingdom and Turkey: estimates.

Figure 4 Proportion of people who are satisfied with the green areas in their city, 2015 (%) (European Comission, 2016)

Turning back to population topic, from figure 5 and figure 7, it can be observed that Istanbul's population focused mostly on sea side and Bosphorus. The Bosphorus is a narrow, natural strait and an internationally significant waterway located in northwestern Turkey. It forms part of the continental boundary between Europe and Asia, and separates Asian Turkey from European Turkey. Most of the shores of the strait are heavily settled, but historically it can be observed that most of population is settled on south side of Istanbul, along with the sea coast (Figure 6).

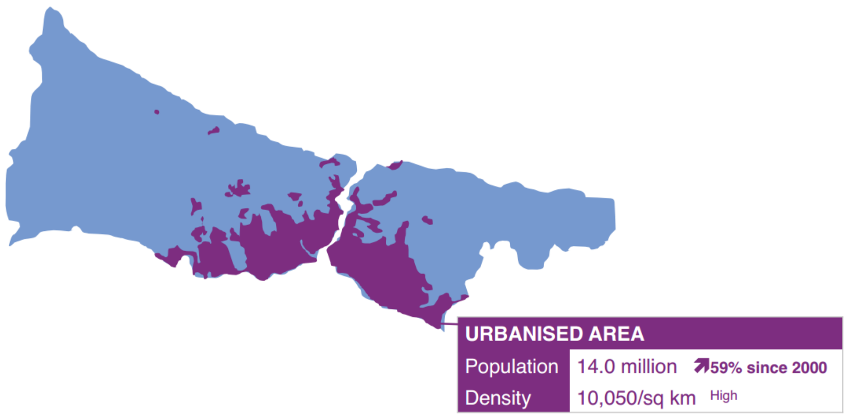


Figure 5 Population, economy and density in Istanbul's city limits and functional urban area (Clark & Moonen, 2015)

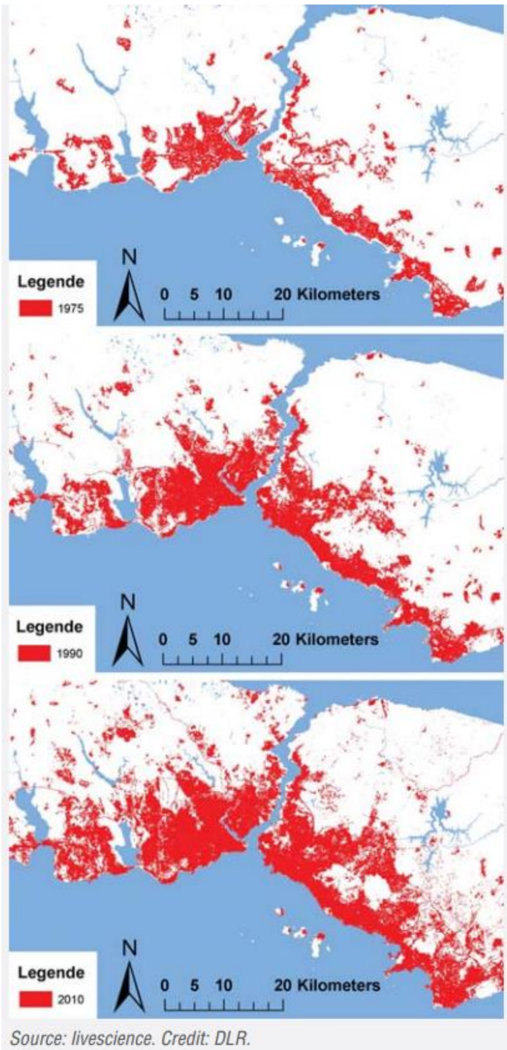


Figure 6 Istanbul's growth, 1975-2010 (Clark & Moonen, 2015)

Figure 7 Location of population focus (By Author)

The reason that Kadıköy is chosen as the focus of this study that this district can be observed as Anatolian center of population focus of Istanbul. (Figure 8) With its approximately one million population, Kadıköy District is ranked first among the others in Istanbul with respect to the population growth and the urban characteristics. (Municipality of Kadıköy, 2017) The district covers 34 km square area of settlement. As Kadıköy district is on the shore of Marmara Sea, it has the typical characteristics of coastal cities. Altıyol is said to be the heart of the city center. Today's Osmanağa Mosque and Cape Moda[3] are comprised the nucleus of the first settlement.

[3] Today's Caferağa Neighborhood

Figure 8 Kadıköy's location (By Author)

People’s walking activity within Istanbul can be seen cluttered at two main locations on visualized data prepared by “Human” [4], and these two main different locations are Beyoğlu/Beşiktaş on the West and Kadıköy’s center, Caferağa on the East. Beyoğlu and Beşiktaş district is center on the European side and Kadıköy is center on the Asian side. (Figure 9)

The first reason that this study chose Kadıköy over Beyoğlu and Beşiktaş is the personal connection to the area and having living experience for 27 years. The second reason is since Caferağa neighborhood is a half-island unlike Beyoğlu and Beşiktaş, this area cannot be used as stepping stone by cars and other motorized vehicles. In other words, while cars may use Beyoğlu and Beşiktaş to reach to another point, Caferağa may not be used that way because of its location -coast line being natural barrier to human expansion- therefore has a potential to have high density of public space, with its already present sea-coast public parks.

[4] Human is an activity tracker application for phones.

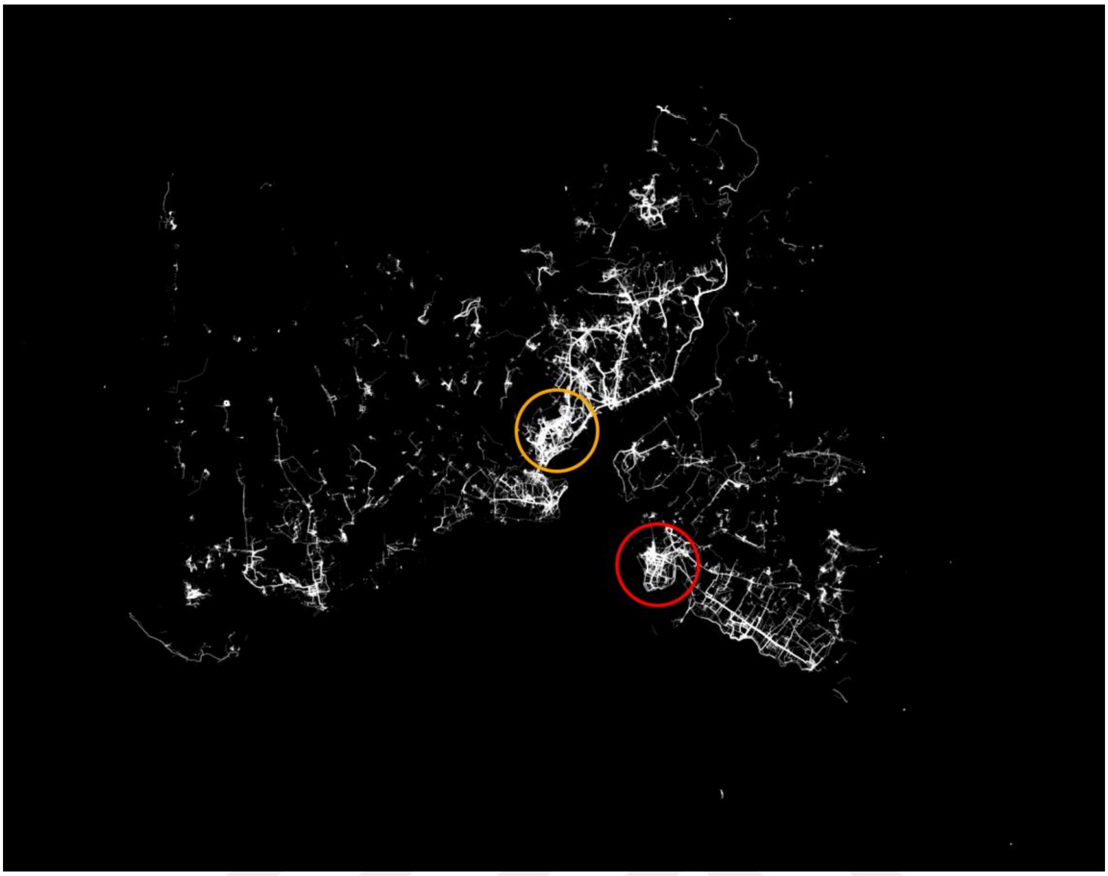


Figure 9 Visualization of Walking Activity Within Istanbul (Human, 2017)

I.II Research Questions

The interest that started this study and topic with it, is started with the core research question of "what is public space, how can a space define as one and how can one stay public?"
This core research question can be opened up to smaller questions, the first part of the questions focuses on definition;

- How to define public space?
- What are the objects and/or elements make a space, "public"?
- Which elements disturb public spaces' "public" status?
- How to keep public space "public"?
- What is privatization?
- Can public space stay public after "some" parts privatized?
- Is pedestrian network part of the public space?
- How does public space and pedestrian roads affect citizens' daily life?

- What is the position of pedestrian road in an urban environment?
- What are the elements that make a pedestrian road?

The second part of the questions focuses on the analysis of the Caferağa neighborhood;

- What are the things in this neighborhood that disturb public space's "public" status?
- What are the elements that people expecting from public space in this neighborhood?
- How the public space, and pedestrian network plan evolved through the years in this neighborhood?
- What are the global and local current planning practices related to public space?
- What are the current planning practices that "break" public space?

The third and the final part of the questions is about improvement of the current public space of the Caferağa neighborhood;

- What are the improvements in this neighborhood that can make Public Space more usable and/or enjoyable?
- Why does people need more public space in their lives?

I.III Purpose and Expected Results

This thesis aims to provide analysis to planning, designing, operating and maintaining of and also pointing out the problems in pedestrian network and infrastructure through the case study of one the busiest city's busiest neighborhood.

Streets of a city should be livable, enjoyable places where people are proud, happy to walk, they should provide a significant amount of improvement in citizens' quality of life, so that people of that city can be productive as possible without worrying about distractive things like traffic jam, unproductive discussions which all results in stress and bad use of limited time. Coming from that, this thesis will point out the problems and glitches in the current situation in the world by focusing on a populated city's populated neighborhood in question.

Furthermore, the purpose of this thesis is to study the role of walkable streets in a sustainable tomorrow's city in the designated study area. Accordingly, a spatial research of the neighborhood is conducted to substantiate this study. In the next chapters this thesis will demonstrate that walking can and will lead to sustainable urban development from physical, social, environmental, economic, cultural and political aspects in the designated study area. Not to mention, pedestrian areas or roads, which are the main context of walking, act as centric points of development in cities and have a massive effect on modifying and stimulating of their urban spaces.

The expected results of this study will be;

- Establish a definition relating pedestrian network, pedestrian road, public space in today’s world cities, and Turkish cities in comparison.
- Build an analytical framework on public space, based on the research conducted through this study.
- Compare the the examples from the world with the neighborhood of Caferağa, in order to identify problematic pieces in planning on the street level.
- Analyze the public space locations of the case study and locate potential improvements on local level.
- Define a comprehensive approach to public spaces of Caferağa neighborhood, and offer alternative suggestions for developments in the future.
- Create a basis of a study focused on pedestrian network as public space that can be developed furthermore.

II Definition of the Problem

Cities historically has been associated with important social, ecologic and economic transformations, which have brought longer life expectancy, lower birth-rate and population ageing, pollution, high rates of crime, cost of living.

As has been mentioned previously, in a fast growing world, cities are hosting significant percentage of world’s population. Predictions show that this percentage will go even higher in the years following. In a world where people squashed and piled up in small spaces, different forms of activity and means of transport have to be used in same space by high amount of users which results in creating the problem. The Problem which is being use of infrastructure by high numbers of people, which is not designed for, at the first point. This leads to conflicts of interests between different parties, like between people who live in the same neighborhood and people who lives in another part of city but comes to the same neighborhood to enjoy the air, sea, different commodities where she or he cannot find in another part of town. But again this thesis won’t be about the clash between people it will be about people versus non-alive objects that violently occupies the public space/ pedestrian road, resulting in clash between citizens. In brief this thesis aims to remove the problem altogether, rather than finding a solution to it through the analysis of community’s needs and

III Methodology

This thesis draws its base information from multiple sources, including studies made before, on-field spatial analysis, surveys with people, both face to face and through the internet.

Information included in this thesis describes the pedestrian movement, car movement and obstacles on the pedestrian road. Figure 10 shows conceptual diagram of the variables included in the analysis to understand the relationship between pedestrian movement and obstacles on the pedestrian road. This figure shows different levels of the problem solving, the name of the problem, different varieties, multiple parties as the source of the problem and examples of objects as the problematic subjects.

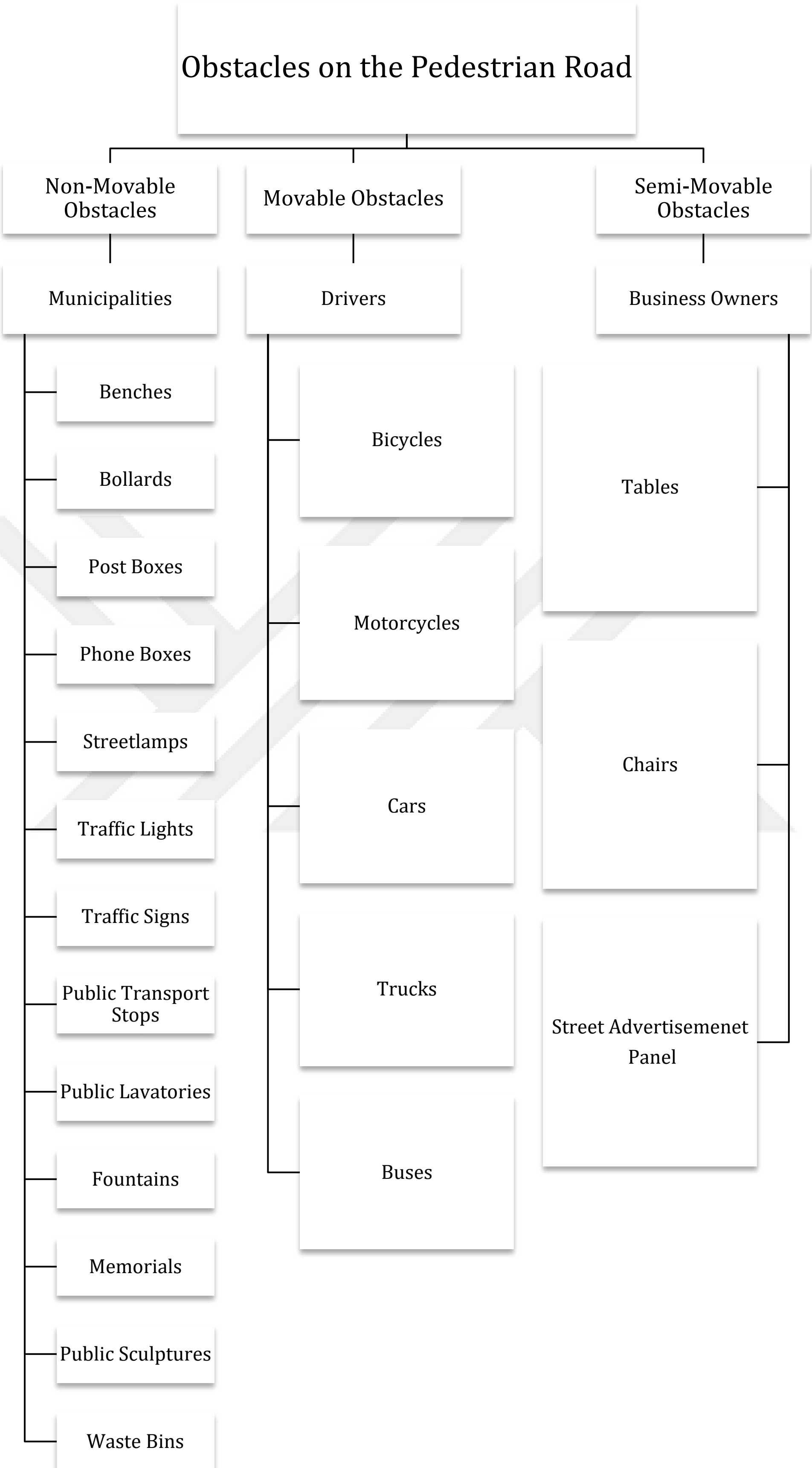


Figure 10. Obstacles on the Pedestrian Road (By Author)

III.I Data Sources

The main concept of this study is walkable streets as public space, not as a main source but as a support to the city in absent of adequate green and open public spaces. Therefore "pedestrians" and "pedestrian roads" will be the main focus points along with other subjects relating to these two keywords.

Turning to urban environment, pedestrians in cities are likely to be found on points of interests like major business centers, education establishments, retail areas, recreational facilities, cultural attractions, transportation stops, etc. However, it is not a short process to define walking routes and habits, since it does change with time as the city grows and urban area expands.

Evaluating the demand for walking needs data sources such as; accident data, surveys with locals, data gathered by phone applications and mapping programs, analyses conducted by municipality and government. SWOT analysis for data gathering methods is needed to analyze pedestrian and car movement relating to it, define problems and find solutions to these problems if it is possible in the end.

Source	Strengths	Weaknesses	Opportunities	Threats
Accident Data	• Reliable data, where available • Simple to use • Available • No cost	• May not include accidents that people have by themselves. • Have low to non reporting rate for minor accidents. • May have no data on lightly used areas. • Might not open to the public.	• With reliable data, it's easy to analyze heavily used areas.	• Since lightly used areas may have little to non-data, there will be gaps on the analysis, resulting in incomplete analysis.
Surveys With Locals	• Can be extensive and cover all the subjects relating neighborhood and walking. • Minimal Cost	• People may not tell the whole truth in face to face surveys. • It needs to be made on big	• Can cover all the main subjects.	• Can be misleading since people may not be honest or may not want

		scale in order to have reliable data.		to answer all questions.
Data Gathered by Phone Applications and Mapping Programs	• Extensive • Precise • Can be open source data, therefore with non or minimal cost.	• Price of the data may be high. • It may be involuntarily, which creates an ethical dilemma.	• Raw data can be used for most of the topics relating to analysis, like time spent on each location and specific time of the day.	• Data gathered may come from specific user groups, like age and may ignore other users.
Analyses Conducted by Municipality and Government	• Public research, therefore no-cost. • May have already gathered of the data needed.	• Can be outdated. • Can be one sided and biased.	• May be used for comparison with current data gathered and make a prediction for future of the area.	• Can be misguiding and waste of time because its political one sidedness.

Table 4 SWOT Analysis for data gathering (By Author)

III.II Methods of Analysis

As can be expected from the table 5, on the previous chapter no single method is sufficient by its own and has weak and strong points at the same time, thus combining data from multiple sources and comparing them would give the best result for this study and studies that will work on the same subject after it. Therefore for the sake of this study, surveys with both locals and non-locals conducted, map data gathered by both satellites and phones are used, analyses conducted by both municipality and government are acquired. In other words both qualitative and quantitative methods used. Even though accident data was at hand, because of it being too general both in area and in subjects, this data couldn't be used for this study.

IV Literature

Pedestrians are the cornerstones of a city. They are what make a city alive and breath, by simply being on the street, walking, interacting with other people and their surroundings. A person who's in a vehicle cannot interact with other people as she or he moves with speed and beyond human perception as she or he is not able to observe and join to its surroundings therefore fail to become a part of the city.

In this chapter, definition of basic concepts will be questioned, analyzed and defined in order to understand the thesis's subject and its aim better.

IV.I Definition of the "Pedestrian"

"Trafic Regulations for Roads" written by "General Directorate of Development of Legislation and Publication of Turkish Republic" defines Pedestrian as "a person who is in motion or stationary situation and is not inside a vehicle, on the road" (G.D.D.L.P.T.R., 1983). The act of walking is the primary mode of transportation since human beings evolved into Homo-sapiens and even before that. Everyone, will move, is moving or have moved in a walking speed in their lifetime. Therefore walking, or moving with a support is the basic form of changing space.

Turning back to definition, it's essential to define and classify different types of pedestrians as shown in Table 1. To put it more simply, there is a need to adjust infrastructure such as pedestrian road to the different needs of different users. In order to do that, they should be defined one by one.

Types of Pedestrian	**Subgroups**
On Foot	Young Pedestrian Adult Pedestrian Elder Pedestrian Visually Impaired Pedestrian Pedestrian with Pet Pedestrian with Walking Infant Pedestrian with a Cane

	Pedestrian with Walking Difficulties Pedestrian with a Walking Frame
On Small Wheels	With Roller Skates With Skateboard With Scooter
Impaired / Compulsory Wheels	With Manual Wheelchair With Electric Wheelchair With Baby Stroller Power-Operated Vehicle/Scooter

Table 5. Types of Pedestrian by author

On Foot:

- **Child Pedestrian:** This user group is the most unpredictable and also the smallest. They split into two groups. First one is “children between the age of three and six. They do not like to sit for long periods, wants to move often and may need assistance moving.

  Second group is “children between the age of seven and eleven” Children in the 7-11 age group actively begin to acquire basic reading, writing skills and working in numbers within the educational environment. Unlike the first group they can differentiate between traffic lights and signs.

  Both of these groups should be accompanied until appropriate age in urban environment.
- **Young Pedestrian:** This group consists of young people between the age of twelve and seventeen. They don’t need any outside help to walk or or move between point a and point b in city. They could be pensive, careless and non-observant because of the physiological, social and emotional change they are having in their age group.
- **Adult Pedestrian:** Pedestrians that are mature to understand traffic rules fully but still needs to learn what each traffic signs mean and to be careful of their surroundings.
- **Elder Pedestrian:** Pedestrians that are mature to understand traffic rules fully but may start having problem comprehending what is happening on their surroundings and may need a walking aid.
- **Visually Impaired Pedestrian:** Pedestrians who are visually impaired or blind can travel and cross streets using a long, white cane to identify and avoid obstacles, using a human guide, having a human companion, using special optical or electronic aids. Detectable sounds and physical traffic warnings must be put in order to help them move.

- **Pedestrian with Pets:** Pedestrians with pets need adequate space to walk on the pedestrian roads in the city.
- **Pedestrian with Walking Infant:** Even though walking infant could go places by their own, adult supervisor is required to present.
- **Pedestrian with a Cane:** Pedestrian with walking disability that needs assistance of a cane, flat surface on the pedestrian road is required.
- **Pedestrian with Walking Difficulties:** Pedestrian with walking disability, flat surface on the pedestrian road is required.
- **Pedestrian with a Walking Frame:** Pedestrian with walking disability that needs assistance of a walking frame flat surface on the pedestrian road and adequate width to walk is required.

On Small Wheels:

- **With Roller Skates:** Pedestrian that may cause problems to other pedestrians, should not be present narrow or a busy pedestrian road.
- **With Skateboard:** Pedestrian that may cause problems to other pedestrians but needs a wider space to move than roller skater, should not be present narrow or a busy pedestrian road.
- **With Scooter:** Pedestrian that may cause problems to other pedestrians, much slowe than roller skate and skateboard, but again, should not be present narrow or a busy pedestrian road.

Impaired / Compulsory Wheels:

- **With Manual Wheelchair:** People with walking disability that needs an assistance of a manual vehicle that needs adequate space and angle on pedestrian road.
- **With Electric Wheelchair:** People with walking disability that needs an assistance of a electrical vehicle that needs adequate space and angle on pedestrian road.
- **With Baby Stroller:** People with and infant that may not walk by its own but with a help of a stroller that needs adequate space and angle on pedestrian road.
- **Power-Operated Vehicle/Scooter:** People with walking disability that needs an assistance of a electrical vehicle that needs adequate space and angle on pedestrian road.

Before the industrial evolution, act of “walking” was considered primary means of transport in Europe and in the rest of the world with it. 19th century changed means of transport of humans and goods and through that city’s streets changed, motorized vehicles became dominant and commuting on foot pushed to second row.

European Commission Directorate General for Mobility and Transport reports that “Survey data from a selection of seven European countries show that 12-30% of all trips is made by walking (as main transport mode), the highest figure being for Great Britain. For short trips under 5 km, the share of walking is higher, with a maximum of 45% in Great Britain. The average length of walking trips varies from just under 1 km (Great Britain) to 2.8 km (Finland). It should be noted, however, that the extent of coverage of short trips may vary from country to country in the national travel surveys. This will affect the comparability of average trip length and the share of walking. In Great Britain, all trip lengths are included, whereas in Denmark trips shorter than 300 metres are excluded from the survey and all trips between 300 and 1500 metres are recorded to be 1 km. Walking is a way of travelling used mainly for two purposes: short trips to specific destinations such as shops when there is probably not too much to carry, and leisure trips where the walking in itself is the main purpose. About 15-30% of all person kilometres walked (on an average day) is for shopping purposes. Home-leisure trips cover about 30-55% of the person kilometres, with Switzerland at the top and Finland at the bottom."(European Commission, 2007)

To compare European cities in general to Istanbul, breaking down numbers from Ilıcalı's "Istanbul Traffic- Transportation Survey" (Table 7), everyday 68% of the people use public transport, 20,5 % of the people use their personal vehicles, 4% of the people use taxis, while 7% of the people travel on foot to reach where they need to in Istanbul.

Transportation Method	Percentage	**Transportation Method**	Percentage
Bus	21%	**Private Car (More than 2 person)**	4%
Minibus	12%	**Taxi**	4%
Metrobüs	12%	**Sea Transportation**	3%
Private Car (Alone)	10%	**Marmaray**	3%
Railway System	9%	**I don't commute**	1%
On Foot	7%	**Dolmuş**	1%
With Service	7%	**Motorcycle**	1%
Private Car (2 person)	5%	**Bicycle**	0,5%

Table 6. Daily Commute Methods in Istanbul (Data Source: Ilıcalı, 2014)

This comparison shows Istanbul with 7% isn't even close to lowest percentage of travel on foot in a European city with 12% let alone 30%. To analyze this difference a little further there's a need to discuss the definition of "Pedestrian Road", what and how defines it, as it is.

IV.II Definition of the "Pedestrian Road"

Pedestrian road is a type of way that is intended for use of pedestrians and pedestrians only. Even though cars may use it to access to parking spots it is never intended to be used by vehicles except emergency vehicles in emergency situations. In a perfect city where cities are first and foremost for people, pedestrian roads designed for and used by people, not for cars or for trash bins or for any of the non-alive objects that blocks the passage partially or fully in that matter.

Peñalosa says (as cited by Efroymson, Thanha, Ha) "A better city is a more humane one, one friendly to children, the handicapped and old people, to societyʿs most vulnerable members. ... Contrary to stereotypes, it is not its skyline that lends character to a city. Rather it is its human spaces, its pedestrian promenades, parks, plazas, libraries, and public transport. ... Magnificent networks of tree lined roads exclusively for pedestrians and cyclists could change the nature of cities and city living, making them much friendlier to people. ... For the cost of an airport, a developing country city could build a formidable pedestrian road network hundreds of miles long lined with giant trees that would not only radically improve quality of life and demonstrate respect for its citizens, but give it a unique character and impress foreign visitors even more than a sophisticated airport. It only requires different thinking, different values and priorities." (Peñalosa, 2004 cited Efroymson, Thanha, & Ha, 2009 p.101)

To summarize, roads belong to all whatever their background, their race, sexual orientation, gender, their language and whether they have disabilities or not. It needs to be shared by all in a world where "all" is pedestrian and/or part of a pedestrian road at some point just as democracy, where everyone has a voice and equal to one another.

IV.III Definition of the "Pedestrian Network"

Pedestrian network can be defined as "combination of pathways that pedestrians uses" and is generally composed of pedestrian path centerlines and their connections. The Pedestrian Network consists of sidewalks, intersections, trails and greenways that should be improved or developed in order to create a system of safe and convenient facilities all over the City for pedestrians.

In Pedestrian Design Guide written by Office of Transportation of Portland, it lines up the principles for a better pedestrian network by writing;

"1. The pedestrian environment should be safe. Sidewalks, pathways and crossings should be designed and built to be free of hazards and to minimize conflicts with external factors such as noise, vehicular traffic and protruding architectural elements.

2. The pedestrian network should be accessible to all. Sidewalks, pathways and crosswalks should ensure the mobility of all users by accommodating the needs of people regardless of age or ability.

3. The pedestrian network should connect to places people want to go. The pedestrian network should provide a continuous direct routes and convenient connections between destinations, including homes, schools, shopping areas, public services, recreational opportunities and transit.

4. The pedestrian environment should be easy to use. Sidewalks, pathways and crossings should be designed so people can easily find a direct route to a destination and delays are minimized.

5. The pedestrian environment should provide good places. Good design should enhance the look and feel of the pedestrian environment. The pedestrian environment includes open spaces such as plazas, courtyards, and squares, as well as the building facades that give shape to the space of the street. Amenities such as street furniture, banners, art, plantings and special paving, along with historical elements and cultural references, should promote a sense of place.

6. The pedestrian environment should be used for many things. The pedestrian environment should be a place where public activities are encouraged. Commercial activities such as dining, vending and advertising may be permitted when they do not interfere with safety and accessibility.

7. Pedestrian improvements should be economical. Pedestrian improvements should be designed to achieve the maximum benefit for their cost, including initial cost and maintenance cost as well as reduced reliance on more expensive modes of transportation. Where possible, improvements in the right-of-way should stimulate, reinforce and connect with adjacent private improvements." (City of Portland, 1998, p.3)

In short, pedestrian roads should serve multipurpose, be enjoyable, be true to its purpose and lastly be danger and hassle free. If only these cornerstones would be established, the road can be and should be defined as part of the pedestrian network.

IV.IV Urban Design Approaches Relating Public Space

With regard to public, there is a need to oversee most common two main public space strategies and relationship between pedestrian and non-alive objects in these strategies.

"Shared Space" which is claiming that it aims to reduce segregation between vehicles and pedestrians. (Figure 1) This is done by removing boundaries between two groups. The basic definition of this concept is defined as "A street or place designed to improve pedestrian movement and comfort by reducing the dominance of motor vehicles and enabling all users to share the space rather than follow the clearly defined rules implied by more conventional designs." by Department for Transport of United Kingdom. (Department of Transport (UK), 2011, p.6) Toth takes this definition even further by writing "Shared Space is more a way of thinking than it is a design concept. It is most readily recognized as a street space where all traffic control devices such as signals and stop signs, all markings such as crosswalks, and all signing have been removed. Curbing is removed to blur the lines between sidewalks and motorized travel way. The philosophy is that absence of all of those features forces all users of the space — from pedestrians to drivers — to negotiate passage through the space via eye contact and person to person negotiation. This is all premised on the idea that traditional streets allocate distinct spaces to the different modes, and in doing so create a false sense of security to each user leading them to behave as if they have no responsibility to look out for other users in "their" space. This obviously works best for operators of motor vehicles, who are sitting within the protection of a ton and a half of steel." (Toth, 2014)

Hamilton-Baillie analysis this phenomena by writing that "Shared space raises the potential for a radically different vision for the streets of towns and cities for the future. With sufficient professional support and political determination, it could hold the key to reversing the long-lamented decline in the quality of streets, both in Britain and across the rest of the world, where cars and traffic are likely to remain an inevitable component of our social and economic structures. If the findings from the increasing number of shared space schemes continue to demonstrate the positive outcomes from treating drivers as intelligent citizens, governed by the same social protocols that underpin civility in other public places, there is a hope that the segregated world of post-war urban planning will no longer need to blight the coherence and quality of the built environment." (Hamilton-Baillie, 2008a, p.179)

Figure 11. The shared space concept (Hamilton-Baillie, 2008b)

There’s also opposing views to shared space implementations between people, Holmes surveyed 600 people and found that 63 per cent rated their experience of shared spaces as poor, with over a third of people actively avoid shared space schemes. One pedestrian respondent described the concept of shared spaces as “lethally dangerous”, while a driver said it was an “absolute nightmare that I avoid if I can” (Holmes, 2015).

Removing boundaries and obstacles between different vehicles like cars, bicycles and pedestrians which have different weights, volumes therefore possessing different dangers and safety measures is never a good idea. England is not the only country that have shared space implementations, in Netherlands this idea started with Hans Monderman. His idea was to remove traffic lights, signs, crosswalks, lane markers and even curbs so that pedestrians, motorists, and cyclists must negotiate their way through streets by interacting with, and reacting to, one another. (PPS, 2016)

Similarly, Traffic Calming strategy is aiming the same goal, to slow down the traffic, therefore reduce the number of cars passing per hour. Hass-Klau defines traffic calming as “the application of measures such as road humps, tree planting, chicanes, speed cushions, pinch points, raised junctions, soft separation, signing, and appropriate choices of road materials. These are all designed to reduce the speed and intrusiveness of traffic, to enhance safety, and to shift the 'balance of power' in streets used by traffic in favour of pedestrians and where appropriate, cyclists. In principle, pedestrianization which allows some motor-vehicle access merges into the area of traffic calming." (Hass-Klau, 1993, p. 21)

In traffic calming strategy non alive objects are tried to be used to slow down traffic but, the problem with slowing down traffic, even though it makes the traffic less dangerous for pedestrians, is that it does not cut traffic down, it makes traffic present through the every time of the day, whether there is another car ahead or not.

IV.V The Historic Background

Before going any further with the subject, there will be a brief overview of Turkish cities historic background research in general, focusing on issues and problems relating to pedestrian environment and pedestrian movement, from various sources to these issues and problems in addition to the description of the pedestrian planning strategy background in Istanbul and in Türkiye in general to understand the case in point, better.

IV.V.I The History of Current Turkish Urban Policies

The United States of America's everlasting fascination with the car roads, automobiles and policy of abandoning public transport in favor of capitalism is transmitted to European countries in June 1947 under the official title of "European Recovery Program". "European Recovery Program" or "Marshall Aid", the unofficial name known in Türkiye, was based on American interests not only to revive European economy as a strong trading partner but also to strengthen Europe therefore US's hand would be strong against further Union of Soviet Socialist Republics political expansion after World War II ended. US's Congress passed the Economic Cooperation Act in March 1948 and approved funding that would eventually rise to over $12 billion for the rebuilding of "Western Europe". Multiple propaganda material (Figure 12) produced during this program determined to cornering USSR .

Figure 12. NATO poster for European Cooperation (Spreekmeester, 1950)

After 1950, with the current government in Türkiye’s series of loans and “aid”s from USA resulted in high investment in construction sector, especially of car roads. Highway transportation gained superiority over railway transportation. Sevüktekin and Keser writes “Between 1952 and 1962 the budget of T.R General Directorate of Highways began to compose 10% of government budget. After 1960’s, as a result of transportation policies based on highways, goals anticipated for railways could not be achieved. Coordination could not be enabled between sub-systems of transportation and investments made on highways sustained its effectiveness. In the beginning of 1970’s railway transportation experienced important recession due to establishment of motor vehicle industry, importance given on highway construction, starting ring-road projects and Bosporus Bridge which connects Asia and Europe being put into service.” (Sevüktekin, Yıldırır Keser, Ay, & Çetin, 2014)

IV.V.II The History of Istanbul’s Urban Policies

Until the first quarter of the 19th century, Istanbul (Figure 4), capital of the Ottoman empire remained essentially a pedestrian focused city, while goods and people transported by boats and small carts pulled by animals. While the city journeys in Istanbul were carried out as pedestrians and equestrians before 1830, the first sea transport was started with boats from 1830 onwards. At this point city evolved into an urban space where mass transportation is widely used along with the act of walking.

Figure 13. Map of Istanbul (Original Scale: 1:80,000), showing border of the city and old city's silhouette (Homann, 1714)

About the history of the city IBB writes “The first modern municipality-like public body was established in the wake of the Tanzimat perod(the era of fundamental administrative reforms in the Ottoman Empire introduced in 1839). Pre-municipal entities and authorities included religious establishments, guilds and Qadi, who was assisted by several imperial senior officials (chief of constabularies, imam, chief architect). The Qadi not only retained his eminent role as the chief judicial authority but was also given the administrative control over a territory as the representative of the imperial government. As a result of the Industrial Revolution, while altering the existing production techniques, the traditional local administrative system became incapable of meeting the needs of a better and more sophisticated local government. The brand-new local authority was named "Şehremaneti" (16 August 1855). This new structure was comprised of two bodies, namely the"Şehremini" (meaning "Mayor" in Ottoman Turkish) and the "City Assembly," both of which were led by appointed chief executives.

During the Constitutional Monarchy I-II period , one of the first actions of the Meclis-i Mebusan (Imperial General Assembly), which was established with the newly adopted Ottoman Constitution (Kanun-i Esasi) in 1876, was to enact comprehensive public acts for administering the Imperial Capital, Istanbul, and other provinces. The new legislation for Istanbul conceived the Şehremaneti to be composed of 20 municipal departments and the Cemiyet-i Umumiye-i Belediye (General Municipal Assembly) thus enabling the municipalities to become legal entities.

After the fall of the Ottoman empire, Turkish republic is formed. Throughout the first years of the Republic, the local government structure in Istanbul, set out by the laws promulgated in 1877 and 1912, remained in effect with slight alterations in terminology. For example, Şehremaneti was changed to "belediye" (municipality in modern Turkish) and şehremini to "belediye reisi" (City Chairman/Mayor). Istanbul was divided into ten district municipalities. The year 1930 marked the introduction of a new Local Administration Act which merged municipalities and special provincial administrations. Under the new law, the city leader was commissioned as both the Governor and Mayor of Istanbul. The GMA and the Meclis-i Umumiye-i Vilayet (General Provincial Assembly), which was part of special provincial structure at that time, were replaced by a new body embracing the duties of both of the previous entities.

With the law accepted on July 10, 2004, Istanbul Metropolitan Municipality's jurisdiction was enlarged to cover all the area within the provincial limits. Furthermore, the number of the district municipalities rose to 32 while the number of First-Level Municipalities became 41. Finally, under Public Act no.5747, dated March 6, 2008, more quarters were designated as districts, whereas the District of Eminönü became a quarter within the jurisdiction of the District of Fatih. Therefore, the number of district municipalities in Istanbul rose to 39; whereas, the first-level municipalities were abolished." (IBB, 2017)

IV.VI Summary

To summarize it all, whether it is developed or developing country, there is the problem of creating comfortable, ecological, aesthetically beautiful and sustainable urban environment where human beings most basic form, pedestrian is at the center and every non-alive objects placed around it, not blocking its movement and freedom to move wherever they please in public environment. This is especially hard for old cities like Istanbul with its already established urban environment.

Turning to strategies, none of it is suitable in an environment where people just park where they find (Figure 14), therefore there needs to be formed a new strategy, where there is no need for law enforcement to enforce basic rules like not parking on pedestrian road.

Figure 14 Multiple occasions where pedestrian road blocked fully or partially (By Author)

V The Basis of Pedestrian Network Planning

Given the different needs of pedestrians, urban planner should take wide range of user needs into account pedestrians of different age group and those with children or people with physical disabilities.

To design a street and a city for all citizens, streets, mainly pedestrian roads should be designed for people with highest variety of different needs. This principle ensures all citizens of the city becomes equal on a physical and psychological level and removes physical boundaries between them.

These principles of designing for pedestrian road include;

- Sufficient movement space,
- Sufficient width of pedestrian road,
- Free space till head-level,
- Flat and non-slippery surface
- Routing and warning signs,
- Manageable inclination for pedestrians with stroller and pedestrians with wheelchair

V.I Necessity

In every core of change, and improvement there lies the necessity, and will to survive. Every organism, including human beings, has their unique ecosystem where they live in. Today's cities are Homo sapiens' natural habitat since Jericho in today's Palestinian territories and Çatalhöyük in today's Turkish territories has been founded. As can be expected, all organisms need to adapt to their habitat to be able to survive. In brief, locals of the cities worldwide need to change their living environment for the better, in this instance transportation behaviour in favor of the city and themselves. Gehl puts this by writing, "Together the rapid urban growth of the world's largest and poorest cities represents an enormous complex of problems. Housing, jobs, health, transport, education and utilities are needed. Pollution must be combated, garbage removed, and living conditions generally improved. In the face of the challenge of dealing with so many sectors in only a short time and with limited means, it is important as well as reasonable to ensure that the human dimension of city planning is carefully integrated into work on city development. While the desire of many people to have access to cars or motorcycles in connection with economic growth is understandable and respected, the move towards more motorized traffic should not be accepted at the expense of traditional modes of transport: walking and bicycling. In many cities in the economically developed part of the world, notably in Denmark and the Netherlands, good examples exist showing motorized traffic and people traffic moving side by side. The need for this type of reasonable coexistence between street uses is even more urgent in developing cities. Compared to all other areas of investment, the funds needed to provide for the human dimension will be minor indeed." (Gehl, 2010, p.162) As Gehl writes in order to form a city around pedestrian, funds spent towards this goal is small compared to major investments like mega malls and "biggest" airport of Europe.

V.II Physical Space Required for Pedestrians

Not every pedestrian is same and doesn't have the same characteristics therefore they have different needs; the basis of those needs is the amount of space that is required to move freely (Figure 15).

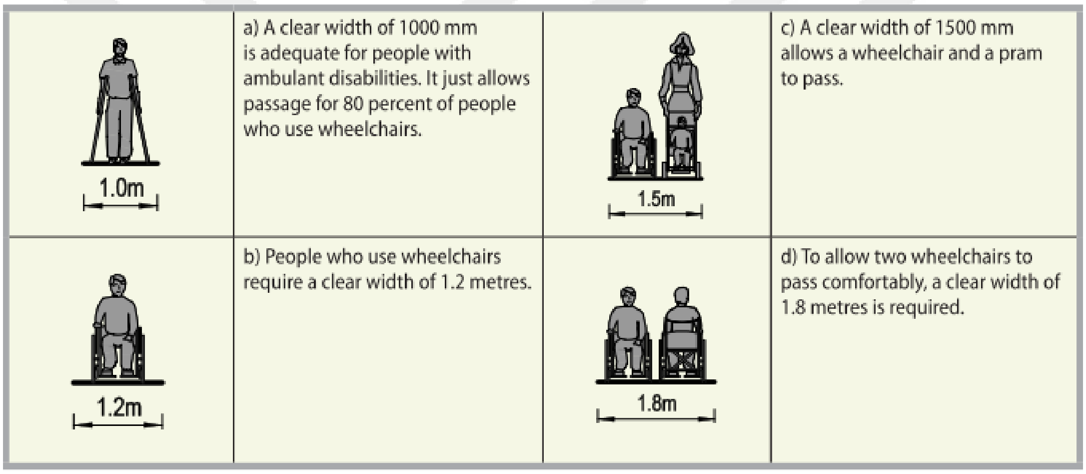


Figure 15. Physical Space Requirements (Agency, 2009)

V.III Walkability

In order for a pedestrian road to be walkable it should not just provide basic conditions but also ideal conditions to people. Speck explains the general theory of walkability by writing "how, to be favored, a walk has to satisfy four main conditions: it must be useful, safe, comfortable, and interesting. Each of these qualities is essential and none alone is sufficient. Useful means that most aspects of daily life are located close at hand and organized in a way that walking serves them well. Safe means that the street has been designed to give pedestrians a fighting chance against being hit by automobiles; they must not only be safe but feel safe, which is even tougher to satisfy. Comfortable means that buildings and landscape shape urban streets into "outdoor living rooms," in contrast to wide-open spaces, which usually fail to attract pedestrians. Interesting means that sidewalks are lined by unique buildings with friendly faces and that signs of humanity abound." (Speck, 2012, p.14) Forsyth and Southworth adds these to the definition; .

"Walkable = close: A walkable environment involves a short distance to a destination, particularly where driving is inconvenient or people are without cars—this is the perspective in transportation planning. This definition has a great deal to do with an individual's cost-benefits calculation—are the costs of driving or taking transit great enough to provoke an individual to walk?

Walkable = barrier-free: A walkable environment is traversable, without major barriers. Walkability can be refined to mean traversable to children, elderly, handicapped or those wearing high heels.

Walkable = safe: A walkable environment is safe in terms of perceived crime or perceived traffic.

Walkable = full of pedestrian infrastructure and destinations: A walkable environment visibly displays full pedestrian infrastructure such as sidewalks or separated trails, marked pedestrian crossings, street furniture and street trees.

Walkable = upscale, leafy, or cosmopolitan: A walkable place is somewhere that the pedestrian environment is pleasant for upper middle-class professionals, who have other choices for getting around. This is the perspective in much popular and architectural commentary. Such places have several of the following dimensions: an area with coffee shops and interesting stores; a mix of housing types including apartments and condominiums; a grid street pattern and full pedestrian infrastructure including pleasant tree-lined or architecturally interesting streets; well-maintained or scenic green spaces with clear pedestrian paths; a lack of litter, graffiti and obviously down-and-out people. Finally, there should be transit or taxis in case interest lapses. This type of walking is not necessarily brisk."(Forsyth & Southworth, 2008, p.2)

On the other hand there are multiple contradictive views on walkability, arguing that new urbanism and its first condition making a neighborhood walkable results in high crime rates, in a research conducted by Beavon, Brantingham, & Brantingham, their study demonstrates "that criminal opportunities are at different risks in the environment depending upon their location. It was shown that, all other things considered equal, opportunities have a greater likelihood of being exploited if they are on relatively accessible and frequently traveled streets. These observations support the theoretical supposition that property offenders engage in a spatially patterned search behavior in the selection of their targets. Property offenders will commit crimes within their routine activity spaces. In the aggregate, this means that property crimes are most likely to occur on street segments which are highly accessible within the road network, have higher levels of traffic (or people) flows, and include attractive targets such as apartments, bars, high schools or motels. In this aggregate analysis of property offenses, opportunities in accessible areas dominate the pattern of criminal events" (Beavon, Brantingham, & Brantingham, 1994, p.138) Similarly Cozens criticizes new urbanism wave and writes "firstly, engaging with the existing criminological evidence on urban design and crime will promote more informed decision making and highlight potentially problematic developments that may be more at risk from crime. Secondly, a systematic review of the evidence relating to crime and permeability, mixed land uses in residential areas and off-street parking in laneways is required. Thirdly, sponsoring a critical review of current policy, practice and performance of permeability, mixed-use development and off-street parking in laneways particularly for lower density residential suburbs will provide additional insights. Promoting inter-agency and inter-disciplinary collaboration between environmental criminologists and planning professionals is also a worthwhile objective. Fourthly, reviewing the principles of the Charter for New Urbanism to include crime within its framework is arguably a necessary process." (Cozens, 2008, p.440-441)

Dong dismisses these opinions by conducting his own research and concluding that "the association between street walkability and robbery rate is not statistically significant and its association with burglary rate is only statistically significant when street walkability is very low. This seems to suggest that if a neighborhood already has a medium level of street walkability, improvement of street walkability does not pose a further threat to its safety. Mixed land use is a basic principle of New Urbanist design. It is found that the presence of some non-residential uses, such as retailers and restaurants, has the effect to increase robbery rates. Urban planners and designers should use caution or include counter-measures when including these elements in residential communities"(Dong, 2016, p.16)

Gehl points out the relationship between walkability and city quality by saying that "City quality is so crucial for optional activities that the extent of staying activities can often be used as a measuring stick for the quality of the city as well as of its space. Many pedestrians in a city are not necessarily an indication of good city quality — many people walking around can often be a sign of insufficient transit options or long distances between the various functions in the city. Conversely, it can be claimed that a city in which many people are not walking often indicates good city quality. In a city like Rome, it is the large number of people standing or sitting in squares rather than walking that is conspicuous. And it's not due to necessity but rather that the city quality is so inviting. It is hard to keep moving in city space with so many temptations to stay. In contrast are many new quarters and complexes that many people walk through but rarely stop or stay in." (Gehl, 2010, p.135) Therefore as long as there are something, some elements to city are worth walking for, people will interact with these elements, with each other and walk as a consequence. But not every area to be walked to will be walkwhile, as in worthwhile, therefore be walkable.

V.IV Providing for Pedestrians

Providing for walking should be at the heart of planning for the space in question, as every human being is equipped with legs and ones that uses walking aid need a flat surface without any objects preventing free movement.

In order to provide free access to pedestrians there are four factors relating the trip from point “A” to point “B”. The first one is the physical manifestation of starting point in the space, like home or work etc, the second one is the physical point of destination, like the first one this could be work, home, park, school etc. The third factor is the speed of movement; this is affected by both internal elements like pedestrians age, physical condition and external elements like obstacles between starting point and destination, physical condition of the road, weather, slope of the road etc. Fourth factor is the environment, “what are the things between point “A” and “B”, trees, shops, landscape etc., this affects the enjoyment taken from the trip and chosen route.

Jacobs summarizes providing for pedestrians by defining the successful city neighborhood by writing, “A city street equipped to handle strangers, and to make a safety asset, in itself, our of the presence of strangers, as the streets of successful city neighborhoods always do, must have three main qualities:

First, there must be a clear demarcation between what public space is and what private space is. Public and private spaces cannot ooze into each other as they do typically in suburban settings or in projects.

Second, there must be eyes upon the street, eyes belonging to those we might call the natural proprietors of the street. The buildings on a street equipped to handle strangers and to insure the safety of both residents and strangers, must be oriented to the street. They cannot turn their backs or blank sides on it and leave it blind.

And third, the sidewalk must have users on it fairly continuously, both to add to the number of effective eyes on the street and to induce the people in buildings along the street to watch the sidewalks in sufficient numbers. Nobody enjoys sitting on a stoop or looking out a window at an empty street. Almost nobody does such a thing. Large numbers of people entertain themselves, off and on, by watching street activity.” (Jacobs, 1961, p.35) Above all and maybe combination of what Jacobs defines, streets should be something, people feel that they own, a living room but a living room who they share with other occupants of the city.

As it is mentioned before, providing for walking should be at the heart of planning and in order to promote walking there needs to be an order of importance between users on the streets of the city defining who has the right to the streets first (Figure 16).

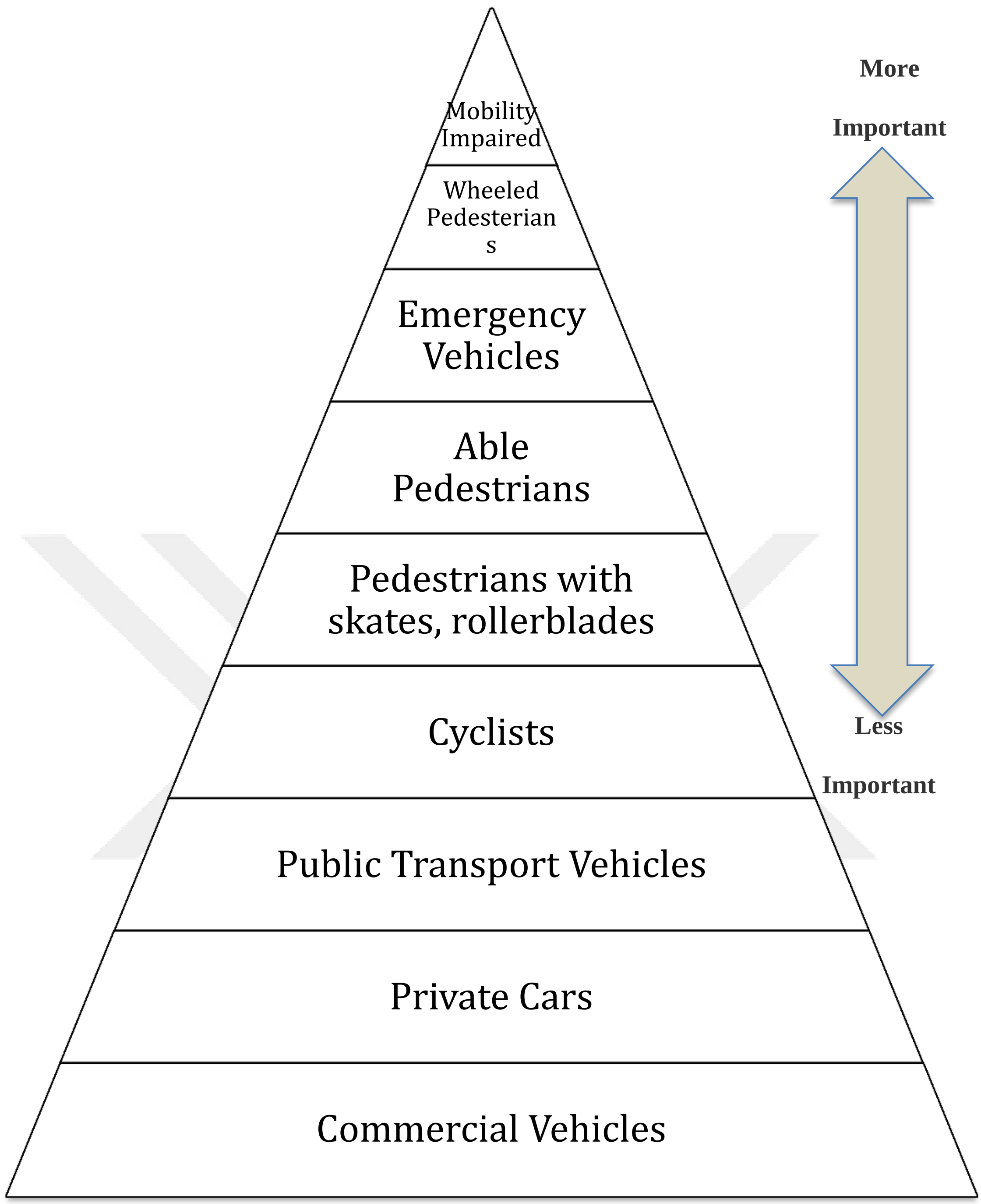


Figure 16. Hierarchy of Priority by author

To provide pedestrians an ideal walkable urban environment and also promote walking rather than using private cars, Grant points out that buildings should be “placed right at the edges of streets and public spaces, rather than being set back behind parking lots or expanses of landscaping. These built edges provide a sense of definition to streets and other spaces, which helps makes the environment more legible and coherent. At all scales, from Manhattan to Willow Glen, edges help reinforce circulation routes while allowing easy pedestrian access to buildings. Building entrances are on or next to sidewalks. Setbacks from the street are short and exist only to provide public space or a transition from public to private life. Where buildings are set back behind parking lots or landscaping, pedestrians are isolated from uses and activities, exposed to traffic and forced to walk greater distances. Even if a walking path or sidewalk is provided, pedestrians and transit users receive the message that they are of secondary importance. Loading docks, service entrances, blank walls and driveways should be limited in size and located where they minimize disruption of pedestrian access." (Grant, 2013, p.16)

Security is another aspect relating environment and basic security and the sense of it is provided by the neighborhood and the people live in it by simply being alive. The term "being alive" can be explained as; people being on the street walking, shopping, talking, sitting, in short, interacting with their surroundings. Gehl writes "The establishment of a social structure and corresponding physical structure with communal spaces at various levels permits movement from small groups and spaces toward larger ones and from the more private to the gradually more public spaces, giving a greater feeling of security and a stronger sense of belonging to the areas outside the private residence. The area that the individual perceives as belonging to the dwelling, the residential environment, can extend well beyond the actual dwelling. This in itself may result in greater use of public spaces – such as parents permitting young children to play outdoors at an earlier age than they otherwise might." (Gehl, 2011, p.59)

V.V Pedestrian network components

To provide an improved network for pedestrians, a variety of techniques and elements can be used to improve the infrastructure and security of the road. Instead of making more roads and making them wider inside the city, easing down the use of road for the cars provides a safer environment for the pedestrians. Increasing road capacity does not remove or lower traffic. Litman, in his research on relationship between traffic and road capacity, obtained these findings;

- "Ignoring generated traffic underestimates the magnitude of future traffic congestion problems, overestimates the congestion reduction benefits of increasing roadway capacity, and underestimates the benefits of alternative solutions to transportation problems.
- Induced travel increases many external costs. Over the long term it helps create more automobile dependent transportation systems and land use patterns.
- The mobility benefits of generated traffic are relatively small since they consist of marginal value trips. Much of the benefits are often capitalized into land values.

Ignoring generated traffic results in self-fulfilling predict and provide planning: Planners extrapolate traffic growth rates to predict that congestion will reach gridlock unless capacity expands. Adding capacity generates traffic, which leads to renewed congestion with higher traffic volumes, and more automobile oriented transport and land use patterns. This cycle continues until road capacity expansion costs become unacceptable. The amount of traffic generated depends on specific conditions. Expanding highly congested roads with considerable latent demand tends to generate significant amounts of traffic, providing only temporary congestion reductions." (Litman, 2017, p.28)

Under these circumstances it's only logical to come to conclusion of lowering the vehicle speed with empowering public transport system and pedestrian network will result in reduced traffic in city that will end up relieving stress off of pedestrians. Some of the strategies that can be implemented to the study are in question are as follow;

1) Charging for Parking

Nelson\Nygaard Consulting Associates' report on Traffic Reduction Strategies Study Report on Pasadena writes that, "Charge the lowest price that will leave one or two vacant spaces on each block -- that is, performance-based pricing. This will eliminate the traffic congestion caused by drivers cruising for parking. One source of excess traffic in Pasadena (as in many other cities) is cruising for parking, that is, people searching and circling to find a free or below market-rate curb parking space. Cruising for parking adds more traffic to an already congested street network. In these circumstances, managing parking prices to ensure that there are available curb parking spaces at all times of day is an important strategy for reducing traffic. Making sure that there are curb parking spaces available, using parking prices rather than relying on minimum off-street parking requirements, is also a fundamental... As demonstrated by the success of old Pasadena's parking meter zone, charging for on-street parking with a goal of leaving one or two vacant spaces on each block (i.e., a target occupancy rate of 85%) will not drive customers away. Under the policy, if rates are set too high, so that too many spaces are empty, the policy requires adjusting rates downward until the parking spaces are again well-used by customers." (Nelson\Nygaard Consulting Associates, 2006, p.viii)

To summarize, while private cars being a comfortable transportation device when there's adequate road, it's a form of device that even needs a big space after the user are even done using it, unlike public transportation, walking or cycling. Naturally, removing or lowering the numbers of the space that private transportation devices use, forces people to choose other means of transport rather than using a car of their own to reach their destination. This is important when the neighborhood in question is a "trendy" place with not enough parking spot, where every citizen wants to reach in the comfort of their private cars. But as can be expected, it’s also important to offer alternative ways of transportation like public transportation network and cycling road to compensate for the private cars.

2) Providing Public Transportation

Directing people to public transportation methods instead of using private cars can and will reduce the private cars on the road. Henning, in a survey which focused on public transport and traffic in Istanbul, concluded these findings;

- “Mobility and Social Cohesion, i.e. the importance of mobility for ensuring for all citizens equal access to and participation in social life; establishing transport systems adapted to the people with the most needs, such as children, the elderly, the job-seekers and the handicapped; paying particular attention to gender issues; developing and implementing measures that guarantee equal access to public transport and that increase traffic safety through the use of suitable technology and organization.
- Financing of Urban Mobility: mechanisms to fund infrastructures and public transport systems; to promote the exploration and use of innovating funding systems for all types of transport; to follow the principles of efficiency, transparency and modal integration, to prioritize the interest of transport users, and analyze the economic and social impact of public transport and its specific value for the functioning of Istanbul.
- Urban Commercial and Freight Transport, i.e. the need to organize inner city distribution of goods and services in such a way that it benefits the economy, local businesses and citizens without impeding the urban environment, air quality or the conditions and quality of urban public space.” (Hennig, 2011, p.23-24)

To put it more simply in an urban environment, reinforcing public transport with multiple methods is the way to reduce traffic, to create livable environment and make public transport only logical way of transportation.

3) Offering Alternative Vehicle Choices

Cycling is another main alternative to using private car to reach the destination at hand. Martin shows direct correlation between cycling and street safety by writing, “The results from the citywide analysis showed a relationship between bicycle modal split and traffic fatalities in selected California cities. Cities were chosen throughout the state of California such that their 2000 bicycle modal split was greater than 2%. Using SPSS, a regression analysis was conducted to determine the mathematical relationship between fatal crashes and their bicycle modal split. The statistical analysis revealed the relationship to be exponential with an increase in bike modal split yielding large decreases in traffic fatalities, a decrease that is higher than the California average, when the bicycle modal split increased from about

2% to 4%. When the bicycle modal split increase was from 4% to 6% the decrease in fatality rate for those cities was also larger than the California average decrease in traffic fatalities in the same time period but not as much as the cities whose biking increased from 2% to 4%. When the bicycle modal split increased from an average of 7% to 12% there was little to no decrease in traffic fatalities.

Site Based Analysis

An Empirical Bayes analysis was done on selected sites in the City of San Francisco. These selected sites included 20 bike lane sites that had bicycle lane installed on them between the years 2005-2007. A control group of untreated sites that didn't have a bike lane on them between the years 2002 and 2012 were also selected for comparison. This group of 25 sites were chosen semi-randomly so that they were located in the general part of the city that the bike lane sites were, they were also chosen to have a similar length and traffic volume as the bike lane sites. The results from this analysis support the hypothesis that installing bike lanes in cities does indeed reduce the number of collisions by a statistically significant amount. At the selected sites, injury crashes reduced by 21% between the years 2002 and 2011." (Martin, 2014, p. 50-51)

As Martin proved, creating bicycle lanes make cities safer, therefore planners should work towards to make cycling hassle-free and appealing in cities. In the end, bicycle is not just easy way to reach destination, it is a vehicle that creates zero pollution and make its users healthier with exercise therefore it does not only reduces Co2 in the air but also lowers the health expenses city-wide.

4) Traffic Calming

Traffic calming is simply a tool for improving urban quality of life which increases the safety of all road users and vehicles. In general, it's a traffic management method that regulates traffic. Litman writes "Traffic calming can increase horizontal equity by reducing motor vehicle external impacts, and by creating a more balanced transportation system that increases travel choices for disadvantaged people. It can be argued that local residents' interests should take precedence over the interests of non-resident motor vehicle users, since vehicle users impose unreciprocated impacts on residents, and because residents pay most of the costs of local streets through local taxes. Traffic calming can also increase vertical equity, since the people who benefit most tend to be economically, physically and socially disadvantaged relative to those who experience the most disbenefits from traffic calming (high mileage, suburban drivers). The impacts of each traffic calming project are unique. There are many different traffic calming devices and measures, and their impacts vary depending on the application. It is therefore not possible to provide "generic" estimates of traffic calming benefits and costs. Each project should be evaluated individually. There are various ways to evaluate benefits and costs, and provide this information to decision makers. Some traffic calming benefits and costs can be quantified using accepted economic techniques. Others, such as increased neighborhood interaction, may be significant but difficult to measure with available information." (Litman, 1999, p.29)

Traffic calming as mentioned before, does "calm" the traffic but it can turn into a bad decision for local people going to their jobs in rush hours or just simply leaving from or coming to their homes.

5) Traffic Reduction Techniques

There are also different approaches to the subjects, these can be listed as;

- Minimizing public and semi-public parking spaces available,
- Narrowing the entrance of the street,
- Building speed bumps across the neighborhood
- Implementing speed limit,
- Building Chicanes at places available,

New Zealand Transport Agency in its "Pedestrian Planning and Design Guide" lists advantages and disadvantages as follows;

"Advantages

Road engineering traffic reduction techniques can:

- Improve the general neighborhood and walking amenity,
- Make it easier for pedestrians to cross roads,
- Create the opportunity to reallocate road space to favor pedestrians,
- Reduce the likelihood of pedestrian injury,
- Be low cost compared with other road improvements,
- Be applied to existing roads.

Disadvantages

They may:

- Require additional maintenance,
- Create problems for bus operators, emergency services and refuse collection,
- Require detailed consultation with all those affected,
- Require that vehicles and associated problems move to adjacent routes." (New Zealand Transport Agency, 2009, p.6-1)

In brief, the approach of "traffic reduction" technique, simply minimizes the problems motorized vehicles creates by forming a hassle for drivers than easing the transportation process which vehicles are aimed for at the first place.

V.VI Summary

The basis of Pedestrian network planning should be based on pedestrian and using limited resources in hand, like car road, pedestrian road, Oxygen, fuel, and water; wisely and economically. Not only that, spaces in urban environment should provide a walkable environment and both local and central government bodies should work towards making private vehicles be used only for emergencies by providing affordable and reachable public transport. This is also the subject of the next chapter, and will be talked more.

VI Process of the Pedestrian Network Planning

Once a pedestrian network strategy has been developed for a local authority, attention is needed to focus on local needs of pedestrians. This approach needs to consider what kind of street design of the neighborhood has, what is the width of pedestrian road, what are the buildings' needs, do they have parking spots their own, what kind of public transport passes by, etc. or to put it simply, what are the current planning activities that affects locals or people who walk by.

VI.I Planning for pedestrians

Some plans focus more on the pedestrians and act of walking as means of transport than other plans. Gehl mentions about the social interaction between pedestrians which is one of the main reasons that cities have been formed by writing "A city walk illustrates its many variations: the quick goal-oriented walk from A to B, the slow stroll to enjoy city life or a sunset, children's zig-zagging, and senior citizens' determined walk to get fresh air and exercise or do an errand. Regardless of the purpose, a walk in city space is a "forum" for the social activities that take place along the way as an integral part of pedestrian activities. Heads move from side to side, walkers turn or stop to see everything, or to greet or talk with others. Walking is a form of transport, but it is also a potential beginning or an occasion for many other activities." (Gehl, 2010, p.120) In a people oriented city, pedestrian network should be promoted in order to create a community and make everyone equal or in other

words, people should be centered as a focus point, not cars, tables, or any non-living objects, that disturbs balance in urban environment.
Coming from that Gehl explains the principles for planning for pedestrians by writing "Several general city planning principles make up a crucial prerequisite for working with the human dimension…The first four principles deal primarily with quantity and about ensuring that people and events are assembled in built-up areas; the fifth principle is on improving the quality of city space in order to invite people to spend more time.

1. Carefully locate the city´s functions to ensure shorter distances between them and a critical mass of people and events.
2. Integrate various functions in cities to ensure versatility, wealth of experience, social sustainability and a feeling of security in individual city districts.
3. Design city space so it is inviting and safe for pedestrian and bicycling traffic.
4. Open up the edges between the city and buildings so that life inside buildings and outside in city spaces can work together.
5. Work to strengthen the invitations to invite longer stays in city space because a few people spending much time in a place provide the same sense of lively space as many people spending only a short time. Of all the principles and methods available for reinforcing life in cities, inviting people to spend more time is the simplest and most effective."(Gehl, 2010, p. 232) As Gehl puts it out, it all comes to city being "accessible" and "inviting" in the end, and by city, streets.

VI.II Pedestrian Network Planning Process

This section of the study focuses on the pedestrian network part of the planning process, asking the questions like who are the stakeholders and what are the goals? Davidoff mentions two main groups, "government" and "other interest groups" by writing "Determinations of what serves the public interest, in a society containing many diverse interest groups, are almost always of a highly contentious nature. In performing its role of prescribing courses of action leading to future desired states, the planning profession must engage itself thoroughly and openly in the contention surrounding political determination. Moreover, planners should be able to engage in the political process as advocates of the interests both of the government and of such other groups, organizations or individuals who are concerned with proposing policies for the future development of the community." (Davidoff, 1965, p.423-424) While he was right, his observations were incomplete.
Stakeholders can be separated into two main interest groups, community and private businesses; however these two groups' interests should go through the political will in order to be implemented. To put it more simply whoever has more power or aware that they have

more power over politics and political will have more power over space which is scarce and a product in cities. As Lefebvre points out there is a politics of space because space is political [il y a politique de l'espace, parce que l'espace et politique] remains as useful a commentary on the spaces of neoliberalism and interlocality competition as it was on the geographies of Fordist-Keynesian capitalism. Indeed, it is precisely because patterns of spatial organization continue to have such strategic significance to capital, states, and social forces at all scales that such concerted political strategies are being mobilized to reshape them. The politics of space thus remain as contradictory and contentious as ever, and their consequences for everyday life remain to be fought out in diverse territorial arenas and at a variety of spatial scales. Lefebvre's reflections on the politics of space from over four decades ago arguably remain an indispensable methodological and political guide for exploring issues about pedestrian space. (Lefebvre, 2009)

VI.II.I Community's Interests and Involvement

Aristotle classifies every state as a community of some kind, and every community is established with a view to some good; for mankind always act in order to obtain that which they think good. From his point of view if all communities aim at some good, the state or political community, which is the highest of all, and which embraces all the rest, aims at good in a greater degree than any other, and at the highest good. (Aristotle, 1999) Coming from that, it's not possible to distinguish these two definitions, "state" -"city" in this instance- and "community" from each other.

In a planning process of a neighborhood, community's involvement and is make up by interests of all parties using the area in question, this includes people from different age groups, different genders, different sexual orientation, different ethnicities, people with mobility and sensory impairments, bus drivers, NGOs, representatives of different interest groups etc.

The benefits of the community involvement in planning includes,

- Gains community's trust and turns neighborhood something they own.
- It can provide more background information and problems of the neighborhood. People who use the same way over and over again, going to their jobs are more likely to spot problems and technicians who has worked there for a limited time.
- It can bind a community together, forming a bridge not just between them and municipality but also with different factions within.
- It's a way to reward community on their thoughts and needs.
- It can prevent future conflicts. A solution without community's involvement may create a bigger problem than before.

- It ensures that the project produced in the end will be something that solve problems and satisfy needs and is not just a way to spend money and make some money for some people.

VI.II.II Private Businesses' Interests and Involvement

Private businesses' interest is solely based on profit. In order to understand how "profit" is made for businesses, there is a need to analyze their methods to this goal in detail in urban environment. These methods include;

- Maximizing revenue:
- Minimizing expenses,
- Increasing its market and people's reach to it,
- Business growth

In an urban environment, these objectives may adapt and modify but doesn't change in core.

Harvey writes about shops, private businesses, by classifying them as "commodity" and writes, "The increasing power of the commodity itself as spectacle was nowhere better expressed than in the new department stores. The Bon Marche was the pioneer and it opened in 1852. Such high turnover stores needed a large clientele drawn from all over the city and the new boulevards facilitated such movement. The department stores opened themselves to the boulevards and streets, encouraging entry of the public without obligation to buy. The shop window was organized as an enticement to stop and gaze upon and then enter and buy. The commodities visibly piled high inside the department stores became a spectacle in their own right. The boundary between public and private space was rendered porous; the passage between them became easy, though an army of ushers and salespeople (particularly salesgirls) patrolled behavior in that interior space (much as they continue to do to this day, though now armed with surveillance cameras and more prominent security guards). The effect, however, was to transform the citizen into a mere spectator and consumer."

Private Businesses aiming to transform ordinary citizens into a mere buyer has their ramifications on public space, simply every kind of intrusive advertisements being available on public space where democracy should reign, instead advertisement reigns.

VI.II.III Political Will

Politics in short can defined as different parties talking while compromising to decide on a common resolution. But Foucault quoting Clausewitz, writes “This reversal of Clausewitz’s assertion that war is politics continued by other means has a triple significance: in the first place, it implies that the relations of power that function in a society such as ours essentially rest upon a definite relation of forces that is established at a determinate, historically specifiable moment in war and by war. Furthermore, if it is true that political power puts an end to war, that it installs, or tries to install, the reign of peace in civil society, this by no means implies that it suspends the effects of war or neutralizes the disequilibrium revealed in the final battle. The role of political power, on this hypothesis, is perpetually to re-inscribe this relation through a form of unspoken warfare to re-inscribe it in social institutions, in economic inequalities, in language, in the bodies themselves of each and every one of us.” (Foucault, 1980, p.90)

Therefore a more realistic Political will definition would be the force that makes “needs” and “wants” corporeal. Politics has goals for community to comprise, but just as importantly, also means to achieve these goals. Planning is a critical tool for politicians to achieve their political goals, which ends up making urban analysis, urban planning, urban design and implementation, every step through planning, inherently political instruments.

Newman and Thornley, speaking on global politics effect on local scale, write “New economic forces operating at a global scale have widened the differences in the fortunes of geographical areas. This has increased the competition between cities to attract investment and given economic objectives an urgency in urban policy. Nation-states have usually responded with deregulatory strategies and the private sector has had a more powerful role in decision-making. The fragmentation of planning decisions amongst a range of public, semi-public and private agencies follows. However, although these have been the major trends throughout Europe there has at the same time been considerable variation in the way urban planning has responded. National planning systems are differentiated along legal and administrative dimensions and national political and institutional structures create significant differences in approach to urban planning. At the urban level specific local economic and political circumstances and the relative power of the various interest groups also affect the urban planning outcome. This variety illustrates that there are opportunities to deviate from the competitive, market-oriented trend.” (Newman & Thornley, 1996, p.245)

VI.III Evaluation of the demand for walking

After talks and discussion with different parties, there is a need to evaluate the demand for walking on the field.

Method	Description	Benefits	Limitations	Application
Similar Conditions Studies	These studies use counts and/or user survey data from existing facilities, sometimes combined with data on the population in the surrounding area, to estimate the potential number of users on a similar existing or proposed facility. (Cambridge Systematics, 1999)	It is simple, easy to comprehend and has easy appliance.	Data in hand may not provide information, needed.	Surveys that are conducted before and after the process are useful showing the difference.
Data Simulations	This method simulates data in order to answer a particular research question or solve a problem.	It is the closest thing to see the outcome of the process with the data in hand without conducting it.	Since it is a simulation, there's a small percentage of failure, with wrong sets of data and appliance of it, into the simulation.	Data gathered from the study area is used to simulate the outcome to estimate what can model of the process end with.

VI.IV Implementation

Implementation is the last step before the design process and it involves steps for policy, the walking strategy, community action plans to create a framework, which comes out of depth analysis into community's, private businesses'' interest and involvement, political will and evaluation of the demand for the walking. But Smith warns that "Governmental policies have been defined as deliberate action by a government to establish new transaction patterns or institutions or to change established patterns within old institutions. Policy formulated by a government, then, serves as a tension-generating force in society. While policies are implemented, tensions, strains and conflicts are experienced by those who are implementing the policy and by those affected by the policy. The tensions generated by the implementation of policies may cause transaction patterns and, in some instances, the establishment of institutions required for the realization of policy goals. Also, the process of policy implementation may generate tensions that trigger changes in other related institutions. It is important to note that institutions need not emerge from every government policy that is implemented. Transaction patterns may be the only result." (Smith, 1973) To put it more simply every implementation have a potential of making different parties unhappy, therefore creating tension.

VI.V Summary

The process of pedestrian network planning is the most political process that an urban planner can go through. It may true that actually this is politician's part but not urban planner's. But urban planner should be present in every part of this process to hear every party's needs and wants to minimize the tension both on the conference room and street level to make the different parties a community, working towards the common goal, instead of arguing about it.

VII Design of the Pedestrian Network

To design any place, not just a pedestrian network, designed object or place in this instance should be true to its purpose but also should be used differently by people coming from different backgrounds. It should be something that people can add things from themselves, things that can be a part of them while people grow.

Lynch puts this out, writing "Most objects which we are accustomed to call beautiful, such as a painting or a tree, are single-purpose things, in which, through long development or the impress of one will, there is an intimate, visible linkage from fine detail to total structure. A city is a multi-purpose, shifting organization, a tent for many functions, raised by many hands and with relative speed. Complete specialization, final meshing, is improbable and undesirable. The form must be somewhat noncommittal, plastic to the purposes and perceptions of its citizens. Yet there are fundamental functions of which the city forms may be expressive: circulation, major land-uses, key focal points. The common hopes and pleasures, the sense of community may be made flesh. Above all, if the environment is visibly organized and sharply identified, then the citizen can inform it with his own meanings and connections. Then it will become a true place, remarkable and unmistakable." (Lynch, 1960)

VIII Case Study: Caferağa Neighborhood in Istanbul

The reason that Caferağa is chosen as the case study, as it is mentioned before, the neighborhood being the main pedestrian movement point on Istanbul's Anatolian side. The attraction points on the area includes Bahariye Avenue, which is famous for shopping stores; Kadıköy Bazaar which is known with fish markets, restaurants and wide variety of stores; Kadife Street and its surroundings, which is famous with its bars and pubs; Moda Coastal Road and Kadıköy Coastal Park, both are coastal parks and lastly cafes all around the Caferağa which its numbers rose up rapidly for the past 5 years (Figure 17).

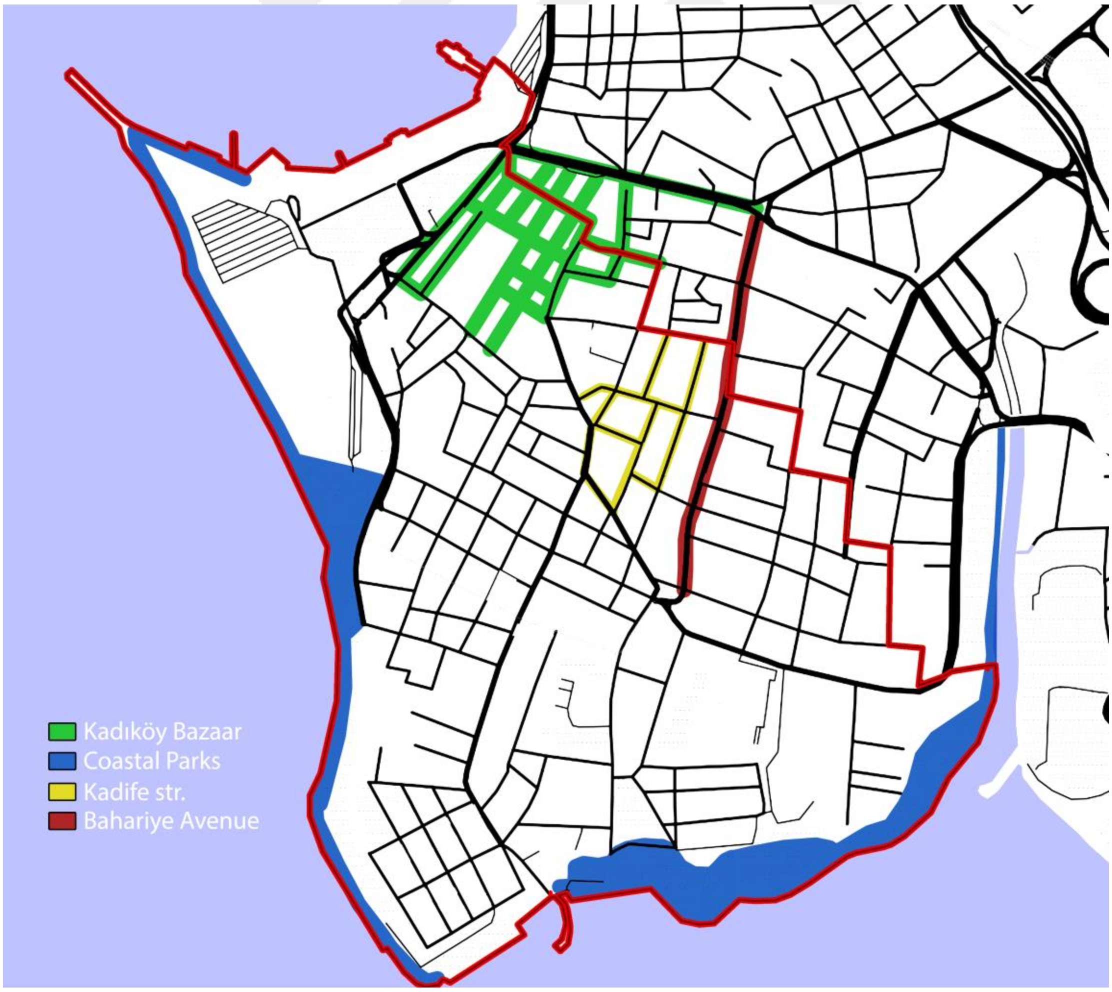


Figure 17 Caferağa and its attractions (By Author)

VIII.I General information about the area of Caferağa

In order to understand Caferağa, there’s a need to go through the general information of Kadıköy, where Caferağa lies on the hearth of. District of Kadıköy is between D-100 Highway connected to Bosphorus Bridge and Fatih Sultan Mehmet Bridge, Anadolu Railway and Haydarpaşa Station which is the starting point of the suburban line and city ferry lines which connects Anatolian side to European side. It is also the focal point of important transport links within the Marmara Region. With this position, Kadıköy has been serving as the central district for the Anatolian side for many years. The connection axes from Istanbul's Kocaeli[5] border and the surrounding districts are connected to the European Side by passing through Kadıköy. In this respect, Kadıköy is located on a transition and migration line.

The main character of Kadıköy comes from its coastal line and harbor. A natural harbor and Söğütlüçeşme Street stuck to it are two important elements of the main character. People use Kadıköy to reach to the European side of Istanbul passing thourgh Caferağa. The origin of the character of Kadıköy does not stem from itself as it is a center of attraction. It has become a center of attraction with "The Role of Background in Transition to Istanbul". In other words, the most important element of its character being a transfer center. It has always been used as a "Jumping Stone" in Istanbul. Kadıköy gained value for the last 5 years as residential and commercial zone, as new Metro line opened in 2012, in north-west corner of Caferağa.

Kadıköy consists of two closed parts. One of the pieces is Yeldeğirmeni-Rasimpaşa and the other one is Caferağa (Moda)-Osmanağa neighborhood. These two pieces of city are separated from each other by Söğütlüçeşme Street. The urban mesh of both parts is the grid system.

Neighborhood of Caferağa stationed southeast of Kadıköy. (Figure 18) Caferağa is on the hearth of the Kadıköy consisting of main bus station hub, multiple ferry ports connecting Kadıköy to not only other parts of city but also other Turkish cities, main train station connecting the city to the rest of Anatolia and a metro that connects this part of the city to other parts. With those connections Kadıköy and Caferağa which these hubs stationed at, holds the title of transportation hub for Istanbul’s Anatolian side but since it is a peninsula, it has the advantage to be able to avoid crowd and traffic that comes with centrality of Kadıköy. Even though Caferağa is where the public transportation hub located at, there’s only one public transport line, connecting one point to another inside the neighborhood, making a ring inside: Nostalgic Moda Tram. (Figure 19)

[5] Kocaeli is a Turkish city that is located between Istanbul and rest of the Anatolia.

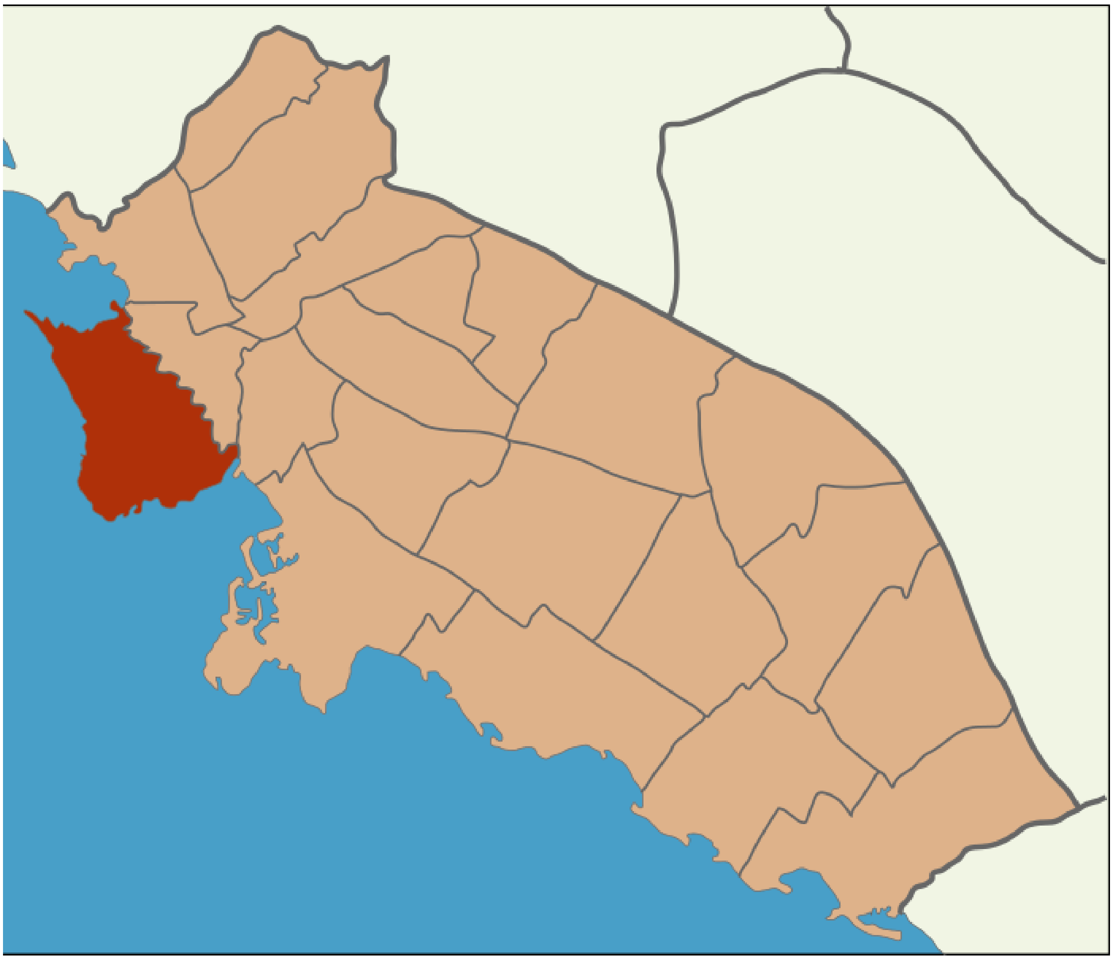


Figure 18 Location of Caferağa in Kadıköy (Wikipedia, 2017)

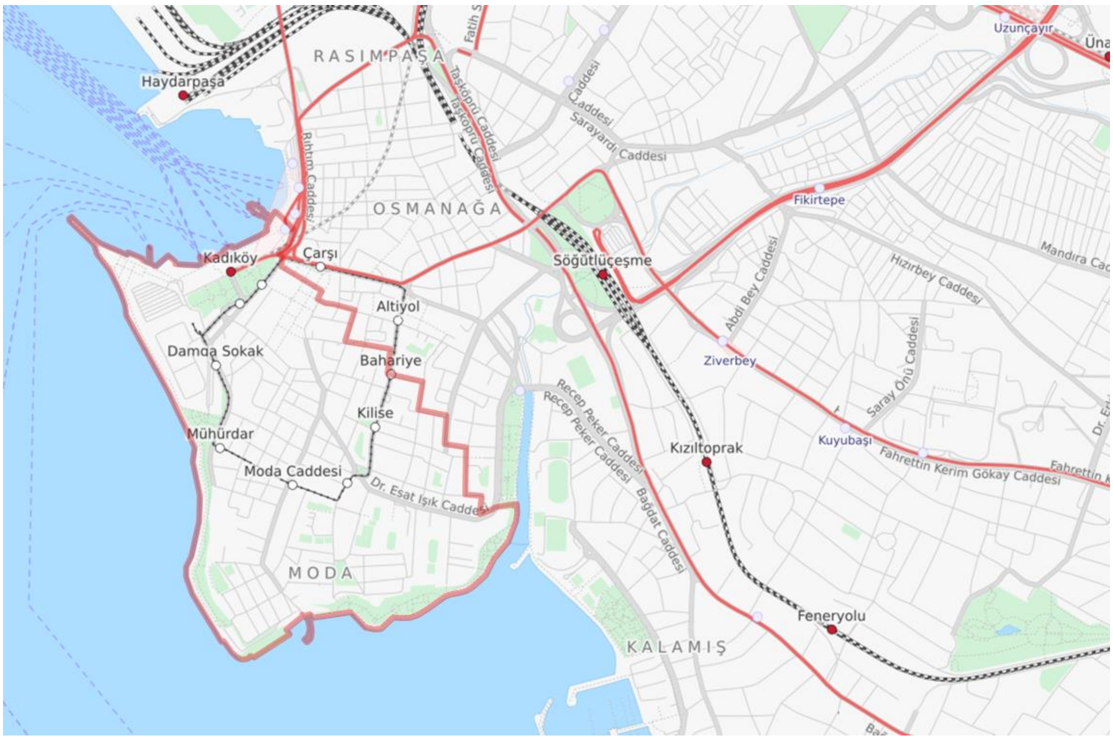


Figure 19 Public Transportation Map (Open Street Map)

The average price of residential property per m2 in Caferağa is increased by 21% comparing to September of 2015, APRPM2 in Istanbul is increased by 41% for the same period. (Figure) Even though the percentage is lower comparing to rest of the Istanbul, Caferağa's APRPM2 is 48% more than rest of Istanbul's APRPM2 as of August 2017. (Figure)

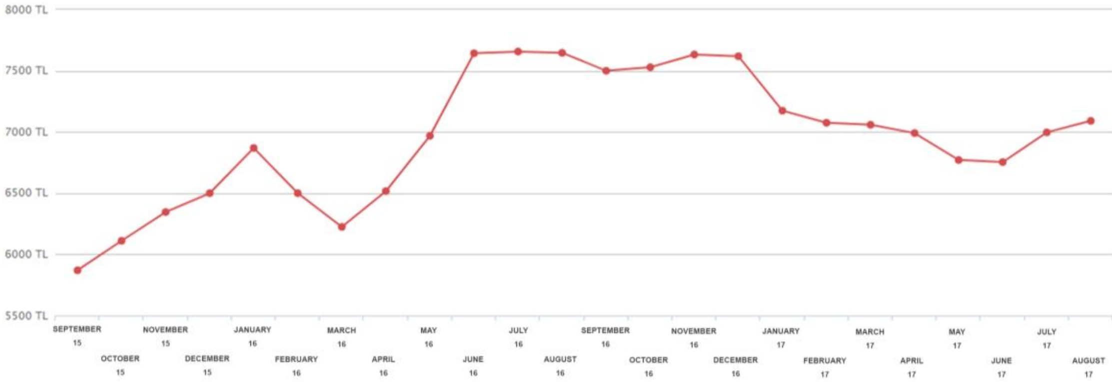


Figure 20 Caferağa, Residential Property for Sale Average Unit m² Price Analysis (Hürriyet Emlak, 2017)

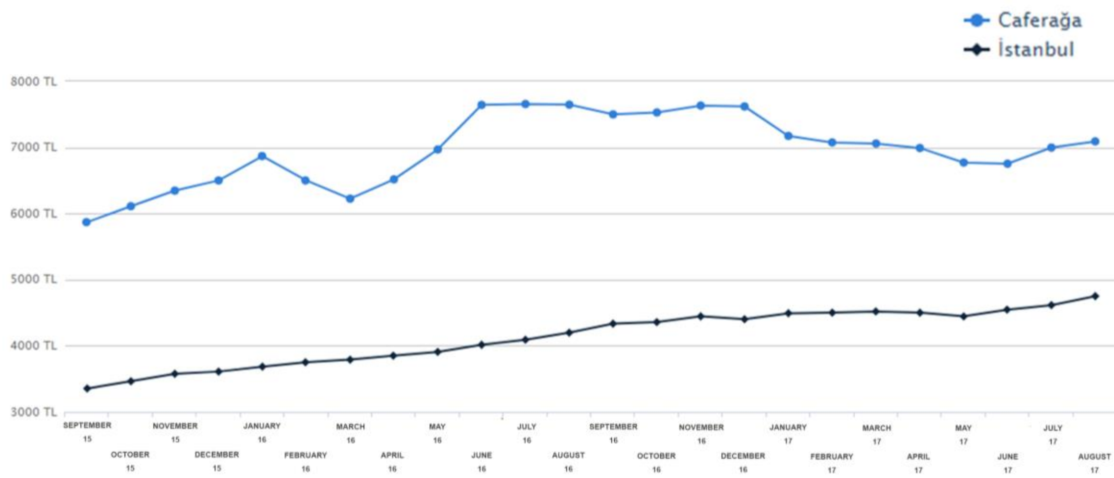


Figure 21 Caferağa, İstanbul, Residential Property for Sale Average Unit m² Price Analysis(Hürriyet Emlak, 2017)

VIII.I.I History of Caferağa

Moda and district its located in, Kadıköy is an older settlement than most of those on the Asian side of the city of İstanbul. Relics dating to 5500-3500 BC (Chalcolithic period) have been found in the area and pieces of stone, bone, ceramic, jewelry and bronze show that there has been a continuous settlement since prehistoric times. Phoenicians were the first settlers that lived in Chalcedon[6] in today where Caferağa neighborhood is. Ottomans started to settle

[6] Ancient name of Kadıköy

in Caferağa in 1350. By conquering old city center which located in Haliç, in European side, Sultan Mehmet the Conqueror merged east and west of the city and it has become today's state. It is observed that minorities coming from European side towards moved to Moda at the end of the XIX.century, which the westernization movements intensified in the years following the Tanzimat period. The arrival of British, as well as the the Greeks, Armenians and Ottoman noblemen to the area has been instrumental in taking the name "Moda" ,which translates to “Fashion”, among the public.

Theaters and movie houses with historic textures in the area are important in the aspect of cultural tourism in the samples of historic work of arts as memorial characteristics. The most of important of these cultural revenues is Süreyya Opera House, also called Süreyya Cultural Center (Turkish: Süreyya Operası or Süreyya Kültür Merkezi), is an opera hall located in Kadiköy district of Istanbul, Turkey. Designed and built by the politician Süreyya İlmen Pasha, it was originally established in 1927 as the first musical theatre on the Anatolian part of Istanbul. (Kadıköy Belediyesi, 2007)

VIII.I.II   Current Situation of Caferağa

Historically there were two centers where social and cultural facilities gathered, Beyoğlu to the west and Kadıköy to the east. With time, with wrong policies in Istiklal Street, which is the hearth of Beyoğlu, lost its appeal, and its visitors in the last decade, most of the old shops and famous brands’ stores closed, famous old tram that passes through the street is shut down, number of people in the street went down, and people who visit the area changed. (Figure 22 and 23)

Figure 22 Istiklal Street 2004 (Cumhuriyet, 2014)

Figure 23 Istiklal Street 2017 (Birgün, 2017)

With Beyoğlu losing its appeal, “trending crowd” headed for Caferağa/Kadıköy, and the rest of the people followed. Caferağa, having pedestrian on center with its own shopping street and two coastal parks became the primary attraction for the city, for people to get away their daily occupation but also to stay close to their home and work.
For the last five years Caferağa gentrified, its user base changed, percentage of the people that are coming from outside, from every part of Istanbul, are increased comparing to the local people in the neighborhood. With more people coming, new cafes, restaurants, bars are opened; small shops, electricians, small book stores, antique dealers, shops that cannot meet the increased rents lost their shops.

VIII.II Coast side’s Influence on Caferağa

In today's conditions, there are major elements relating the formation of cities. These elements are the natural, physical and social structures of the city. These three elements interact with each other to form the system of the city. The presence or absence of a water scene in a city's natural structure, whether it is a coastal city or not, affects the functioning and image of the whole city. The coast is the area where the city meets nature. The city is integrated with nature along with the presence of the coast. While the city provides connection with other cities, it also has restrictive and decisive influence in settlement. The coast is the area where water and city comes together. Therefore, water is an element that strengthens the city image and gives it characteristics. In settlements with coasts, the city is shaped by water. The city is developing on the basis of water resources with the influence of topography. Coast side in cities, connects cities to the rest of the world, it makes a city or in this instance, a neighborhood, global.

Throughout history, it is known that many cities are located at or near the water's edge, and that the close relationship between cities and water exists naturally. Not only because of their geographical location, but also because of the cultural, social and economic potential they create, the coasts are different than rest of the city. The coastal areas attracting attention as the natural attractions of the cities due to nature are the focus points of many cities with their economic, social, historical, cultural and ecological values. It is the basis for creating this focus, facilitating water transportation and trade. In the changing and developing cities, the coastal areas are the transition points and are in constant change. This is no different for Caferağa, the neighborhood had been used as summery at first but with time as Istanbul grow, Caferağa became part of the city.

As city grow, as the people flow to Caferağa, the need of public space emerged, hence between the years of 1990 and 1993, 0,28 km2 area of the sea is filled and transformed into land (Figure 24). This landfill area is where two coastal parks located on today.

Figure 24 Land Reclamation Area of Caferağa (by Author)

VIII.III Municipal policies in Caferağa

Main strategies for Kadıköy by local municipality in “Performance Program of 2017” mainly summarized as;

- Achieving a contemporary and sustainable institutional structure supported by innovative technological systems, which provides equality for the institution and the city, strong communication, manpower and education policy, manages resources and business processes according to internal control system, works according to work safety standards.
- To make the participatory, transparent, accountable management model effective in Kadıköy, to ensure that people participate in management.
- To support the social life of women, children, men, young people, disabled, elderly and LGBT individuals who are having difficulty in adapting to the city in terms of social structure, maintaining social support activities in cooperation with external stakeholders and ensuring the sustainability of the projects.
- To ensure social stability and sustainability of the social order by providing vocational trainings to support employment by conducting studies that will provide cultural, social and economic advantages to all sections of the people, women, children and young people on the front line.
- To make sports a part of the life and to do healthy activities to support life in Kadıköy.
- To produce permanent solutions to infrastructural and superstructure problems in order to create a city in the direction of "Livable", "Healthy", "Unhindered" and "Sustainable Kadıköy" principle; to design urban aesthetics by carrying out plans and projects that will protect the historical-cultural texture.
- To reduce the most possible damages and effects by effectively managing disaster and emergency processes.
- To raise environmental standards by fighting all kinds of environmental pollution in the direction of a viable Kadıköy for every living organism, to combat climate change by using energy and natural resources effectively and to develop in the frame of waste management system.
- To work to support the rights of all living beings to health and to provide services by producing projects that are in line with the criteria of WHO healthy cities and to raise the quality of life by increasing consciousness and sensitivity in society.
- To make Kadıköy, a culture, a tourism and an art city by promoting natural, historical, cultural, artistic and touristic values of Kadıköy.(T.C. Municipality of Kadıköy, 2017)

There's no specific policy regarding to Caferağa, but as can be understood from Kadıköy's local municipality's program talking about favoring the marginalized people of the Turkish society, that also proves people from different background living in Kadıköy and in Caferağa.

VIII.IV Pedestrian Network Analysis of Caferağa

In order to understand Caferağa better, multiple on-field studies are conducted within this thesis. Figure 25 shows Pedestrian Road Analysis of Walkability in Caferağa that is conducted on Saturday, 24 June, 2017, a busy day, when pedestrian number on the street is high.

On Figure 25, from red to orange to yellow to green areas, red areas meaning pedestrian roads with heavy usage and green areas meaning light usage comparing other parts are shown

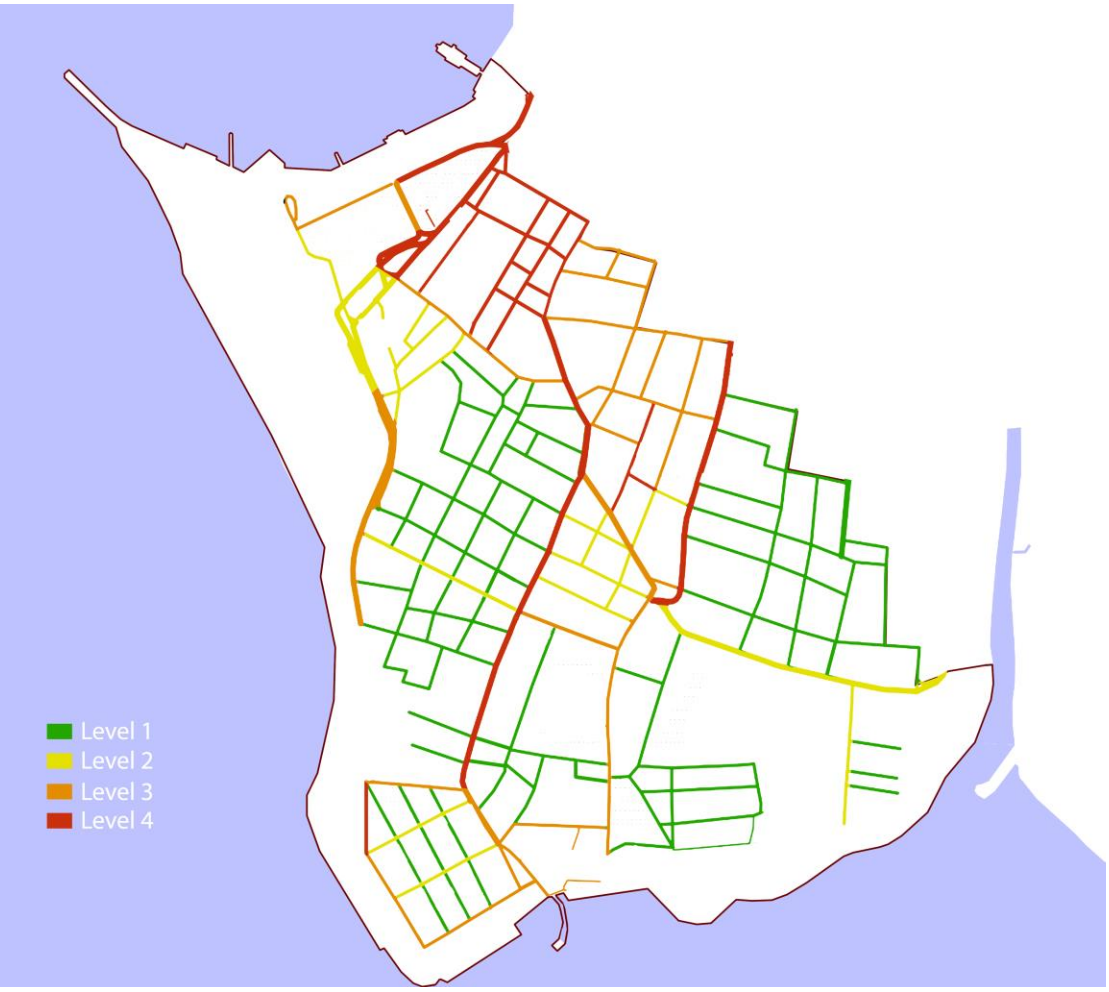


Figure 25 Pedestrian Road Analysis of Density of Caferağa (By Author)

But it's important to realize this analysis is nothing without the walkability analysis focusing not only on the quality and the width of pedestrian road but also things to see, shops, road quality etc.

Therefore a second on-field analysis is conducted. Figure 26 shows Pedestrian Road Analysis of Walkability of Caferağa. On Figure, from red to orange to yellow to green areas, red areas meaning pedestrian roads with lowly walkable streets and green areas meaning highly walkable comparing other parts are shown.

First analysis shows that there's a clear movement from center of Kadıköy flowing to Caferağa. And second analysis shows that even though road width and quality can meet the weight of human movement, it starts having problems through the back streets, where people trying to reach coastal park on seaside or go to newly opened shop and cafes of the last five years on those same back streets.

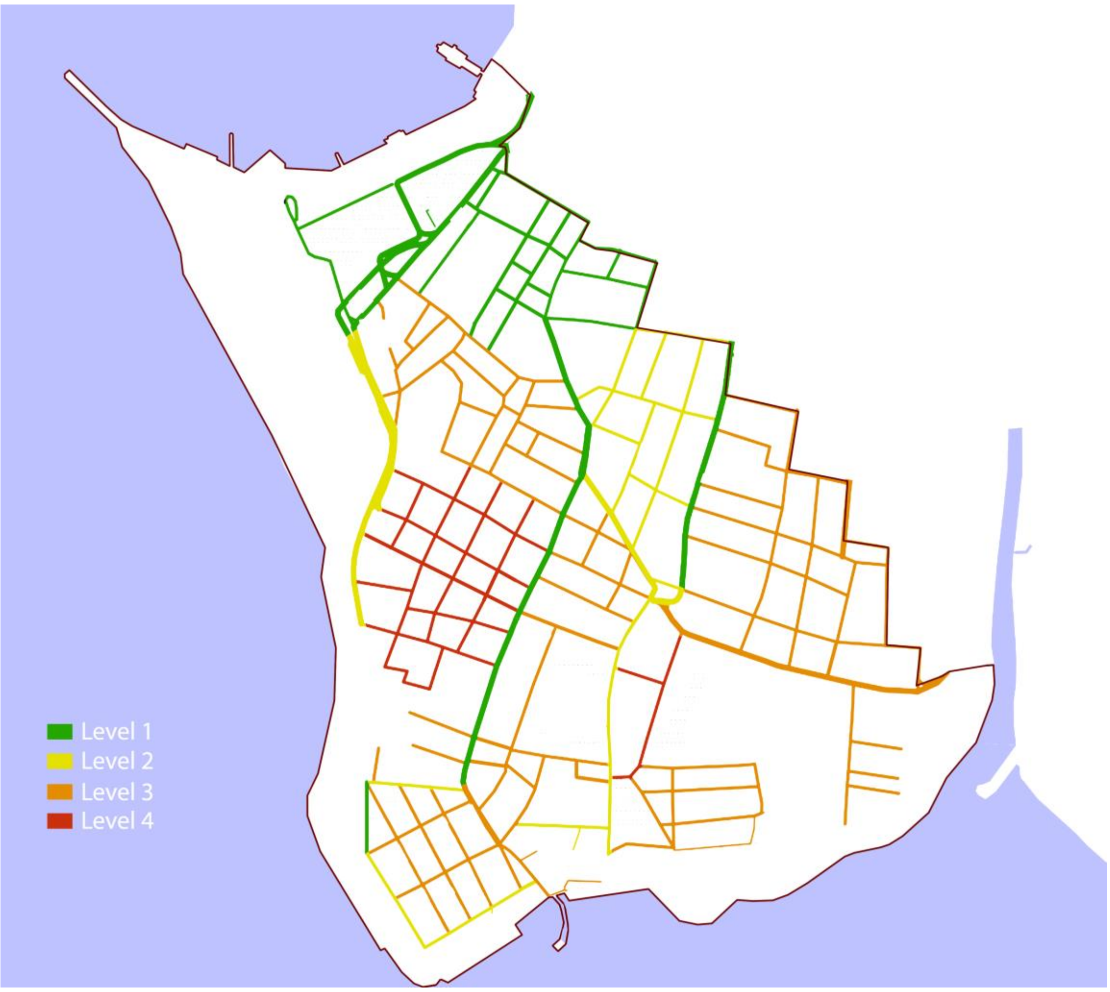


Figure 26 Pedestrian Road Analysis of Walkability of Caferağa (By Author)

Third analysis shows the vehicle traffic difference between Monday and Saturday (Figure 27 and 28). The difference between a week and a weekend day underlies human flow, people from outside of Caferağa coming to the neighborhood with their private vehicles.[7] Private vehicles contribute human traffic at the heart of Caferağa.

[7] Color red shows the speed of the traffic slowing because of the density of the cars on the road, and color green shows the exact opposite.

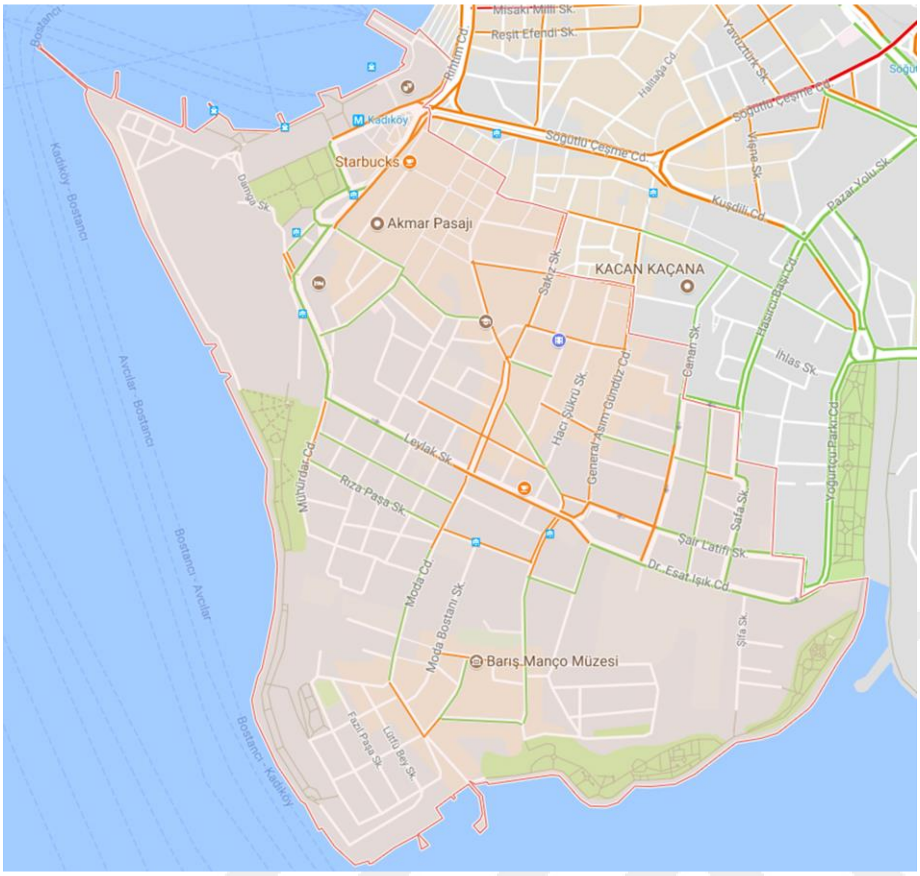


Figure 27 Vehicle Traffic On Monday 11:00 (Google Maps)

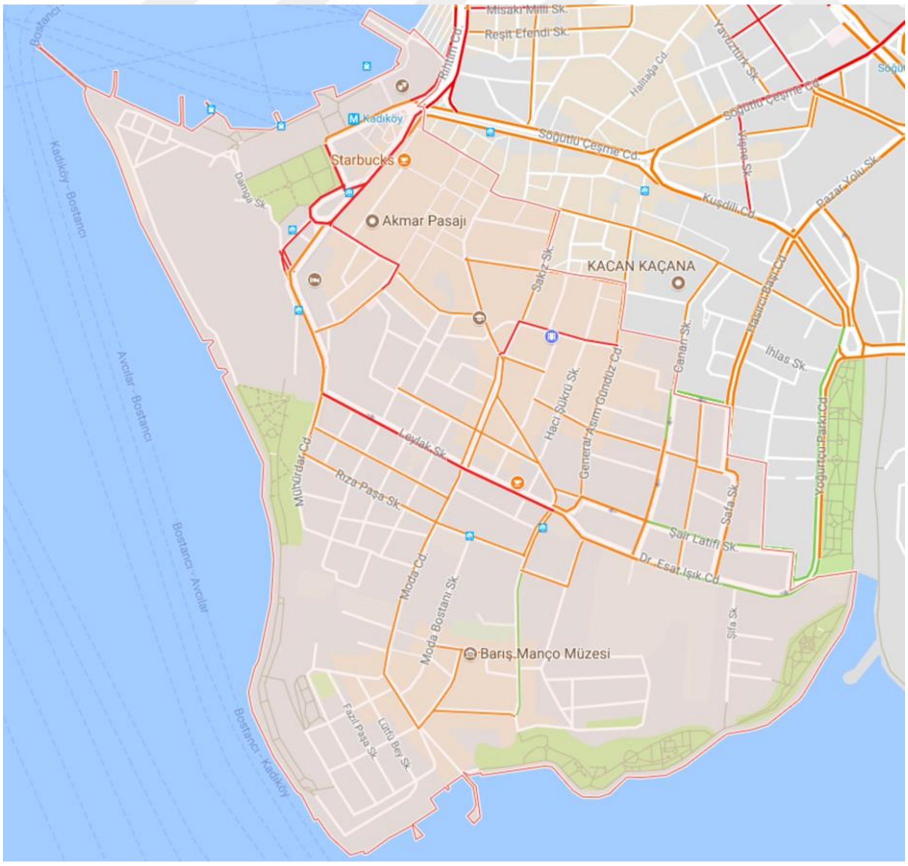


Figure 28 Vehicle Traffic on Saturday 11:00 (Google Maps)

VIII.V Pedestrian Behavior Analysis of Caferağa

While examining pedestrian roads it is also important to examine pedestrians' needs, wants and how they see Caferağa whether they come from outside or they live inside the neighborhood. In order to reach this goal a survey on 54 pedestrians conducted both on the field and through the internet with people who are over 18 years old.

First data shows that only 30% of the people on the street are local people. (Figure 29) This shows that Caferağa neighborhood addresses people from all over the city, and its wide range of amenities gathers people from distance.

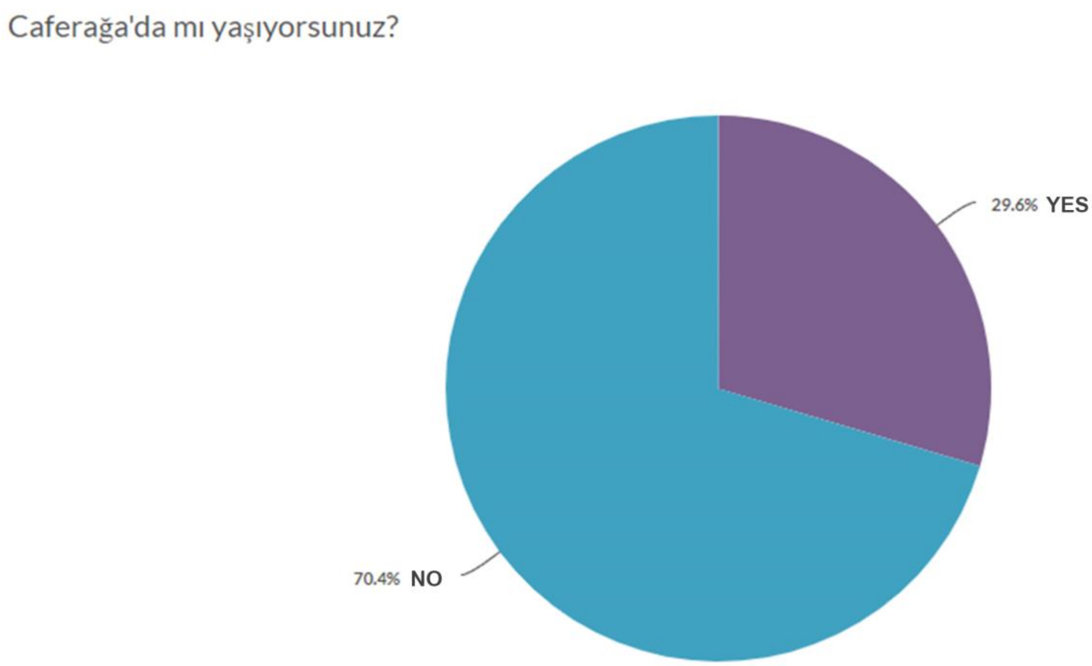
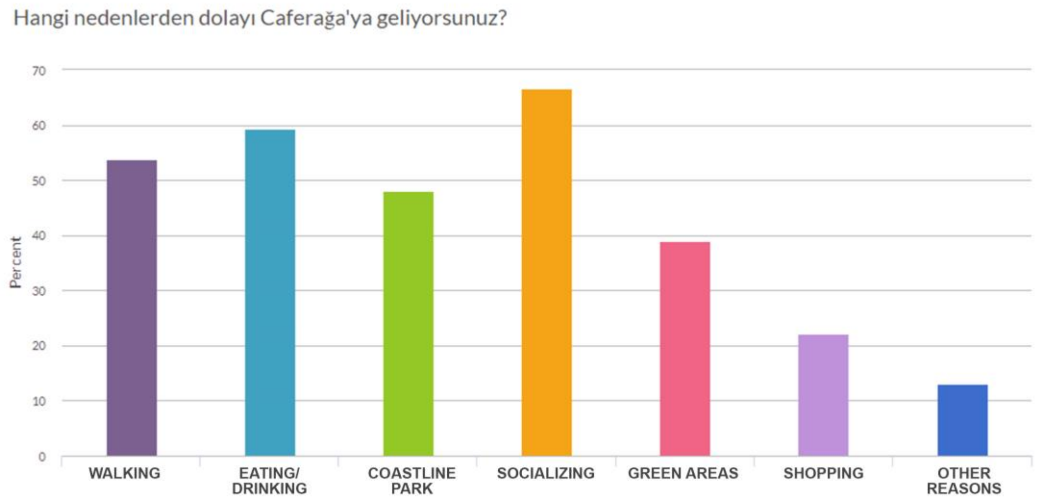


Figure 29 Are you living in Caferağa? (By Author)

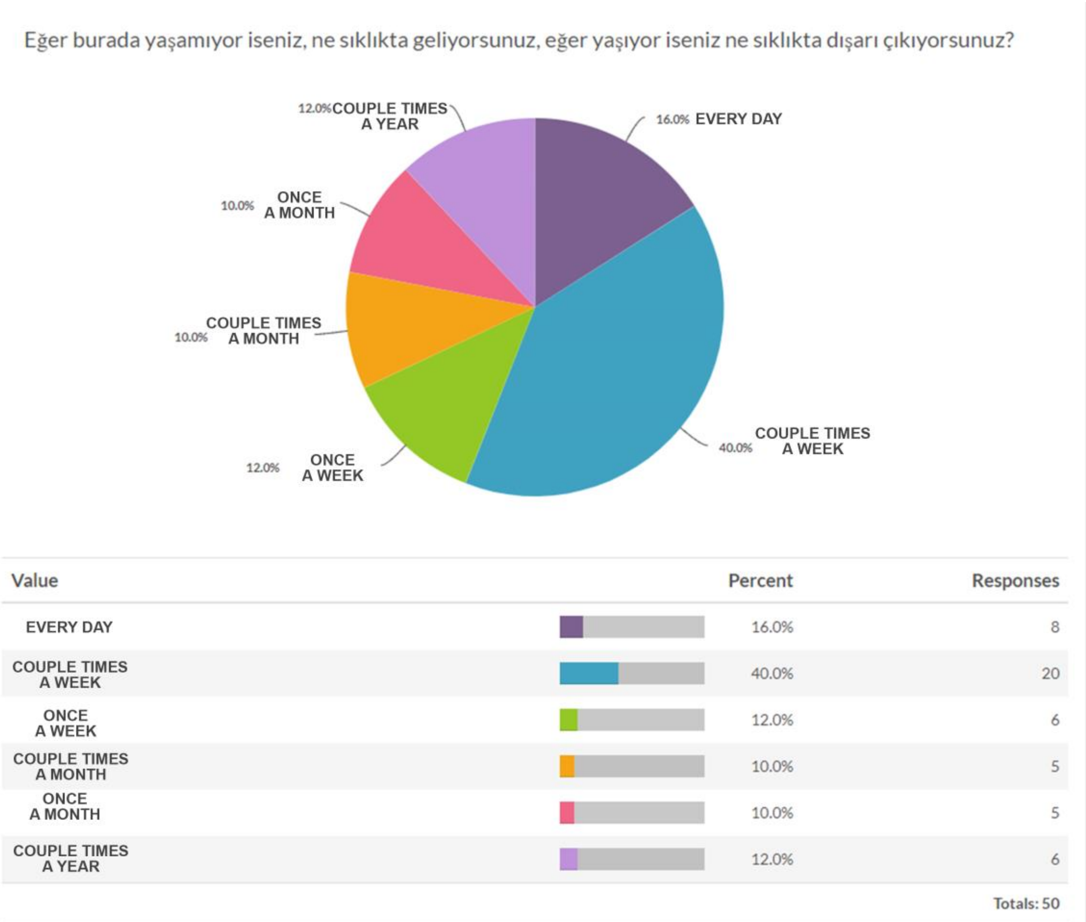
Second data, gathered by a multiple choice question, shows that people come here mostly for socializing, followed by eating and drinking, followed by walking, followed by coastline park, followed by green areas, followed by shopping followed by other reasons. (Figure 30) The reason that “socializing” is most chosen reason is high percentage of public space and multiple bars, cafes, restaurants, in other words semi-public spaces in the neighborhood.



Value	Percent	Responses
WALKING	53.7%	29
EATING/ DRINKING	59.3%	32
COASTLINE PARK	48.1%	26
SOCIALIZING	66.7%	36
GREEN AREAS	38.9%	21
SHOPPING	22.2%	12
OTHER REASONS	13.0%	7

Figure 30 For which reasons are you coming to Caferağa? (By Author)

Third data shows how often people coming to Caferağa.(Figure 31) 40% of the pedestrians asked are coming couple times a week, this is followed by everyday with 16%, this is followed by once a week and couple times a year both with 12%, this is followed by couple times a month and once a month, both with 10%. This data could be interpreted as Caferağa having a repetitive people base who are visiting the neighborhood regularly.



Value	Percent	Responses
EVERY DAY	16.0%	8
COUPLE TIMES A WEEK	40.0%	20
ONCE A WEEK	12.0%	6
COUPLE TIMES A MONTH	10.0%	5
ONCE A MONTH	10.0%	5
COUPLE TIMES A YEAR	12.0%	6
		Totals: 50

Figure 31 If you are living in Caferağa, how often do you go out; if you are not living in Caferağa, how often are you coming here? (By Author)

Fourth data shows people's preference of transportation method (Figure 32). 52% of the people prefer walking coming to or going from Caferağa, this is followed by Public Transport with 30% and lastly private vehicles and other types of transportation follows, both with %9. This could be explained with pedestrian friendliness of the neighborhood, area being close to public transportation hub but also scarcity of parking spots and car roads being narrow making people deter using their private vehicles to reach Caferağa.

Figure 32 What is your preferable kind of transportation to come to Caferağa or to reach the point you want in the neighborhood? (By Author)

Fifth data shows how long it does take for people to reach the location they want in Caferağa (Figure 33). 20% of the people reach the point they want less than 5 minutes and also between 20 to 30 minutes, this is followed by people reaching their destinations between 30 to 40 minutes with 15%, this is followed by people reaching their destinations between 10 to 20 minutes with 13%, this is followed by people reaching their destinations more than 60 minutes with 9%, lastly this is followed by people reaching their destinations between 5 to 10, between 40 to 50 and between 50 to 60 minutes with all three being with 7.5%. This proves that more than half of pedestrians that come to Caferağa, reach their destinations less than 30 minutes.

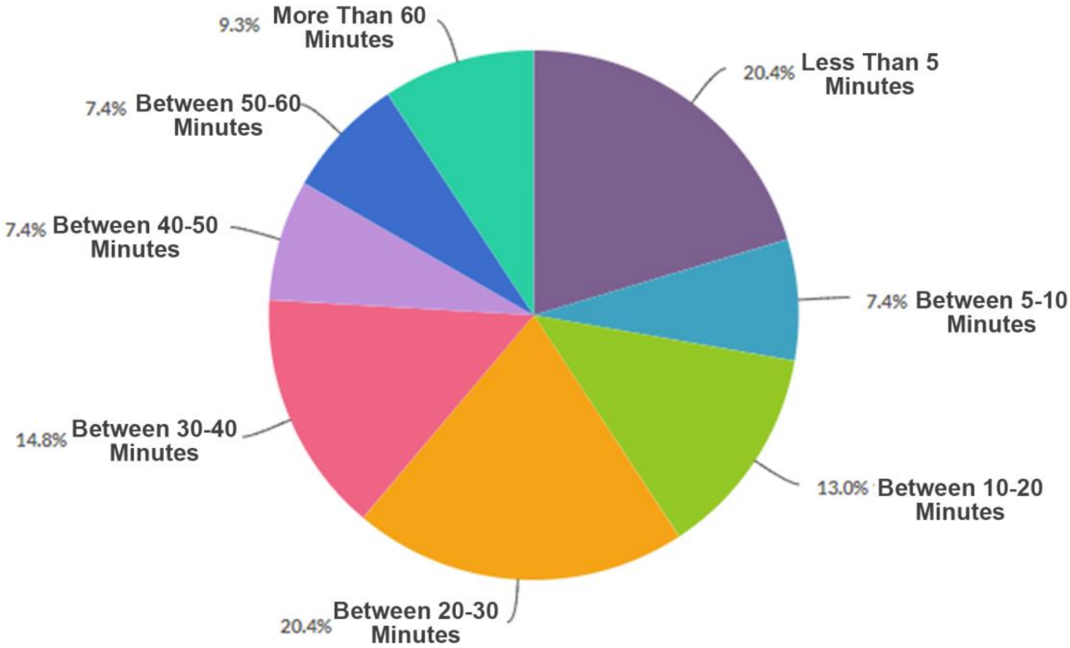


Figure 33 How long does it take for you to reach the point you want in Caferağa? (By Author)

Sixth data shows people’s view on pedestrian roads in Caferağa in matter of width and availability. (Figure 34) 76% of the people sees that they are not enough, it is followed by people thinking there are enough pedestrian roads by 22%, lastly this is followed by 2% with people that are not sure about it. Even though pedestrian road network has more walkability comparing to rest of Istanbul’s neighborhoods, this data can be interpreted as infrastructure not being able to meet excess human flow especially on busy days-e.g. holidays, weekends, sunny days.

Figure 34 Do you think that pedestrian roads in Caferağa are sufficient in terms of availabity and width? (By Author)

Seventh data shows if people have someone in their families or in their vicinity having difficulty walking or not. 56% of the people answered this question yes, and the remaining answered this question with no. (Figure 35) Eighth data follows seventh data, asking if same people that having difficulties walking also have problems in Caferağa or not. (Figure 36) This question is answered with yes with 51% of the people, this is followed by people who are not sure with 39% and this is followed by people saying no with 10%. Ninth data is asking people’s opinion, whether they have someone in their close vicinity having difficulties walking in general or not, if the pedestrian roads in Caferağa is suitable for those same people having walking disabilities/ difficulties. (Figure 37) This question is answered with “No, it’s not suitable” by 85%, this is followed by “Yes, it’s suitable by 9%, and this is followed by “I’m not sure” by 6%.

This data set can be interpreted as people with walking disabilities or people that having difficulty walking either with cane or a baby stroller do have problems, this is because of narrow pedestrian roads, non-flat surfaces- result of heavy pedestrian usage and poor workmanship- and non-alive objects being present on the pedestrian road like tables, trash bins and cars.

Figure 35 Do you have someone in your family or someone in your vicinity who is struggling to walk or have a baby stroller? (By Author)

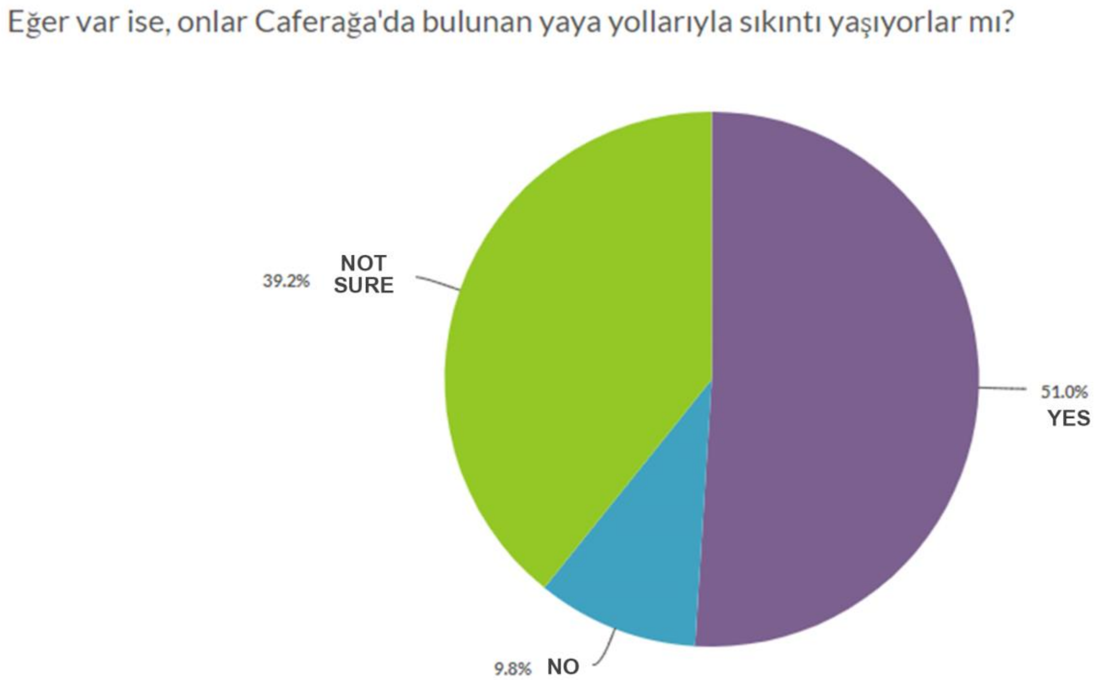


Figure 36 If so, are they having problems with pedestrian roads in Caferağa? (By Author)

Figure 37 Do you think that, it is easy for those who have difficulty walking to walk on pedestrian roads in Caferağa? (by author)

Tenth data shows percentage of riding bicycle in Caferağa (Figure 38). 89% of the people answered this with no and, other 11% answered this question with yes. This question is followed with eleventh data, the question of people's opinion of Caferağa's cycling roads, if they are adequate or not. To this question, 74% of the people answered with no and remaining 26% of the people answered saying "they are not sure". (Figure 39) None of the people surveyed with said that the cycling roads are adequate. In Figure 40, it can be seen that, because of the narrowness of the pedestrian road on Moda Avenue[8] and lack of cycling road signs, pedestrians tend to move on the both of the roads and this deters people using their bicycles in Caferağa or makes them ride on car road.

[8] Moda Avenue is the main avenue passes through Caferağa, starts from center of Kadıköy, ends at Coast Park of Caferağa. (Figure 41)

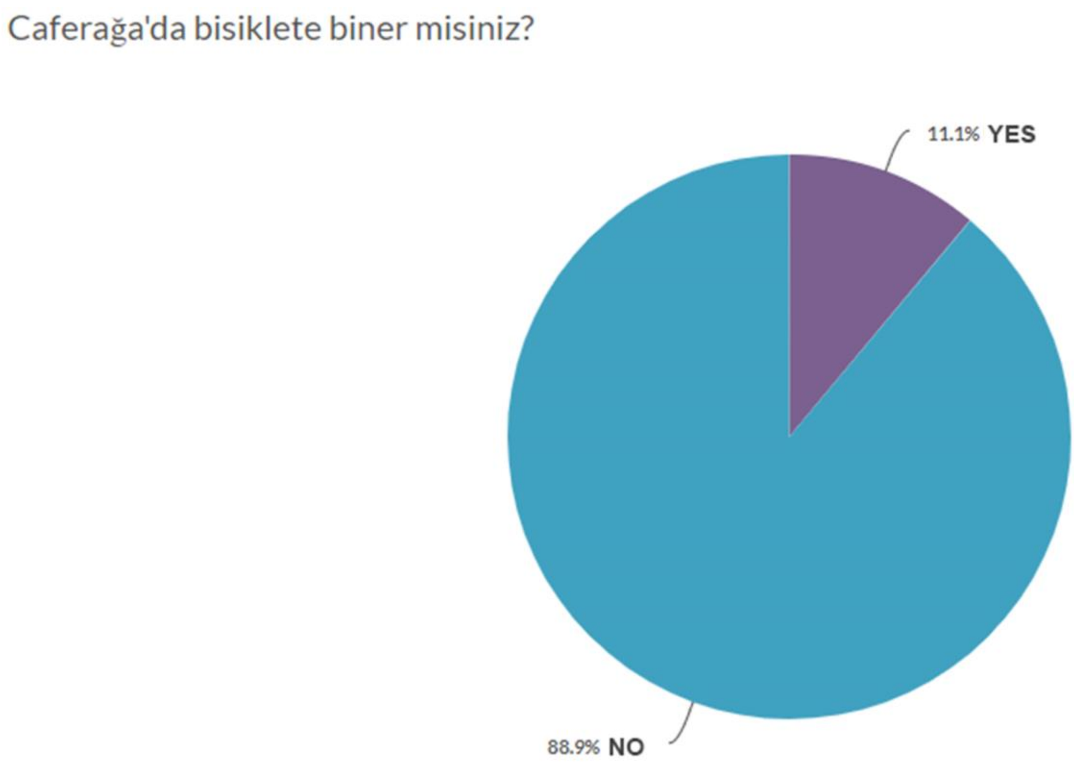


Figure 38 Do you ride bicycle in Caferağa? (By Author)

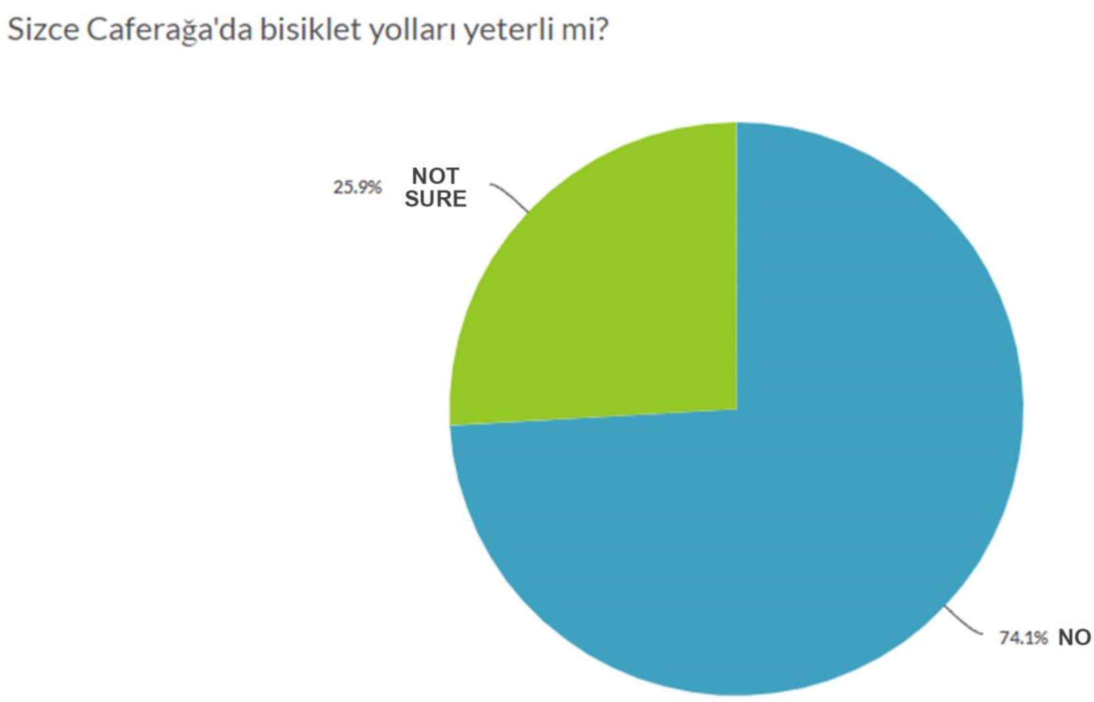


Figure 39 Do you think that bicycle roads are adequate in Caferağa? (By Author)

Figure 40 Lack of Bicycle Signs and Narrow Pedestrian Road (By Author)

Figure 41 Moda Avenue, shown with thick yellow line (Wikimapia)

Twelfth data shows the ages of the people that are coming to Caferağa (Figure 42). The data can be interpreted as wide variety of age groups are coming to enjoy their surroundings, but as the data shows 58% of the people more than half of the people are aged between 18 and 35.

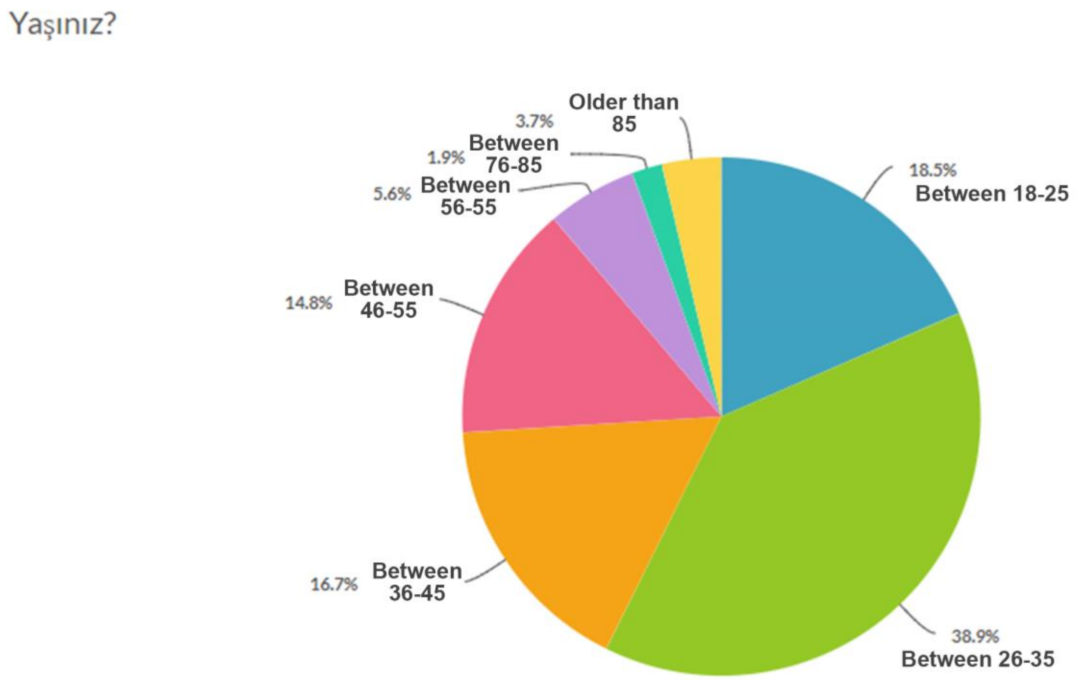


Figure 42 How old are you? (By Author)

And lastly, thirteenth data shows income levels of the people that are coming to Caferağa (Figure 43). This data can examined as 39% of the people surveyed with have less than 17.000 Tl yearly income, which can be classified as low income group.[9] While 41% of the people have a income between 17.000 TL and 60.000 TL, which can be classified as middle income group. And remaining 20% of the people coming here, have more than 60.000 TL of yearly income, which can be classified as high income group. This shows that Caferağa addresses wide variety of income levels, but mainly for middle income and low income, lastly for high income level of people.

[9] As of 10September 2017, the minimum wage in Türkiye is 16.848 TL.

Yıllık geliriniz nedir?

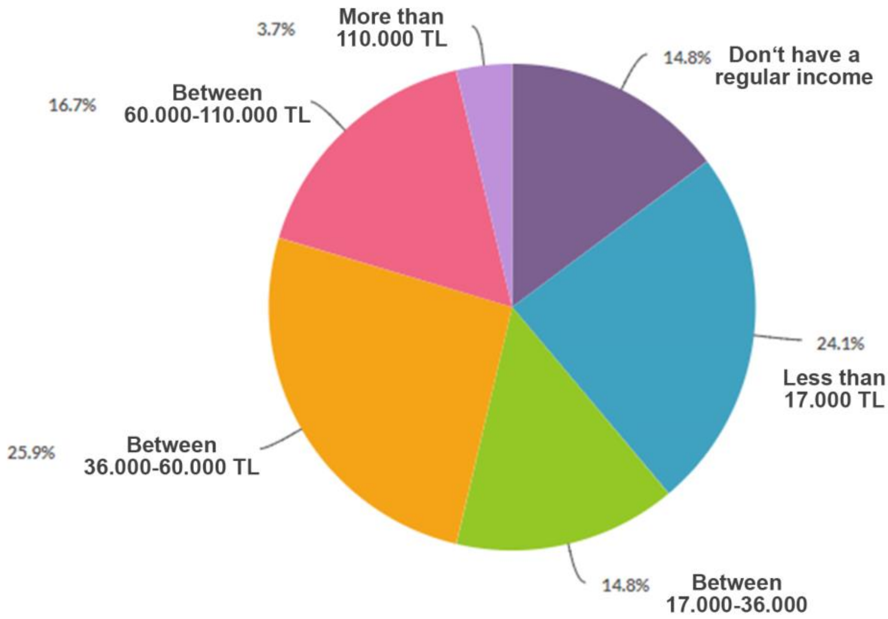


Figure 43 What is your yearly income? (By Author)

VIII.VI Proposals for Caferağa

Coming from spatial analysis and survey conducted within this thesis, multiple proposals are made. These proposals as follows:

- Since most of the pedestrians on the street are non-local people, infrastructure is not designed to meet that high number of people and therefore needs renewal to meet the numbers.
- Walking is the main mean of transport for the people coming here, therefore pedestrian roads should be widened.
- Because of elderly people and people with walking disabilities coming to Caferağa, there is a need to connect Kadıköy to Caferağa with modern public transport which people having no difficulty getting in, unlike the Nostalgic Moda Tram which has poor standards for elderly people and people with wheelchair and with baby strollers.
- Because of elderly people and people with disabilities coming to Caferağa pedestrian road should be accessible to all and revamped for this goal.
- Cafes and restaurants opening in Caferağa change the face of neighborhood, local municipality should not give permission to every potential shop owner and protect the rights of locals and local artisans against the “free market”.

- Pedestrian roads should be for pedestrians only, to ensure that physical barriers should be put blocking cars parking on them.
- In narrow pedestrian roads objects especially tables and chairs of cafes and restaurants that is blocking free movement should be removed.
- Pedestrian roads height should be same level with road there should ramps with appropriate angle for elderly and people with walking disabilities.
- If there's a work blocking the pedestrian road, either a part of the road or parking spot should be used as pedestrian road for the longevity of the work.
- Municipalities and law enforcements should be make sure that there are no cars parking on pedestrian crossings.
- There should be safe and adequate amount of bicycle roads and signs, separating it from car and pedestrian road, encouraging people to cycle.
- More parking spots to the neighborhood are not suggested, because of the reason that being a short-time solution, and make Caferağa even more car-busy in long-term.
- Community based solutions to specific problems should be made with cooperation of NGOs and local people, where everyone is invited.

VIII.VII Summary

The aim of the eighth chapter was to dissect Caferağa with on field analysis and with questions asked to pedestrians. With the analyzes' results, proposals for the neighborhood that have potential solving problems are offered. The main theme of the propositions is decided that the administrations that have been dealing with neighborhood, should invest more in pedestrian based solution, like public space and pedestrian road to reduce private car usage in the area, to solve the both vehicle and pedestrian traffic problem with coordination with NGOs and locals.

IX Conclusions

The research conducted within this thesis shows that Caferağa is an area consisting of transportation hub, the commercial area and a coastal park, there are lots human movement, both in vehicles and on foot, and this movement forces already limited infrastructure. Even though Caferağa is a neighborhood with planned grid system, some points of it are car dependent and this could be solved by making pedestrian road more comfortable and wider and by implementing a public transportation system for the area, prioritizing it on the roads.

As can be understood from the information that this thesis gathered, Caferağa has a big potential to be pedestrian focused neighborhood but there are lots of improvements to be made in order to reach that goal. Improving the experience of walking can make this neighborhood enjoyable both for local and non-local people, but while doing that, also other parts of Istanbul should be improved and be offered as alternative because Caferağa cannot carry all the weight of Istanbul.

City of Istanbul is a good example of urban environment which pedestrian behavior can be examined, with multiple data source of the different objects are present. But when a district like Kadıköy be tried to focus on, the data pool narrows down and for a neighborhood like Caferağa it even narrows down further. So, in order to analyze Caferağa, a data pool is created with survey questions and data grabbed either from first hand or from the internet.

Although a second part of the survey could be conducted to research on the proposals and simulation could be created based on same proposals, this thesis could not accomplish that goal.

Even though this thesis’s aimed to see if pedestrian network could be part of the public space, it did not go straight to that research question; instead it mainly focused of pedestrian network’s characteristics which are the basis of public space.

Appendix

1. Do you live in Caferağa?

o Yes o No

2. If you do, since when?

o I don't. o Please Specify

3. If you do live in Caferağa, where were you living before?

o Please Specify

4. If you are not living in Caferağa, where are you living?

o Please Specify

5. For which reasons are you coming to Caferağa?

o Walking o Eating/Drinking o Coast o Socializing o Green Areas o Shopping

o Other Reasons

6. If you live here, how often do you go out, if you don't, how often do you go come here?

o Every Day o Couple times a week o Once a week o Couple times a month

o Once a month o Couple times a year o I'm coming here for the first time.

7. Which vehicle type do you prefer to come to Caferağa or to reach the point you want in the neighborhood?

o Walking o Public Transport o Private Vehicle o Bicycle

8. How long does it take for you to reach the point you want in Caferağa?

o Less than 5 minutes o Between 5-10 minutes o Between 10-20 minutes

o Between 20-30 minutes o Between 30-40 minutes o Between 40-50 minutes

o Between 50-60 minutes o More than 60 minutes

9. What is your education level?

o Primary school graduate o High school graduate o Bachelor's Degree o Master's Degree

o Phd Degree

10. Which district are you working in?

o I don't work. o Please specify

11. Do you think that pedestrian roads in Caferağa are sufficient in terms of availabity and width?

o Yes o No o Not sure

12. Do you have someone in your family or someone in your vicinity who is struggling to walk or have a baby stroller?

o Yes o No

13. If so, are they having problems with pedestrian roads in Caferağa?

o Yes o No o Not sure

14. Do you think that, it is easy for those who have difficulty walking to walk on pedestrian roads in Caferağa?

o Yes o No o Not sure

15. Do you ride bicycle?

o Yes o No

16. If so, do you ride bicycle in Caferağa?

o Yes o No

17. Do you think that bicycle roads are adequate in Caferağa?

o Yes o No o Not sure

18. What is your gender?

o Female o Male

19. What is your yearly income?

o I don't have a regular income. o Less than 17.000 TL o Between 17.000-36.000 TL
o Between 36.000-60.000 TL o Between 60.000-110.000 TL o More than 110.000 TL

20. What is your age group?

o Between 18-25 o Between 26-35 o Between 36-45 o Between 46-55
o Between 56-65 o Between 66-75 o Between 76-85 o Older than 85

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