

INVESTIGATING THE MORPHOLOGICAL ASPECTS OF PUBLIC SPACES:
THE CASE OF ATAKUM COASTAL PROMENADE IN SAMSUN

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VOLKAN ER

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submitted by **VOLKAN ER** in partial fulfillment of the requirements for the degree of **Master of Science in Urban Design in City and Regional Planning Department, Middle East Technical University** by,

Prof. Dr. Halil Kalıpçılar

Dean, Graduate School of **Natural and Applied Sciences**

Prof. Dr. Çağatay Keskinok

Head of Department, **City and Regional Planning**

Prof. Dr. Müge Akkar Ercan

Supervisor, **City and Regional Planning, METU**

Examining Committee Members:

Assoc. Prof. Dr. Olgu Çalışkan

City and Regional Planning, METU

Prof. Dr. Müge Akkar Ercan

City and Regional Planning, METU

Assoc. Prof. Dr. Mustafa Murat Yüceşahin

Geography, Ankara Uni.

Date: 19.08.2019

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Surname: Volkan Er

Signature:

ABSTRACT

INVESTIGATING THE MORPHOLOGICAL ASPECTS OF PUBLIC SPACES: THE CASE OF ATAKUM COASTAL PROMENADE IN SAMSUN

Er, Volkan
Master of Science, Urban Design in City and Regional Planning
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The concept of public space is quite extensive topic. It is frequently discussed in urban planning and urban design. This research primarily investigates the concept of publicness of public spaces. In addition, comprehensive analysis studies indicate what are the urban elements that determine and limit this publicness. First, it basically describes what public space is, what roles it has and what kind of stages of change it has undergone. Moreover, by examining the differences between the concepts of space and publicness and their relations with each other, it examines the phenomenon of public space within the framework of urban design theory. For this reason, this study has been carried out mainly on the relationship between urban morphology and public spaces. Six urban morphological criteria are determined to investigate the publicness of public space different parts of the coastal road by considering the spatial characteristics of Atakum Coastal Road. With these basic variables, the publicness of public spaces at different focal points within the study area is investigated and a new model is developed and the findings are visualized. As a case study, the western urban development corridor of Samsun, Atakum Coastal Road, investigates the publicness of public spaces on the basis of determined morphological variables. This study examines the publicness of the three different characteristics public spaces of the Atakum Coastal Road. It also determines the publicness levels, problems and

potentials of these regions. Finally, as a result of this study, this thesis will provide a basis for increasing the publicity of the different public spaces of Atakum Coastal Road, and it will include suggestions at the level of policy and practical spatial arrangements for the design of public spaces.

Keywords: Publicness of Public Space, Publicness Indicators, Public Space Morphology, Urban Morphology Variables, Atakum Coastal Road

ÖZ

KAMUSAL ALANLARIN MORFOLOJİK YÖNLERİNİN İNCELENMESİ ATAKUM SAHİL YOLU ÖRNEĞİ, SAMSUN

Er, Volkan
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Kamusal mekan kavramı oldukça geniş bir kavram olup özellikle kentsel planlama ve kentsel tasarım konularında sıklıkla tartışılmaktadır. Bu tez çalışması öncelikle kamusal mekanların kamusallık kavramının ne demek olduğu araştırmaktadır. Ayrıca bu kamusallığı belirleyen ve sınırlandıran kentsel öğelerin neler olduğunu kapsamlı analiz çalışmaları belirtmektedir. İlk olarak, temelde kamusallığın ne olduğunu, ne gibi rollere sahip olduğunu ve ne tür değişim evreleri geçirdiğini anlatmaktadır. Ayrıca mekan ile kamusallık kavramları arasındaki farklılıklarını ve birbirleri ile ilişkilerini ortaya koyarak kentsel tasarım kuramı çerçevesinde kamusal mekan olgusunu incelemektedir. Bu sebepten dolayı temel olarak kent morfolojisi ile kamusal mekanların ilişkisi üzerine bir tez çalışması gerçekleştirilmiştir. Atakum Sahil Yolu'nun mekânsal özellikleri göz önüne alınarak sahil yolunun farklı bölgelerindeki kamusallıklarının araştırılması için altı kentsel morfoloji kriterleri belirlenmiştir. Bu temel değişkenler ile çalışma alanı içerisindeki farklı odak noktalarındaki kamusal alanların kamusallığı araştırılıp geliştirilen yeni bir model ile sonuç bulgular görselleştirilmiştir. Örnek alan araştırması olarak, Samsun'un batı kentsel gelişim koridoru Atakum Sahil Yolu'nu, belirlenen morfolojik değişkenler temelinde kamusal mekanların kamusallığını incelemektedir. Bu çalışma, Atakum Sahil Yolu'nun üç farklı özellikteki bölgelerinin kamusallığı incelemektedir. Ayrıca bu bölgelerin

kamusallık düzeylerini, problemlerini ve potansiyellerini belirlemektedir. Son olarak bütün bu çalışmanın sonucunda, bu tez, Atakum Sahil Yolu'nun farklı kamusal mekanların kamusalılığının artırılmasını zemin hazırlayacak ve kamusal mekanların tasarımlarına yönelik mekansal tavsiyeler tavsiyeler içermektedir.

Anahtar Kelimeler: Kamusal Mekanların Kamusalılığı, Kamusalılık Göstergeleri, Kamusal Mekan Morfolojisi, Kent Morfolojisi Değişkenleri, Atakum Sahil Yolu

To my dear family

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CHAPTER 1

INTRODUCTION

1.1. Research Problem Definition

Public spaces are the inevitable constituents of urban settlements (Akkar, 2007). These spaces are the places where everyday life of people, routine, ordinary or irregular and unusual activities take place. They are critical components of cities, enhancing quality of life and place through their level of inclusiveness and publicness (Akkar, 2005a; Akkar & Memlük, 2015). The more urban spaces are inclusive the more urban settlements are public for all (Akkar, 2005b). They are also significant for understanding the sense of the locality. The concept of sense of locality comes from classless stages for social relations, activators and catalysts of identity. Public spaces are spaces open to the whole society in principle (Neal, 2010a).

There are two basic attributes related to ideal public space in terms of opening to free actions of the society and being accessible. Nevertheless, those assigns have been in danger since the last three decades (Akkar Ercan, 2007). Major concerns of urban studies include the risks of public space like its neglect and disappearance. Starting from the 1960s to the end of 1970s, the decline of public spaces in cities was widely discussed. Two well-known scholars, Richard Sennett (1977) in his book titled 'The Fall of Public Man' and Jane Jacobs (1961) in her book titled 'The Death and Life of Great American Cities' argued that modernist cities experienced the severe decreasing public spaces. However, the recent studies on public space especially in post-industrial cities focus the diminishing publicness and inclusivity of public spaces (Akkar, 2005b; Akkar Ercan, 2007).

Cunningham states that both anonymity and openness are the most significant features of public spaces. The key is to create successfully accessible space for all is that they should be inclusive and offer equal opportunity to whole society by being open for all. Therefore, people should want to be in public spaces without fear, worry and discomfort. In fact, they should have the feeling of belonging to these places no matter variety of people different in age, class, occupation, and ethnicity (Cunningham, 2009; cited in Memlük, 2012, p.10).

When cities are morphologically studied, it is possible to reveal two essential kinds of urban space forms: modernist and traditional. Modernist urban space typically includes free standing pavilion buildings in landscape settings. On the contrary, traditional urban space includes buildings as constituent parts of urban blocks, where the blocks define and enclose external space (Carmona et al., 2003).

In addition to these morphological types of urban space system, the morphological structure of the public space network has changed in two significant ways during the modern period (Pope, 1996; Bentley, 1998; cited in Carmona et al., 2003, p.61). One of them is changing from buildings as dominant elements in urban blocks which define streets and squares to buildings as separate free standing pavilions standing in a formless space. The second one is changing from connected and integrated small scale street grids to road networks surrounding introverted and segregated settlements (Carmona et al., 2003).

There can be various factors behind the declining publicness of public space. Rapid urban growth, commercialization and commodification of public spaces have given rise to declining publicness of spaces. There are also some critical changes contributing to these declining with respect to changing economic structures, needs and preferences of the society and mobility (Neal, 2010b). In addition to these factors, management and provision policies may cause the declining publicness of open spaces because these policies leave off not only the public from the design and physical spaces but also management and development processes of public spaces instead of

producing inclusive spaces (Akkar, 2005a; 2005b; Neal, 2010a).

Public spaces have various dimensions in the sense of creating different publicness aspect of public space. Public spaces could be original if they practice their several functions. To be more precise, if public spaces strongly concentrate on their main roles, it cannot be in the service of the public interest. As a result, the key issue is managing roles and creating balance between various dimension of public spaces so that there can exist successful sense of space and publicness for all with having different variables. Moreover, urban planners, local authorities, architects and other regeneration enterprises have crucial responsibility for the broad civic functions of public spaces and not neglecting needs of society rather than not to allowing the symbolic, economic and aesthetic influences to dominate. Proper and legitimate public spaces can be succeeded when strategies about cities consist of not only balancing everyday society needs and interests but also civic functions of public space (Akkar Ercan, 2007).

1.2. Aims, Objectives and Research Questions

This research aims to understand the publicness of public spaces based on morphological characteristics of urban space in order to investigate variables of integrated public spaces network. For this reason, publicness of public spaces can be analyzed and evaluated to find out the ways of enriching and improving the publicness of them.

The primary research questions of thesis study are:

- What are the morphological dimensions of space?
- What does integrated public space mean?
- What are indicators of integrated public space?
- What kinds of role do public spaces have?
- How is character publicness of public identified?
- How is publicness of urban public space enhanced?

This study reviews the general literature about morphological analysis of public space and provide a hypothetical framework for this study so as to find to answer these questions by using the examination of Atakum Coastal Promenade in Samsun.

According to literature investigation on public spaces, these research study discusses that public space can be analyzed, evaluated and modelled with respect to some substantial morphological dimensions of space. There are six main principles; accessibility, permeability, continuity, complexity, enclosure and imageability. By using a case study method and examining Atakum Coastal Promenade, this research analyzes the changing publicness level in different characteristic zones of Atakum district.

Explaining public spaces in relation with morphological features of Atakum Coastal Promenade, this research aims to argue urban design strategies and the core dimensions to improve the publicness of Atakum Coastal Promenade.

1.3. The Thesis Structure

This research includes mainly seven chapters consisting of introduction and conclusion.

Chapter 2 includes the major discussion issues in the literature on urban space, public realm, public spaces and morphological indicators in general, historical change of the public space movements and the significance of the meaning of morphological characters of public spaces. It covers what urban space with respect to positive and negative space. After explaining urban spaces and morphology, it seeks to define what public space and public realm are and also to create link to understand the difference between space and place. Moreover, this chapter discuss the two main core public spaces; streets and squares. To understand the morphological dimension of public space, there are six main principles to investigate the how the public spaces integrated and they help to define the ways to analyse urban morphology of these spaces. Finally, it consists what kinds of existing model are there for modelling to show publicness of public space.

Chapter 3 covers defining new the public space model in order to assess six morphological dimensions of publicness of Atakum Coastal Promenade. Moreover, it covers clear information about six principles and how these dimensions are used in the model to demonstrate publicness of public space as regards the main logic behind this new model by figures. In addition, a detailed literature review is conducted on these six basic variables.

Chapter 4 defines the research method, containing method of public space analysis and data collection tools. This research constitutes single case study method and uses four data collection tools, which are morphological/spatial analyses, extensive survey, direct observations, interviews and questionnaires. After stating and reminding the key research questions, this chapter clarify relationship between the questionnaire questions and the public space indicators. They are used for the analysis of Atakum Coastal Promenade and how spatial analyses, survey, direct observations and interviews are conducted for the collection of data and the public space analyses.

Chapter 5 investigates the morphological and historical development of Atakum and in six sections by putting the case of this research in a wider context. It helps describing the both problems and dynamics of Atakum district and the coastal road at the city scale. First, it summarizes the historical development of Samsun. Second, it studies three major development corridors of the Samsun by examining the Atakum district in order to reveal the significance of Atakum regarding the city and its morphological development/formation. Third, this chapter examines the morphological development of Atakum Coastal Promenade, regarding significant buildings, landmarks and networks to understand different morphological dimensions of publicness of public space. Fourth part constitutes common features of research study in order to define character zones in Atakum Coastal Promenade. Last but not the least, it explains the reasons for selecting Atakum Coastal Promenade as the case study area of this research by investigating the crucial characteristics of the case study area.

Chapter 6 covers deep research on public space analysis of Atakum Coastal Promenade features by using the previously defined model. It also discusses different public space level of parts of coast road by the understanding not only strengths and weaknesses but also their positive and negative aspects. Moreover, not only quantitative but also qualitative data are used in this research in order to examine the publicness of public space regarding qualitative, quantitative and general outcome.

Chapter 7 includes the research findings, argues the advantages and disadvantages of the examined sites as regards the context of the city and the city center. It also proposes urban design policy recommendations for district character zones of Atakum Coastal Promenade regarding the publicness indicators. Finally, there is brief summary about future possibilities in terms of urban development and it seeks to answer two crucial spatial questions about Atakum Coastal Promenade: what can happen in the future if the current situation continues and what should be the future with the help of this thesis study.

CHAPTER 2

LITERATURE REVIEW

2.1. Urban Space

Urban space can be considered with regard positive and negative spaces.

2.1.1. Positive and Negative Space

Positive basically means comparatively enclosed space. Outdoor space has a certain and distinctive shape. Positive space can be conceivable, measured easily and has definite boundaries that we can imagine. It is impermanent, closed and static. Shape of positive space is as significant as the buildings surrounding it (Carmona et al., 2003, p.138).

Unlike positive space, negative space is shapeless space. For example, the rest from around buildings which are commonly considered as positive. It is inconceivable space. In fact, negative space has continuous and lacking in perceivable form and edges. It is not easy to imagine such space being filled with water as it is difficult to conceive of the space (Alexander et al., 1977, p. 518; Paterson, 1984, from Trancik, 1986, p. 60, cited in Carmona et al., 2003, p.138).

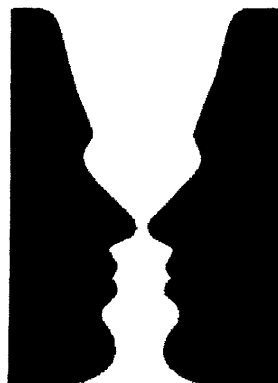


Figure 2.1. Positive and negative space (Carmona et al., 2003, p.138)

This diagram demonstrates the principle of figure-ground reversal. Depending on which is the figure and which is the ground, the image is either a vase or two faces. Positive and negative types of space can be differentiated by means of figure-ground reversal. Where outdoor spaces are negative, the buildings are outdoor the figure space is the ground. However, it is not possible to see the outdoor spaces as the buildings and figure as ground. On the other hand, where outdoor spaces are positive, figure-ground reversal is possible and the buildings can be considered as figure or ground (Carmona et al., 2003, p.138).

The differentiation between positive and negative spaces can also be considered with respect to their convexity. (Figure 2.2.).

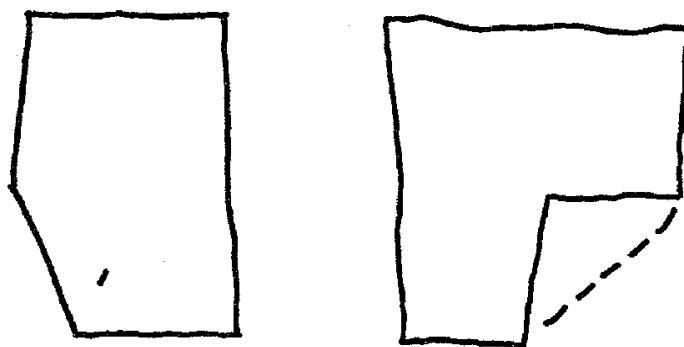


Figure 2.2. Positive and negative space (Carmona et al., 2003, p.138).

According to the Figure 2.2., a space is convex when a line joining any two points inside the space lies totally within the space. The irregular rectangular space (left) is convex and thus this space is positive. The L-shaped space (right) is not convex as a line cuts across the corner and thus goes outside the space. According to Alexander et al. (1977, p.518), positive spaces are enclosed at least to the extent that their areas seem bounded. Thus, the L-shaped space consists of two large virtual spaces. However, negative spaces are often so poorly defined that it may not be possible to identify their boundaries in comparison with positive space (Carmona et al., 2003, p.138).

2.1.2. Creating Positive Space

Three major space defining elements exist for all hard urban spaces in terms of the floor, surrounding structures and the imaginary sphere of the sky over head, which Zucker (1959, cited in Carmona et al., 2003, p.138) argues is usually perceived at three to four times the height of the tallest building. That's why, enclosure and spatial containment must be considered in not only plan but also vertical section (Carmona et al., 2003, pp.138-139).

Both the amount of enclosure and the resulting degree of containment partially relies on the ratio of the width of the space to the height of the enclosing walls. The most suitable viewing distance for a building is from a distance of about twice its height even though not all buildings are designed to be seen in a single view. Greater variety in visual experience can be created by spaces that limit views of the surrounding structures in different ways (Carmona et al., 2003, p.139).

The plan arrangement is significant of creating a sense of spatial containment. Booth (1983, cited in Carmona et al., 2003, p.139) discusses the quality of enclosure through a series of simple diagrams. When Figure 2.3. is taken into consideration, it can be said that a single building having simple form does not identify or create space, but is simply an object in space (Figure 2.3.a). The weakest definition of space exists when buildings are organized in a long row or sited indiscriminately with no effort to coordinate relationships between them (Figure 2.3.b). One of the simplest and most generally used means of achieving compositional order is the siting of buildings at right angles to one another. However, this easily becomes monotonous when overused (Figure 2.3.c). Building to building association can be enhanced by relating built forms and lines (Figure 2.3.d). To better contain it, facades could be overlapped, preventing or limiting views into or out of the space (Figure 2.3.e). If the building walls turn the corner, keeping views within the central space, there exists a chance to create a much stronger sensation of enclosure (Figure 2.3.f). Having a more varied and complex perimeter with indentations and projections in the building facades, the resulting space

can have a richer quality, with a number of hidden or partially disguised subspaces creating a sense of mystery or intrigue (Figure 2.3.g) (Carmona et al., 2003, p.139).

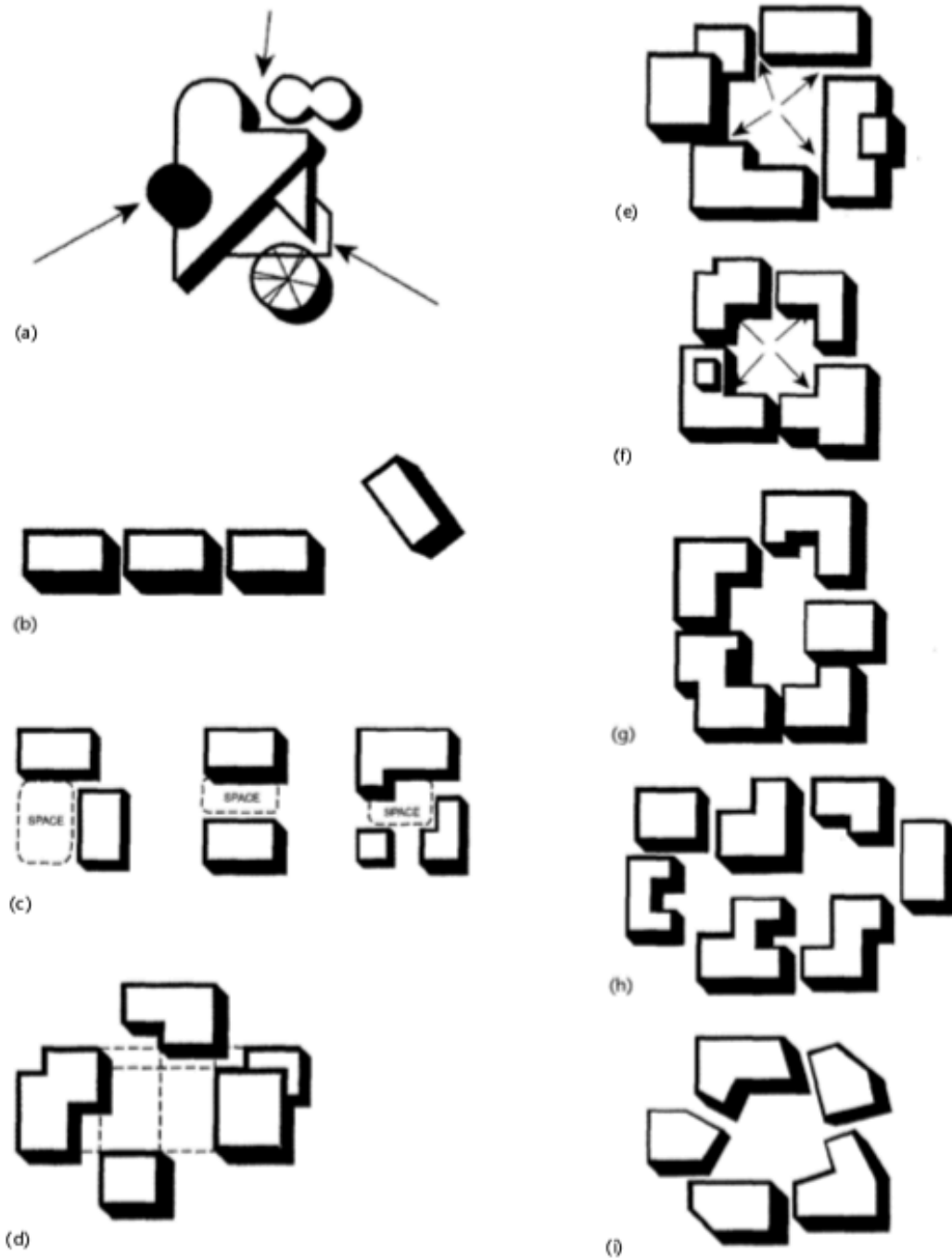


Figure 2.3. Principles of spatial containment and enclosure (Booth, 1983, cited in Carmona et al., 2003, p.140)

Nevertheless, there is a danger of it perceptually breaking apart into a disjointed series of separate spaces as a simple urban space becomes more complex (Figure 2.3.h). A significant key factor in creating a strong sense of enclosure is the design of openings into the space. Since the streets do not pass directly through the space, it has a strong sense of containment, which Booth (1983, p.142, cited in Carmona et al., 2003) refers to the windmill or whirling square, while Camillo Sitte (1889, cited in Carmona et al., 2003) refers to a turbine plan. This kinds of space not contributing to strengthening the enclosure of the spaces but also forcing pedestrians entering to experience the space (Figure 2.3.i) (Carmona et al., 2003, p.139).

2.1.3. Urban Morphology

Urban morphology basically means the shape of settlements and study of the form. Urban designers can be aware of both patterns of development and processes of change by the help of urban morphology studies. According to Conzen (1960, cited in Carmona et al., 2003, p.61), it can be said that not only building structures and considered land uses but also plot and street pattern can be the most important elements of urban morphology. He gives point the difference in stability of these elements. Buildings are generally resilient elements. The plot pattern changes over time by transforming individual plots from subdivided or amalgamated plots despite more enduring. The street plan prone to be the most enduring element. Stability of street plan derives from its being a capital asset and the troubles of organizing and implementing large scale change (Carmona et al., 2003, p.61).

The following sections explain Conzen's four morphological elements in detail. The varied patterns and environments that these form can be studied through what Caniggia terms or urban tissue (Caniggia and Maffei, 1979, 1984, cited in Carmona et al., 2003, p.61).

Land uses

Compared with the other major elements of urban morphology, land uses are comparatively temporary element. New uses generally result in redevelopment by

establishing of new buildings. This redevelopment causes plot amalgamation and changes in the street pattern. On the other hand, displaced land uses are more likely to swap over to existing buildings in older areas instead of redeveloping them (Carmona et al., 2003p.61).

Building structures

Plots can be considered as a recognizable progression or cycle of building development. This process transformed the medieval burgage plots, which started out as long, narrow fields laid out perpendicular to a street or circulation route in England (Conzen, 1960, cited in Carmona et al., 2003, p.62).

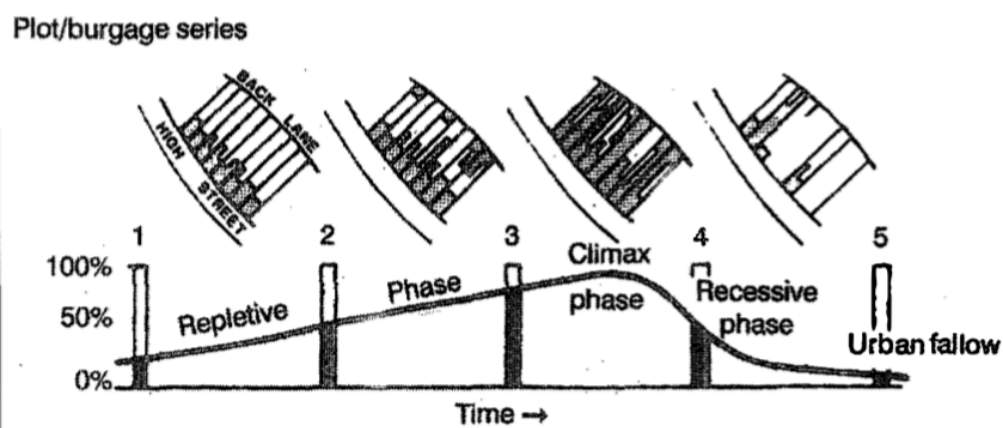


Figure 2.4. The Burgage Cycle (Larkham, 1996, p.33; cited in Carmona et al., 2003, p.63)

As the first part of a plot to be developed was that adjoining the street, development commonly began in perimeter block form. Loyer (1988, cited in Carmona et al., 2003, p.62) states similar development and urban intensification in eighteenth and nineteenth century Paris. Additionally, the cycle holds true for nineteenth century industrial towns and twentieth century suburbs (Whitehead, 1992, cited in Carmona et al., 2003, p.62). With no indigenous tradition of burgage plots, many New World countries witnessed an early focus on grids. Moudon (1986, cited in Carmona et al.,

2003, p.62) elaborates the evolution of block, building patterns and lot in San Francisco's Alamo Square neighbourhood.

Some buildings such as churches, cathedrals, public buildings, etc. will last longer than others for many different reasons with regards to the greater investment construction and ornamentation. Besides, such buildings may become particularly meaningful to residents and visitors and often symbolically represent the city. In the absence of conservation controls, other buildings can survive only if they are able to adapt to new or changing uses. This can be proof of the having a quality known as robustness. Buildings that endure over time often accommodate different uses and intensities of use during their lifetime (Carmona et al., 2003, p.63).

The plot pattern

Cadastral units (urban blocks) are generally divided into lots or plots. Back to back, each having a frontage onto the street and a shared boundary at the rear are the common examples of subdivisions of cadastral pattern. Lands can be served from the streets behind them and have a look at the main streets in front. Less common is land facing the main street at both ends (Carmona et al., 2003, p.63).

In some extraordinary situations, such as the construction of shopping centers in central areas, all urban blocks can be combined, the streets in between can be customized and built. Although plot and block amalgamation have eliminated most of the evidence of previous forms in many cities, especially in Europe, evidence of earlier patterns is based on this period. Since few of these plots have buildings belonging to this period, they show that the buildings change faster than the land models (Carmona et al., 2003, p.63).

The cadastral (street) pattern

The cadastral pattern means the layout of urban blocks. There can be exit not only the public space channels but also public space network between them. The space defines the space, and vice versa. The ground plan of most settlements can be considered as a

group of overlays from different ages. Twentieth century roads often cut through the street patterns of older areas, leaving fragmented townscapes. Streets and spaces patterns have usually advanced over hundreds of years. Ghosts of patterns and fragments from different period of time can be seen in the ground plans of several cities. To exemplify, the Roman street pattern is still evident in the plan of the city's central core in Florence (Carmona et al., 2003, pp. 63-64).

While patterns with fewer larger blocks have a coarse urban grain, cadastral patterns, which are part of many small street blocks, have a good urban grain. An area with smaller blocks has a significant advantage of a greater choice of routes and generally creates a more permeable environment than one with larger blocks. Furthermore, smaller blocks advance visual permeability and thus, they improve people's awareness of the choices available (Carmona et al., 2003, p.65).

A basic distinction in cadastral patterns can be made between regular or ideal grids characterized with regards to geometric regularity and organic or deformed grids characterized by apparent irregularity. The grid shape does not matter in terms of physical permeability, but deformities may influence possible movement by diminishing visual permeability (Carmona et al., 2003, p.65).

2.2. Public Space

2.2.1. What is Public Space?

The concept of public space has many known meanings. The most common and general one is that it contains all spaces that are open and accessible to all members of society. As this definition consist of many distinct ideas, it can be gainful to evaluate each part in more detail (Neal, 2010a, p.1).

Open spaces such as parks, streets and sidewalks are within the definition of public space. While public buildings, schools, libraries and courthouses are known as public spaces, their use may be restricted at certain times and in groups. Like public buildings, private buildings such as shopping malls or restaurants are considered

public spaces. The concepts of public space have expanded beyond real and physical spaces to include virtual locations such as internet chat rooms and social networking sites. In short, any physical space in which individuals and groups can interact with one another is a possible public space (Neal, 2010a, pp.1-2).

One of the most important character of public spaces is to open to everyone. In other words, the basic principle is openness. People can do what they want freely in these areas. Individuals are free to be not only active participants but also passive spectators. Addition to be open to everyone, it could be accessible. geographic mobility, barriers of language, physical and mental ability should not restrict the use of public space (Neal, 2010a, p.2).

Since public space is accessible and open to all users of the public, it plays a crucial role in democracy. Public space is a place where democracy and social participation can exist. Participation in democracy and social relationships can be happened at that space, which make individual to be citizens (Neal, 2010a, p.2).

According to Hannah Arendt, public realm can be described as both inconsistent sort of public space and a place for real political actions to maintain mutual goals. (Arendt, 1998: cited in Neal, 2010a, p.2).

Public spaces can be considered as the places where we live. There is important key question to clarify this issue; “How do public spaces organize our public, social lives? or How does public space work?” (Neal, 2010a, p.4).

To explain this in detail, there are three main fundamental perspectives in order to explain the public space working principle. To begin with, public space is taken into consideration as a civil order facilitator. Social network can be based on the interactions we have with friends in public spaces such as neighbourhoods, streets and local restaurants and this result in the close social bonds. Thus, this provides a sense of belonging and security (Neal, 2010a, pp.4-5).

Secondly, public space can contribute to sense of power and space resistance. While openness is a side of public space with regard definitional, none of them are ever fully open. Therefore, they can always result in disagreement between those who claim the space for their own use and those who feel they have been unjustly excluded (Neal, 2010a, p.5).

Finally, the public sphere is a place where we can go and show each other their identity in relation to art, theatre and performance opportunities. This expression can be realized by listening both actively and passively. It can be formal with the establishment of a public statue built by the city, and can also be informal by drawing chalk on the sidewalk. When these three are taken into consideration, it is seen that these perspectives on how the public space, which is brought together in various ways, prove the richness of these places in our social life (Neal, 2010a, p.5).

2.2.2. When and Where is Public Space?

It is needed to know when and where are public spaces as well as how public space works since the identify of public space nature alters over time. Public spaces have existed in different forms during human history but for better detection some particular kinds of public spaces have come to be associated with their own periods. Additionally, it can be helpful to evaluate how historical patterns of public space are reflected in the public spaces we met today (Neal, 2010a, p.5).

- Classical public space: The Agora
- Medieval public space: The Commons
- Renaissance public space: The Plaza
- Enlightenment public space: The Coffeehouse
- Nineteenth-century public space: The Street
- Twentieth-century public space: Public Accommodations
- Twenty-first-century public space

The Street as a Nineteenth-Century Public Space

Streets have always been considered a kind of public space. They also served the greatly beneficial purpose of moving from place to place. On the other hand, after innovations in technology with respect to the creation of pavements and sidewalks, gas and electricity lighting in the nineteenth and early twentieth centuries, street had a chance to become a social public space on its own (Neal, 2010a, p.9).

The narrow and old streets surrounded by buildings were dark and cold. It was difficult to regard these streets as social spaces because it did not attract enough people. However, Haussmann's boulevards allowed sunlight to shine between buildings. It also provided space for sidewalks and trees. Thus, the streets became having more attractive publicness. These design ideas were the basis for the subsequent development of public space in the form of the City in America (Neal, 2010a, p.9).

Although streetlights and sidewalks are prevalent today, the street stands a crucial sort of public space. Many cities still have broad boulevards that allow not only residents but also tourists to stroll, window-shop or see despite of the increasing high speed mobility and online retailing. Michigan closed two important urban blocks of a major street to automobile traffic by returning the roads with benches, gardens and fountains in 1959. Like Michigan sample, many other cities have followed this tendency and gained varying degrees of success in creating public spaces. Lastly, a street does not necessary to be a glorious boulevard to get a chance to be a crucial public space. Small, humble and important interventions on the street in a timely manner gives rise to constitute public spaces

Public Accommodations as a Twentieth-Century Public Space

Many forms of public space occurring in earlier ages are simple to recognize as public space. Parks and squares are places where people can gather and so many examples have been designed. Unlike them, shopping centers and coffee shops were established as places where people could spend more money than socializing.

However, some public spaces, are such expected parts of everyday life that they can be unnoticed as public spaces. By the help of Franklin Roosevelt's New Deal, the creation of many of these kinds of spaces were exist in America and the enormous public works program about public space planned to put people back to work following the Great Depression. The Work Projects Administration was in charge of the construction between 1935 to 1943. This could be one of the most important projects. However, this program led to the establishment of thousands of public restrooms in parks throughout the country. Although they do not provide space for chatting with old friends or having a grand parade, they provide open and accessible relaxation for all, making public life possible (Neal, 2010a, pp.9-10).

Twenty-First-Century Public Space

The general notion of public space still stands largely uncontested in spite of academic arguments. Not only accessible space undoubtedly offers many functions but also it is incorporated into a number of planning approaches by the help of understanding that public spaces are required to create a safe, viable and sustainable urban environment. Public space supporters claim that public space is related with adjacent property values, advanced physical activity and improved public health levels. (RWJF, 2010; cited in Nemeth & Schmidt, 2010, p.454).

Conversely, recent economic and political changes happened in both mid and late centuries have accelerate fluctuations in the way cities provide and manage public space. Most common ones like economic globalization, increased flexibility and mobility of capital and the technological advances on telecommunication. These changes result in transactions and communication to happen instantly and also the decreasing in state aid to cities because they have all forced business and political leaders to assume a promoter role in encouraging economic growth and expansion (Logan & Molotch, 1987: cited in Nemeth & Schmidt, 2010, p.454).

The conventional functions of parks, plazas and sidewalks are often objected by the help of new trends in public space provision and management. Many crucial trends

have appeared. Firstly, developers, property managers and local business associations customized progressively the provision and management of public and these privatized public spaces contain not only the traditional suburban shopping mall but also gated communities (Nemeth & Schmidt, 2010, pp.454-455).

Secondly, both designers and planner have placed emphasis on protecting public spaces and they claim that accessible spaces must be sensed as safe in order to satisfy their potential. Concept of security in public space keep a top concern for the majority of the public (Nemeth & Schmidt, 2010, p.455).

Third, the increased confidence publicly accessible spaces rather than private sector give rise to the creation of increasingly busy, heavily policed, highly programmed festival spaces, where the production of a consumption based environment exist (Sorkin, 1992; cited in Nemeth & Schmidt, 2010:455). People who contribute by purchasing goods and services are taken kindly to these spaces whereas people who fail to promote are discouraged and this latter group may arise from children or youth, homeless persons, or just the general (Turner, 2002, p. 543; cited in Nemeth & Schmidt, 2010, p.455).

Finally, there exist some argument whether public space should even be rationally and formally planned after individuals identify that some of the most vital and vibrant spaces are discovered by users. According to recent work, takin place against recent economic downturn, it can be summarized that marginal, vacant, underused or even abandoned spaces can be reused from the standpoint of recreational space, community gardens, temporary performance space or urban beaches (Stevens & Ambler, cited in Nemeth & Schmidt, 2010, p.455).

2.2.3. The Roles of Public Space

There are varied roles of public spaces as regards physical, ecological, psychological, social, political, economic, symbolic, and aesthetic roles. When we consider that the city comprises of public and private spaces, the public space becomes an inevitable

component of the city. Public spaces play a many different roles with regards streets, squares, plazas, market places and parks (Akkar, 2007, p.116).

Physical Role

The main social channels of the city are streets, boulevards and streets (Carr et al., 1992; Gehl, 1996; cited in Akkar, 2007, p.116). Objects are the means of movement between people and knowledge from one sector to another. These main social channels include communication facilities such as street and traffic signs, parking areas.

Additionally, they provide the daily needs of the public on the street by means of including street lights, signs etc. Public spaces ensure the places for a variety and diversity of activities. Public spaces organize different activities together as being places of various activates in terms of economic, social and political (Czarnowski, 1982; Moughtin, 1999; cited in Akkar, 2007, p.116)

According to Ellis, public spaces, especially streets, give us a chance to develop a diversity of open spaces with a range of uses from public to private (Ellis, 1978; cited in Akkar, 2007, p.116).

Ecological Role

Both their physical and ecological roles of public spaces are the inevitable components of cities. They bring about to develop healthy environments regarding ecology. They can not only enhance an unfavourable micro-climate but also increase air turbulence with the help of vegetation (Thompson, 1998; cited in Akkar, 2007, p.116).

Psychological Role

Public spaces lend the mental and psychological health of human beings in different forms (Akkar, 2007, pp.116-117). To illustrate, postoperative patients get better quickly and need fewer analgesics when they convalesce in a ward which has a view of trees according to some research proof (Thompson, 1998; cited in Akkar, 2007, p.117).

Another pro of the public spaces is that they supply the rhythm of relaxation and tension which is beneficial for the both psychological and mental health of human beings (Lynch, 1992; cited in Akkar, 2007, p.117). Public spaces are places where the places of relaxation are performed, which help people to deal with their daily life troubles (Carr et al., 1992; cited in Akkar, 2007, p.117).

Social Role

Other significant role of public spaces is social role. They bring together different groups of people regardless of their class, ethnic origin, gender and age, making it possible for them to intermingle with the help of welcoming everyone (Madanipour, 1995; cited in Akkar, 2007, p.117). For this reason, they assist the formation of the richest quality of a multi-class, multi-cultural, heterogeneous society (Carr et al., 1992; cited in Akkar, 2007, p.117). They carry out educational, informative and communicative roles to strengthen public life in other respect. There exists correlation between people who coming from different segments of the society and learn about each other in that spaces (Carr et al., 1992; Montgomery, 1997; cited in Akkar, 2007, p.117). This issue brings not only a significant step for the emergence of the social coherence among diverse groups but also the creation of community life (Walzer, 1986; Moughtin, 1999; cited in Akkar, 2007, p.117).

Political Role

When we continue with political roles of public spaces, they are substantially related to their contribution to democracy. Lynch and Rapoport state that public spaces are open to all and accommodate freely chosen and spontaneous action of people. These two features give them chance to enhance and promote democracy (Lynch, 1992 & Rapoport, 1977; cited in Akkar, 2007, p.117)

Economic Role

In addition to the political roles, another crucial role of public spaces is economic aspect. Public spaces have been always the major places where commercial activities have taken place throughout history (Gehl, 1996; cited in Akkar, 2007, p.118). As moving commercial activities to dedicated places in cities, commerce has kept its close relation to public spaces because of the advantage of this great coming and going (Lofland, 1973; cited in Akkar, 2007, p.118). Moreover, they can have an impact on the economic value of urban land when they are kept in good condition. Currently, public spaces are increasingly considered as a crucial means to add value to speculative developments due to their economic value generator role (Thompson, 1998; cited in Akkar, 2007, p.118).

The main public spaces of a city include streets and their sidewalks, which are its most vital organs. When we first imagine and think the cities, the first thing that comes to our minds will be the streets. The more cities look interesting and dull; the more streets look interesting and dull. (Jacobs, 1961, 29; cited in Akkar, 2007, p.118).

Symbolic Role

Montgomery (1997; cited in Akkar, 2007, pp.118-119) states that public spaces might include elements which appeal to or represent higher order values such as symbolic or sacred meeting places. They used for religious purposes are the foremost examples, and thus public spaces become symbols for a group of people or a society because of representing cultural, historical, religious or other social and political values for them.

According to Loukaitou-Sideris (1988; cited in Akkar, 2007, p.119), public spaces give rise to the creation of the sense of continuity for a group, or a society by the help of their symbolic meanings. Therefore, these feelings connect the individual members of the group or society together (Lynch, 1992; Moughtin, 1999; cited in Akkar, 2007, p.119). As a result, they have become the place in accordance with the major where to work, locating for the major public expenditure and the greatest civic art (Moughtin, 1999; cited in Akkar, 2007, p.119).

Aesthetic Role

Another important role of public space is aesthetic role from the point of function to beautify the city (Carr et. al., 1992; cited in Akkar, 2007, p.119). They advance the aesthetic quality of the city (Carr et al., 1992; Thompson, 1998; cited in Akkar, 2007, p.119).

In short, public spaces are places in human being service in the way of their physical, ecological, psychological, social, political, economic, symbolic and aesthetic roles. All of these roles help them to be inevitable components for societies and cities (Akkar, 2007, p.119).

2.3. Space and People

An understanding of the relationship between people (society) and their environment (space) is crucial in urban design. The first idea to be conceived here is architectural or environmental determinism. The physical environment has a determining influence on human behavior. By ignoring the role of human agency, it assumes that environment-people interaction is a one-way process. However, people are not passive and they influence and change the environment because it influences and changes them, and thus it is a two-way process. While physical factors are neither the exclusive nor necessarily the dominant influence on behavior, environmental opportunities affect what people can and cannot do. For example, a window in an otherwise solid wall allows one to see out, while a continuous wall does not afford that opportunity. As a result, human behavior is inherently situational (Carmona et al., 2003, p.106).

In addition to determinism, there are two other significant viewpoints on the degree of environmental influence on people's actions with regards to environmental possibilism (i.e. people choose among the environmental opportunities available to them) and environmental probabilism (i.e. in a given physical setting some choices are more likely than others) (Porteous, 1977; Bell et al., 1990 cited in Carmona et al., 2003, p.106).

The choices made in any particular setting rely on each individual's own situation and characteristics like their ego, personality, goals and values, available resources, past experiences, life stage, etc. These characteristics are hard wired in an analogy with computer science. In spite of the seemingly individualistic and complex demands of human values, goals and aspirations, the existence of an overarching hierarchy of human needs has been proposed by several authors. Such hierarchies often follow the original work on human motivation by Maslow (1968, cited in Carmona et al., 2003, p.107), who identified a five-stage hierarchy of basic human needs:

- physiological needs: for warmth and comfort;
- safety and security needs: to feel safe from harm;
- affiliation needs: to belong - to a community, for example;
- esteem needs: to feel valued by others;
- self-actualization needs: for artistic expression and fulfilment.

The most basic physiological needs must be satisfied before progress can be made to the higher order ones like self-actualization but the different needs are related in a complex series of inter-linked relationships although there is a hierarchy. Moreover, it might be argued that the true test of a civilized society is one that attempts to meet all the human needs (Carmona et al., 2003, p.107).

Lawson (2001, pp.2-3; cited in Carmona et al., 2003, p.108) states that people collectively inhabiting an area tend to make rules governing their use of space. Although some rules are a matter of local social and cultural convention, many reflect deep seated needs of the psyche and characteristics of human beings.

In this context, Lefebvre (1991, p.26) states that social space is a social product. This expression refers to the relationship between space and society. As a result of a thought and action, this result has emerged. One of the most essential ways of analysing society is the social sphere because the elements that make up society are the product of the social actions of individuals and societies. According to Lefebvre (1976, p.186),

space is not only the place where social relations take place but also the place that supports social relations.

Moreover, Lefebvre made four basic inferences about this issue. Its first inference is about natural space, and it says that although natural areas do not dissolve completely, they disappear and become increasingly decorative in cities. Everybody wants to protect the nature, but at the same time, they harm the nature while using it. It only becomes a raw material that constitutes the special field of the productive forces of various social systems (Lefebvre, 1991, p.30-31).

The second inference is about each society creating its own space. Ancient cities were not just a collection of people and objects in space. It also had its own spatial practice in the world and formed its own appropriate area (Lefebvre, 1991, p.31). In addition, a society that is intended to be planned can never exist without certain favourable conditions. According to Lefebvre (1991), the reason behind the failure of the Soviet was the Soviet urban planning approach, which could not produce social space. For this reason, according to his statement, the Sovereign planners made many mistakes in this regard. Accordingly, every society needs its own space and therefore produces its own space.

The third inference of (Lefebvre, 1991, pp.36-37) is that If we accept the space as a product, we expect the space to create the production process of our knowledge and hope that it will reveal it. The basic logic should be the production of space instead of what is in the space. Whether it leaves traces from the past or not, it should be replicated as needed in the present. (Lefebvre, 1991, pp.36-37).

The final inference is that when there is a production, then there is history as an important concept. Lefebvre (1991, pp. 46-47) claims that the code of the spatial arrangement of the renaissance city began to emerge in the ancient period, and thus the place was produced not only in time but also through changes. As a result, this space is planned and organized according to these changes.

However, recent years have witnessed a decline in the apparent civility of public space and in respectful behaviour towards other space users. Designers can attempt to manipulate functional and cognitive cues to develop the probability of better behaviour in public spaces. On the other hand, there are limits to what they can achieve. Nevertheless, many urban design practitioners are optimistic about the probability of particular behaviours in certain environments and plan good design as a means to achieve certain desirable outcomes (Carmona et al., 2003, p.108-109).

Despite needing to counter pessimistic views and attitudes, overoptimistic claims by urban designers invite accusations of environmental determinism. For example, there are claims that if houses have front porches, then residents will be more neighbourly and eventually form communities. As a matter of fact, both optimistic and pessimistic views stray into architectural determinism. If public benches are provided, vagrants may sleep on them, but this is not inevitable. If they are not provided, the problem is avoided at the expense of people not having somewhere to sit down. As urban design should be an activity that gives people chance to choose rather than denying their choice. It is preferable to provide the opportunity, and then to manage its use (Carmona et al., 2003, p.109).

2.4. Public Realm

Frequently entreated in discussions of urban design, the public realm and the related and overlapping concept of public life need further discussion. Public realm has physical (space) and social (activity) dimensions. The physical public realm means the spaces and settings, publicly and privately owned, that support and facilitate public life and social interaction. The activities and events existing in those spaces and settings can be termed the sociocultural public realm (Carmona et al., 2003, p.109).

2.4.1. Function of Public Realm

Described as the sites and settings of public life, and including some notion of public space, the public realm ideally functions (Loukaitou-Sideris and Banerjee, 1998, p.175; cited in (Carmona et al., 2003, p.109):

- a forum for political action and representation; as a neutral or common ground for social interaction, intermingling, and communication
- as a stage for social learning, personal development, and information exchange

As a political stage, the public realm (democratic public realm) involves and symbolizes activities to citizenship and the existence of a civil society (Carmona et al., 2003p.109).

2.4.2. Decline of Public Realm

Many commentators have realized the declining importance of the public realm, attributed in part to the reduced availability of public space and public life. Ellin (1996, p.149; cited in Carmona et al., 2003, p.110) claims that many social and civic functions that traditionally happened in public spaces have been transferred to private realms like leisure activities, entertainment, gaining information and consumption. Activities that were available in collective and public forms have progressively become available in individualized and private forms. However, the use of public space has been challenged by various developments and changes such as increased personal mobility in terms of initially through the car and subsequently through the internet (Carmona et al., 2003p.110).

The disengagement from public space and public facilities has been both a cause and a consequence of the trend towards privatization. In *The Fall of Public Man*, for example, Sennett (1977, cited in Carmona et al., 2003, p.110) documented the social, political and economic factors leading to the privatization of people's lives and the end of public culture. Likewise, Ellin (1999, pp.167-168; cited in Carmona et al., 2003, p.110) observed that there has been a corresponding decline in meaningful space and a desire to control one's space since the public realm has grown increasingly impoverished. According to Ellin, the privatization impulse is summarized by the appropriation of public space by private agencies. For example, the inward-turning shopping mall which has abandoned the central city for the suburbs and which turns its back entirely on its surroundings with its fortress like exterior surrounded by a moat

like car park. Monitoring the process of privatizing and selling off standardized infrastructural systems, Graham (2001, p.365; cited in Carmona et al., 2003, p.111) propose that this is most familiar and widespread in the domain of public streets: “The municipally- controlled street systems, that once acted as effective monopolies of the public realm in many cities, are being paralleled by the growth of a set of shadow, privatized street spaces” (Carmona et al., 2003, pp.110-111).

2.4.3. Physical and Sociocultural Public Realm

In a broad sense, the public realm includes all the spaces accessible to and used by the public, including:

- External Public Space: pieces of land lie between private landholdings. These are public squares, streets, highways, parks, parking lots, etc. in urban areas, and in rural areas they are stretches of coastline, forests, lakes, rivers, etc. Accessible to all, these spaces generate public space in its purest form.
- Internal Public Space: public institutions such as libraries, museums, town halls, etc., plus public transport facilities such as train or bus stations, airports, etc. (Carmona et al., 2003, p.111).
- External and Internal Quasi-Public Space: places such as university campuses, sports grounds, restaurants, cinemas, shopping malls, also form part of the public realm despite being legally private. Beside, this category contains what are commonly described as privatized (often but not exclusively external) public spaces. As the owners and operators of all these spaces maintain rights to regulate access and behaviour there, they are only nominally public. Sorkin (1992; cited in Carmona et al., 2003, p.111) refers to this pejoratively as pseudo- public space.

As public space, quasi-public space, and the boundary between them, are often difficult to define, Banerjee (2001, p.19; cited in Carmona et al., 2003, p.114) suggests that urban designers should focus on the broader concept of public life rather than the narrower one of physical public spaces. He argues that increasingly public life is

flourishing in private places in terms of not only just in corporate theme parks but also in small businesses such as coffee shops, bookstores and other such third places while planners have traditionally associated it with public spaces (Banerjee, 2001, pp. 19-20, cited in Carmona et al., 2003, p.114). Thus, the concern in urban design is generally with social space (i.e. spaces that support, enable or facilitate social and cultural interaction and public life) regardless of whether it is genuinely public space or private space that is publicly accessible (Carmona et al., 2003, p.114).

Public life can be categorized into two interrelated types as a formal and informal. The most interest in urban design is informal public life, which happens beyond the realm of formal institutions and entails choice. Many parts of the public realm are arbitrary environments, which people choose whether or not to use. For instance, there are often alternative routes for getting from one point to another with choice made on interrelated grounds of convenience, interest, delight, safety, etc. Oldenburg's concept of the third place ensures a useful way of enhancing understanding of informal public life and its relation to the public realm (Carmona et al., 2003, p.114).

2.5. Integrated Public Space (Public Space Network)

The cadastral pattern constitutes an urban area's public space network and is a key urban element in the broader concept of the capital web. Like displaying and providing access to the public face of private property, the public space network accommodates the overlapping realms of movement space and social space. This social space is a constituent part of the public realm (Carmona et al., 2003, p.67).

Pedestrian movement is compatible with the notion of streets as social space. In fact, there is a symbiotic relationship between pedestrian movement and interpersonal transactions. However, car-based movement is pure circulation. Opportunities for most forms of social interaction and exchange only exist once the car has been parked -prompting a focus on destinations instead of journeys (Carmona et al., 2003, p.67).

The pattern of blocks, the public space network, basic infrastructure and any other relatively permanent elements of an urban area constitute the above ground, visible

elements of David Crane's capital web. According to Buchanan (1988a, p. 33; cited in Carmona et al., 2003, p.67), the capital web structures;

- configures a city, its land uses and land values
- the density of developments and the intensity of their use
- the way the citizens move through, see and remember the city
- encounter their fellow citizens

Urban designers need to be conscious of patterns of stability within the change when they work within the capital web, which is differentiate between elements which either do not change or change slowly and those that change over much shorter periods of time (Carmona et al., 2003, p.67).

2.6. Streets and Squares

Although urban spaces can vary with regards to different sizes and shapes, there are two main types: streets (roads, paths, avenues, lanes, boulevards, alleys, etc.) and squares (plazas, circuses, places, courts, etc.). In principle, streets are dynamic spaces with a sense of movement. Contrary to streets, squares are static spaces with less sense of movement. Width-to-length ratios on plan of greater than 1:3 begin to suggest dynamic movement as one axis begins to dominate. This ratio clarifies the upper limit for the proportions of a square and, by inference, the lower limit for a street (Figure 2.5) (Carmona et al., 2003, p.141).

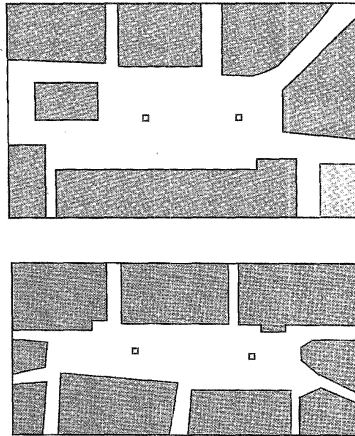


Figure 2.5. Width The Length Ratios Helps Distinguish Between Streets Spaces and Square Spaces (Carmona et al., 2003, p.141)

In addition to types, streets and squares can be characterized as either formal or informal (Figure 2.6). Formal spaces basically have a strong sense of enclosure. In fact, orderly floorscape and arrangement of street furniture; surrounding buildings that increase the formality; and often a symmetrical layout. On the contrary, informal squares typically have a more relaxed character, a wide variety of surrounding architecture and an asymmetric layout. Neither is necessarily more appropriate than the other. Hence, a definite geometrical discipline to a space is less ambiguous. To exemplify, on sites surrounding such spaces, developers and their designers are more likely to respect, or be required to respect, the boundary (Carmona et al., 2003, p.141).

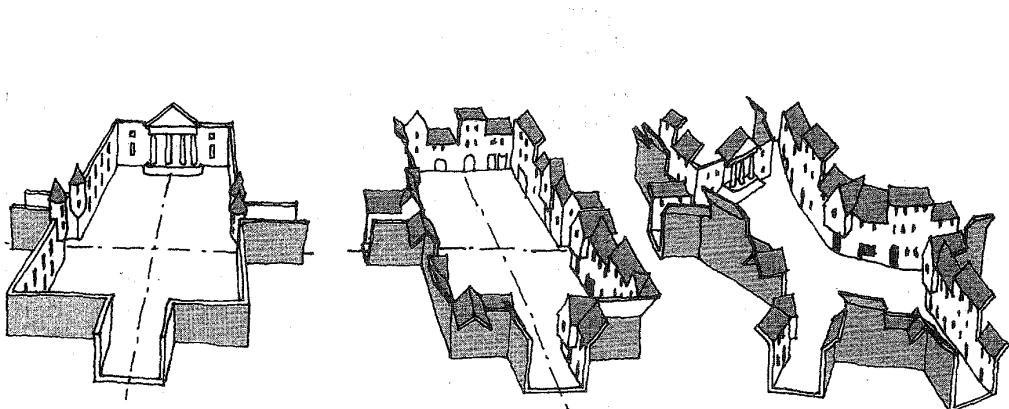


Figure 2.6. Formal and informal spaces (EPOA, 1997, p.24; cited in Carmona et al., 2003, p.142)

The street has two fundamental qualities. The first one is as a route of communication and the second one is as a site of transaction. The positioning of these functions varies at different scales and in different technical forms depending upon whether. For instance, the street is a back street, a main thoroughfare or an urban motorway. The street forms the primary structural network of the city. This primary network supports and make possible the multitude of private communicative and cognitive networks of the citizens. Lynch (1960), for instance, stated that the path was the most important organizing principle of most individuals' mental maps. In the modern city the street network has been altered by the appearing of the car, the tram and the underground railway. These have both allowed the city to expand and, for areas within the city, to become associated with particular land uses. These different forms of transportation can be considered as forming hybrids of the street network (Marion Roberts, Tony Lloyd-Jones, Bill Erickson & Stephen Nice, 1999, p.55).

According to opinion of Barlas (2006), definition of streets is misleading even though the street is generally defined as a paved and delimited surface outlined by buildings. He described why this definition is misleading in three ways. Firstly, one should not consider every paved surface as a street. Secondly, this definition put focus only on the surface disregarding the edifices that formally and conceptually define it. Finally, they do not show regard to the functions the street historically carries (Barlas, 2006, p.69).

As being not only a paved surface, it must be regarded as a three dimensional urban component together with the artifices that delimit its surface and it does not necessarily lead anywhere. With the all these comments and information, it can be said that the street is more of a delimited space rather than a continuous channel for transportation (Barlas, 2006, p.70).

Varied kinds of spaces can provide for many different kinds of needs as well as one kind of space can provide for more than one need. The streets consist a wide range of spaces affording a wide range of behaviour. Whereas stronger needs are commonly

provided for in private spaces, weaker needs are provided for in intermediary and public spaces (Barlas, 2006, p.81)

Goffman claims that face to face interactions, including social occasions such as social gatherings, gain meaning in public spaces as people can better sense the conditions of *copresence* (Goffman, 1963, p.17-18; cited in Barlas, 2006, p.78).

Streets are considered as the clearest urban elements. If topic which are mentioned above is regarded, it can be easily understand that there is richness of variety of interactions along with users. In this context, each individual physical component of the street is a behaviour setting, affording a large number of patterns of behaviour. The main factor of public nature of street in engendering the variety and dynamism of social encounters found in streets (Barlas, 2006, p.78).

To conclude, there is a crucial, dynamic and mutual relationship among human psychology, socialization and street. One of the most general picture refers to as built environment. This issue can be shortly explained as following (Barlas, 2006, pp.79-80):

- Street are flexible and takes it shape according to basic archetypal derives.
- Street can perform like symbolic functions, albeit subconsciously as it is deliberate creation of the collective unconscious.
- Process of individualization cannot be imagined apart from process of socialization.
- Physical/spatial characteristic of street might be manifest changes in different cultures in spite of same national attributes.
- Streets can remain a meaningful place if and only if its physical structure advanced the development of the self.
- Street is a combination of an extensive series of signs

2.7. Existing Models for Analysing Publicness

There are five main crucial analysing models of publicness of public spaces which have been developed so far in terms of related dimensions;

- The Cobweb Model (Van Melik, Van Aalst and Van Weesep, 2007)
- Linear Method and The Tri-Axial Model (Nemeth and Schmidt, 2007, 2011a)
- The Star Model (Varna and Tiesdell, 2010)
- OMAI Model (Langstraat and Van Melik, 2013)

2.7.1.1. The Cobweb Model

The cobweb model was defined to investigate whether public space is secured or themed public space. This model classifies public space as themed space by the help of emphasising on both urban entertainment and fantasy and secured space as regards advancing safety and reducing feelings of fear. This model can be considered as two aspects of the same tendency towards greater control over public space. This model is an tool was developed with scaling techniques to compare public spaces on a number of criteria by a simple diagram. Every indicator has three levels of intensity: low (L), medium (M) and high (H). The connected rankings of lines were formatting the final hexagon shape (Van Melik, Van Aalst, and Van Weesep, 2007, p.33-34).

The variables of a secured public space are surveillance, restraints on loitering and regulation and the variables of themed public space are events, fun shopping, pavement cafes

In addition, the extent to which these dimensions emerge in real-life public spaces can be identified and classified on the basis of observations, literature review, analysis of policy documents, and the like. That's why, the ratings can be represented by six-dimensional diagrams. The outer ring of the diagram shows an extreme degree on a scale of one to three (low, medium and high) for each size. If the coverage area in the upper half of the apartment is full (sizes 1 to 3), a certain location becomes such a secure public space. The more full it is in the lower half of the scope (sizes 4-6), the

more can be classified as a themed public space. The following section describes the diagrams obtained from case studies conducted in the city of Rotterdam (Van Melik, Van Aalst and Van Weesep, 2007, p.33).

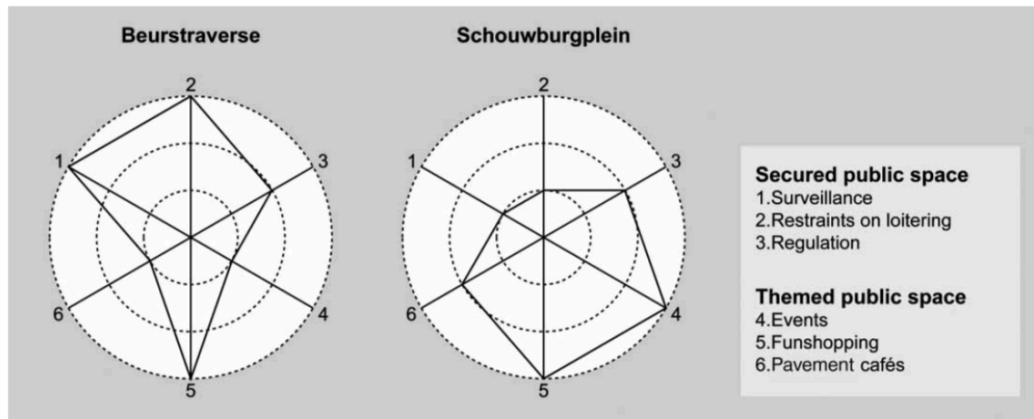


Figure 2.7. Six-dimensional profiles of the Beurstraverse and Schouwburgplein as secured (upper half) or themed (lower half) public space (Van Melik, Van Aalst and Van Weesep, 2007,)

Secured Public Space

- **1. Surveillance:** L. No CCTV, M. CCTV is installed, footage is recorded and H. CCTV is installed, footage is watched live
- **2. Restraints on loitering:** L. Benches are present, public space can be fenced off, M. Benches are present public space cannot be fenced off and H. No benches available
- **3. Regulation:** L. Arranged by regular local ordinance, enforced by local police, M. Arranged by regular local ordinance, enforced by local police and private security and H. Arranged by special ordinance, enforced by private security

Themed Public Space

- **4. Events:** L. No organized events, M. Events are organized, no permanent facilities available and H. Events are organized, permanent facilities available
- **5. Funshopping:** L. No shops present, M. Majority of shops of ‘run’ nature (i.e. convenience stores for groceries or appliances) and H. Majority of shops of ‘fun’ nature (i.e. stores with discretionary shopping goods)
- **6. Pavement café’s:** L. No pavement café’s present, M. Present, partial coverage of terraces (10 – 50 per cent of total surface) and H. Present, high coverage of terraces (>50 per cent of total surface)

This model was applied to two central public spaces of Rotherdam. The first one is Beurstraverse having highly secured and the other is Schouwburgplein having highly themed (Van Melik, Van Aalst, and Van Weesep, 2007, pp.35-39).

2.7.1.2. Linear Method and The Tri-Axal Model Model

Linear Method

Two relevant studies were made in 2007 and 2011. First one is a simpler method for measuring the security of publicly accessible spaces. On the other hand, the second is more complex method for modelling and measuring publicness (Németh and Schmidt, 2011).

To begin with first model, it is linear method basically grouping the design tools in terms of features encouraging and discouraging or controlling. Four crucial variables are generated investigate publicness of a public space in terms of laws and rules governing a space, surveillance and policing present in the space, design and image, access restrictions and territorial separation to control space.

As a result, ten encouraging and discouraging variables are listed and grouped under these four basic dimensions. Ten features encouraging uses are signing announcing public space, at a commercial building, restroom available, diversity of seating types,

various microclimates, lighting to encourage night-time use, small-scale food consumption, art, cultural, or visual enhancement, entrance accessibility and orientation accessibility. On the other side, ten features discouraging uses are visible sets of rules posted, constrained hours of operation, subjectivity or judgment rules posted, areas of restricted or conditional use, in business improvement district, presence of sponsor or advertisement, security cameras, security personnel, secondary security personnel and designing to imply appropriate use.

Then, each indicator is ranked as 0, 1 or 2 adding up totally 0-20 points. The overall index score for a given space should be calculated by subtracting the total score for all variables indicating control from the total score for all variables indicating free use. The lower the score, both on individual variables and overall, the more controlled the space is, and the higher the score, the freer the use of the space. The highest possible overall score is a 20 (least controlled), the lowest is a -20 (very controlled); zero would be a perfectly neutral score (Németh and Schmidt, 2007).

The Tri-Axial Model Model

If we continued with the second model, it can be said that linear method is altered with a tri-axial model. The axes demonstrate ownership, use/users and management, but this time the representation is graphical rather than arithmetical. Upper side represent more public situations where the lower side represents the more private. Because their articles were about the privatization of public spaces in New York City, they compared publicly owned parks with the privately owned spaces as Sony Plaza or Worldwide Plaza (Németh and Schmidt 2011; cited in Kelleci, 2012, p.31)

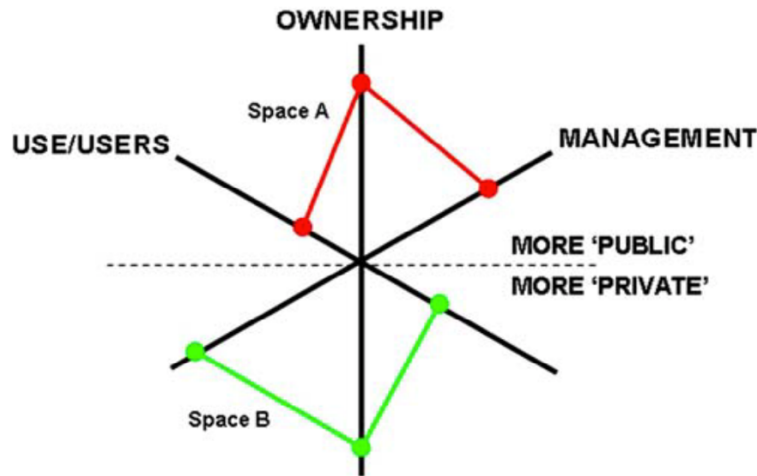


Figure 2.8. Hypothetical plotting of spaces (Németh and Schmidt 2011; cited in Kelleci, 2012)

2.7.1.3. The Star Model

The star model is basically a public space analysis method defined by five different indicators respectively ownership, control, civility, animation and physical configuration. The basic operating principle of the model is that the publicity of the public space increases, the length of the star increases. As a result, the publicness of public space is described by a particular dimension. Each variable has a grading starting from 1 to 5 in terms of publicness level. The final outcome of a star model allowing the graphical representation which is a simple way of expressing excessive background data (Varna & Tiesdell, 2010).

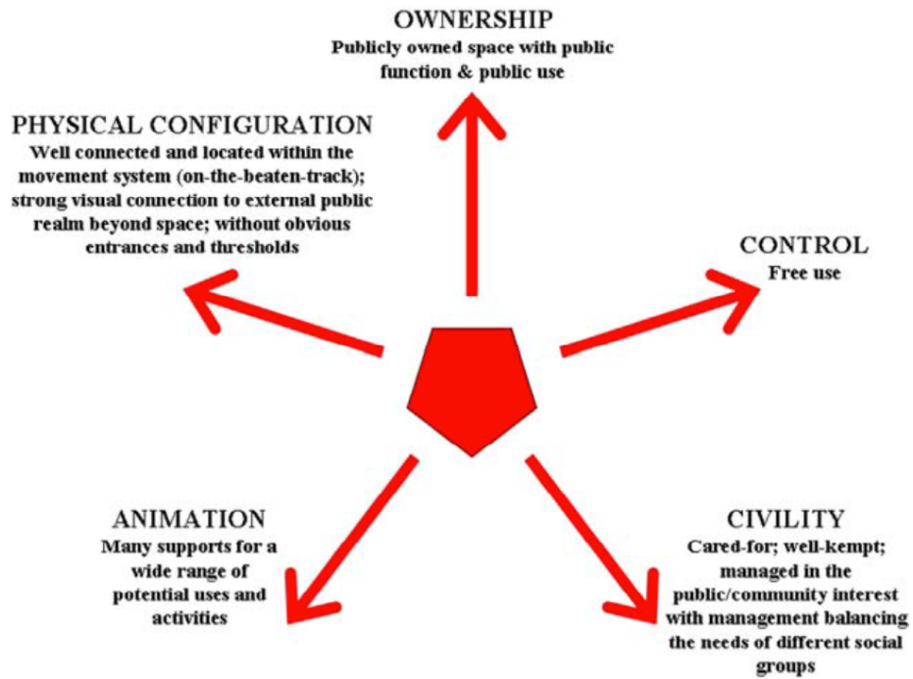


Figure 2.9. More publicness of public space on the star model places (Varna & Tiesdell, 2010)

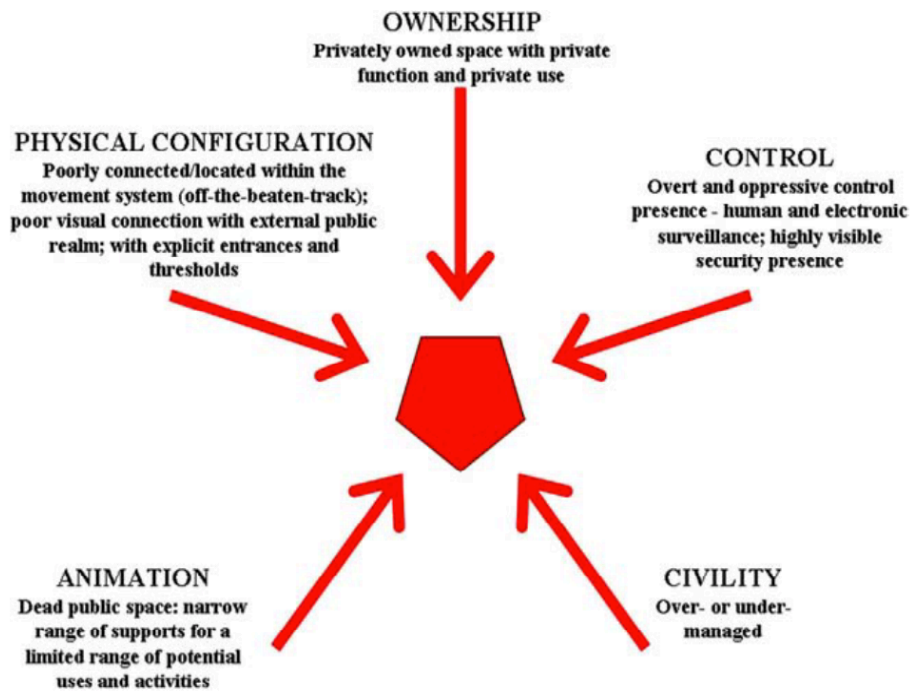


Figure 2.10. Less publicness of public space on the star model (Varna & Tiesdell, 2010)

2.7.1.4. OMAI Model

The model is more basic than others previously mentioned. Thus, it is more effective by the help of reducing publicness issue to a single concept. To begin with, four indicator of publicness of public space were identified with respect to ownership, management, accessibility and inclusiveness.

This model is named as OMAI on the basis of initial of these principles. Pie chart is one way of translating these four dimensions into a sample model. Each of the four indicators forms an equal part of the circle in this new OMAI model. While a bigger circle shows a more public space, a small circle represents for a more private space in that particular variable. The homocentric rings let each four dimensions to be evaluated on an ordinal, four-point scale ranging from 1 to 4 (Langstraat and Van Melik, 2013, p.434).

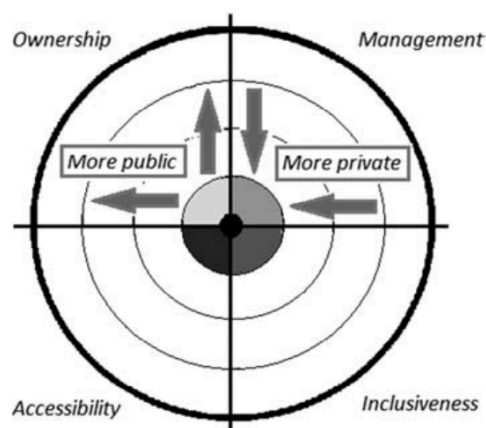


Figure 2.11. The OMAI Model of Publicness (Langstraat and Van Melik, 2013)

Table 2.1 includes the criteria that were used for this operationalization and demonstrate that ownership and management are easier to measure so they are considered as hard factors. On the other hand, accessibility and inclusiveness are more unclear to describe and thus they are considered soft factors (Langstraat and Van Melik, 2013, pp.434-435).

Table 2.1. Operationalization of the OMAI model (Langstraat and Van Melik, 2013, p.436)

Dimension of publicness	Defining components	1. Fully private	2. Private with some public characteristics	3. Public with some private characteristics	4. Fully public
Ownership	Legal status; public accountability	Legal ownership rests solely with a for-profit organization that is not publicly accountable	Majority of legal ownership rests with a for-profit organization, but local government has a minority stake; or legal ownership rests with a private not-for-profit organization	Majority of legal ownership rests with local government, but for-profit organizations have a minority stake; or legal ownership rests with an independent not-for-profit organization that is democratically accountable	Legal ownership rests solely with the local government
Management	Day-to-day maintenance; security/control	Security and maintenance are provided by independent private parties only	Security and maintenance are provided by a combination of public bodies and independent private parties	Private parties are involved in maintenance and security, but local government and the police have ultimate authority	Maintenance and security are the responsibility of local government and the police alone
Accessibility	Physical and legal barriers to access; visual access and obstacles through design	Physical barriers to access; a visually inaccessible design, resulting in a 'stealthy space'; a geographical location that makes it difficult for certain groups to reach the space; lack of accessibility by public transport	Meeting most, but not all of the criteria under (1)	Meeting some of the criteria under (1)	Meeting none of the criteria under (1), in other words, the place is equally accessible to all members of the public
Inclusiveness	Diversity of uses and users; facilities; welcoming ambience	There is a restrictive policy on activities allowed in the public space, and street furniture is completely absent or intentionally 'sadistic'	Seating and lighting are available, but no other attempts are made to welcome non-consuming visitors, and a restrictive policy on activities allowed is still in place	Seating and lighting are available, but no other attempts are made to welcome non-consuming visitors; no explicit restrictive policy on activities allowed is in place	Meeting the demands of a wide variety of users is an official policy goal

Table 2.2. Applying the OMAI Model to Seven Cases (Langstraat and Van Melik, 2013, p.440)

	Ownership	Management	Accessibility	Inclusiveness
Spitalfields Market	1: owned by a private investment fund	1: maintenance and security in private hands	4: very accessible to a wide general public	4: extensive programmes that target the inclusion of a wide variety of groups and ethnicities
Potters Fields Park	3: owned by local government, leased to a partially independent but not-for-profit trust	2: private management, a mixture of external public and private parties provide security	3: park is normally accessible to all members of the public, but it can be closed off for events	3: no rules on behaviour different from other local parks, some links with local community but events are mostly commercial
Bermondsey Square	1: owned by a private developer	1: managed by an independent property management company	4: very accessible location, explicitly designed so that it cannot be closed off – preserving an 'open' feel	4: local community is involved through a community fund, no rules different from other public squares, seating for the general public to use
Central Saint Giles	1: owned by a joint venture of property investors	1: managed by an independent property management company	2: open to the general public, a very 'stealthy' space, private security can remove undesirable groups	1: piazza, and events organized in it, are aimed at office workers and local residents – people who pay to be there
Arena Boulevard	4: fully owned by local government	3: very loose form of public-private cooperation, local government remains in control	4: fully accessible to the public as a public thoroughfare	4: boulevard is used by a very diverse group of people, local community has recently become a lot more involved
Mercatorplein	4: fully owned by local government	2: management of the square was handed down to an independent trust, but local government remained the most powerful player financially	4: fully accessible to the public as a public thoroughfare	4: square has an important 'neighbourhood function', providing a meeting space for the local community
Proefpark De Punt	3: owned by a local housing association, who finance the park's upkeep together with local government	1: park is run and managed by an independent bureau, who are fully responsible	4: park is open 24/7, management has opted against placing gates around the estate; even binge drinking at night is tolerated	4: the bureau's very method is to foster local community participation at every opportunity; local residents feel that the park is theirs

Notes: 1 = fully private; 2 = private with some public characteristics; 3 = public with some private characteristics; 4 = fully public.

The model was carried out four locations in Britain and three locations in the Netherlands.

- Spitalfields Market: Spitalfields, London (UK)
- Potters Fields Park: Southwark, London (UK)
- Bermondsey Square: Bermondsey, London (UK)
- Central Saint Giles piazza: Holborn, London (UK)
- ArenA Boulevard Zuidoost: Amsterdam (NL)
- Mercatorplein De Baarsjes: Amsterdam (NL)
- Proefpark De Punt Delfshaven: Rotterdam (NL)

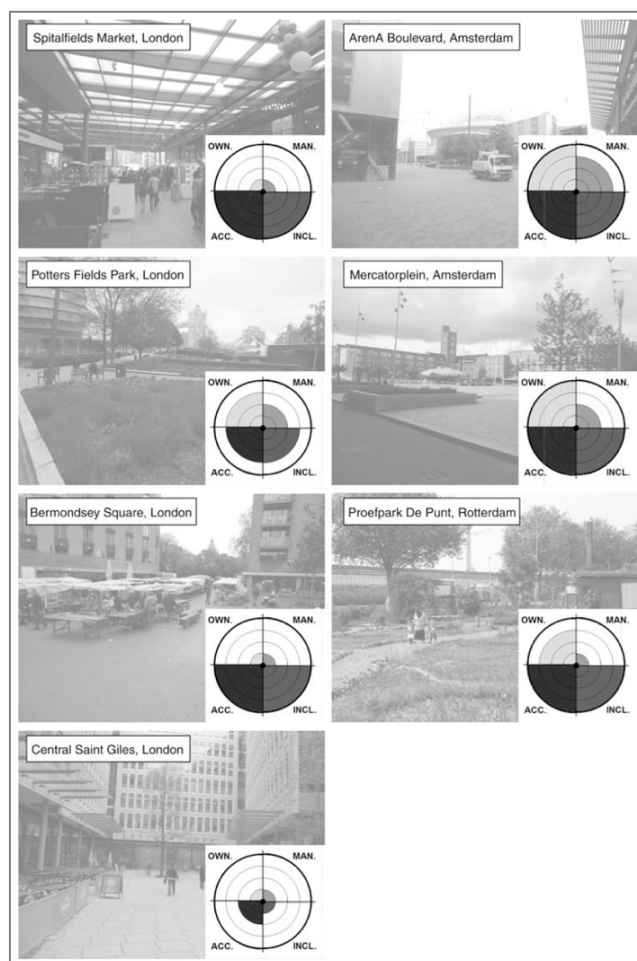


Figure 2.12. *The OMAI model for four British and three Dutch cases. (All photographs by Langstraat, except Proefpark De Punt, 2012; cited in Langstraat and Van Melik, 2013, p.441).*

CHAPTER 3

BUILDING NEW MODEL FOR INVESTIGATING MORPHOLOGICAL ASPECTS OF PUBLIC SPACE

3.1. Building New Public Space Analysis Model: ‘Polygon Model’

Analysing the publicness of public spaces is a difficult issue because it has many variables and both quantitative and qualitative information is needed to understand these variables. Another difficult side is to combine qualitative and quantitative data and draw an overall result. It is one of the most difficult aspects of this study to design a model which is also shown with quantitative data. There are important studies that have examined the publicity of public spaces qualitatively and have demonstrated the degree of publicity of these spaces (Akkar Ercan, 2010, Akkar Ercan and Memlük, 2015; Akkar Ercan, 2019). These studies make important contributions to develop new model including degree of different public spaces as regards morphological aspects. For this purpose, a model based on qualitative and quantitative research has been developed and its results are illustrated under the name of ‘Polygon Model’. The name polygon is proof that this model is defined by many variables. These variables consist of six basic dimensions which are determined to analyse the publicness of public spaces regarding urban morphology.

3.1.1. Basic Purpose of Creating a New Model

The source of information of the model mostly depend on the qualitative and quantitative information obtained from morphological variables. We learn that public space analysis depends on many variables, and we gain information about these spaces through many qualitative and quantitative observations. It is another important aim of this thesis to link such a complicated situation to a simple and clear result with a single

visual. The most important reason for developing a new model is to conclude a complex issue with a simple and clear result after extensive research.

3.1.2. Basic Components of the Polygon Model

A new model design has been developed as a result of examining existing models. The basic features and working principle of this new model work mostly like the previous ones and different demonstration techniques have been developed. The name of the model is Polygonal Model and consists of six basic principles.

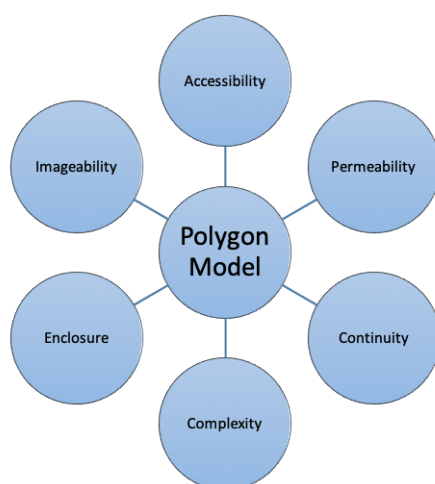


Figure 3.1. Six main dimensions of polygon model (Prepared by V. ER)

These basic principles are symbolized in three categories. These categories are respectively 3 level as being better than others, 2 level as being average and 1 level as being worse than others. Each quality category is indicated by the specified colour (Figure 3.2.). These levels of publicity will be calculated according to the principles determined by each sub-principle of each dimension. Each principle is represented by one of these categories and the area of the polygon which exist by merging the dots formed by combining these points shows the publicity of public space of region (Figure 3.2).

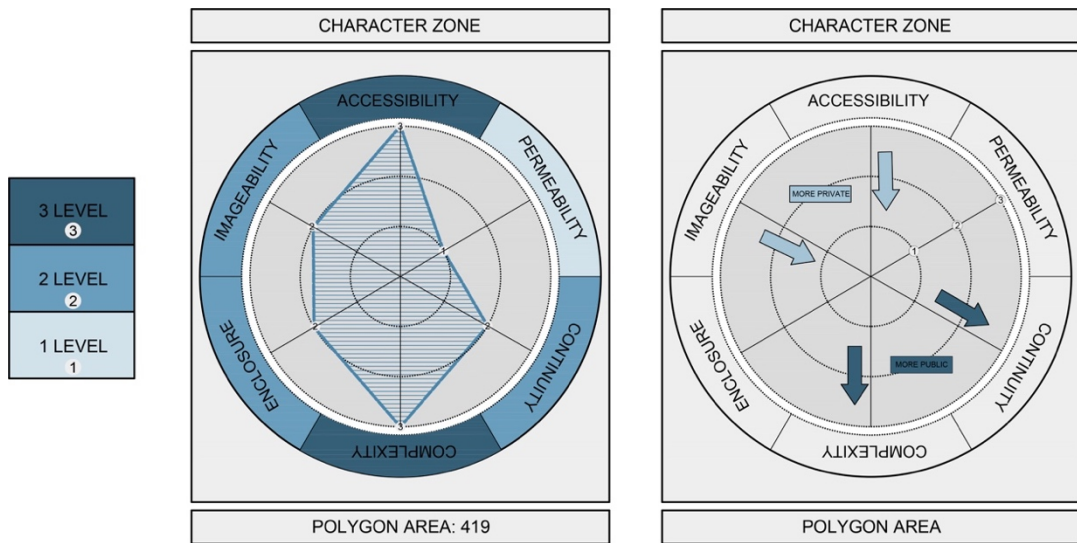


Figure 3.2. Polygon model illustrators (Prepared by V. ER)

The strongest and weakest areas of publicity that can occur are shown in the Figure 3.3. The polygonal area of the public space which has the weakest publicity feature is 98 while the strongest is 886. In accordance with the basic principles, the values of publicity that may occur in the regions examined vary between these two numbers.

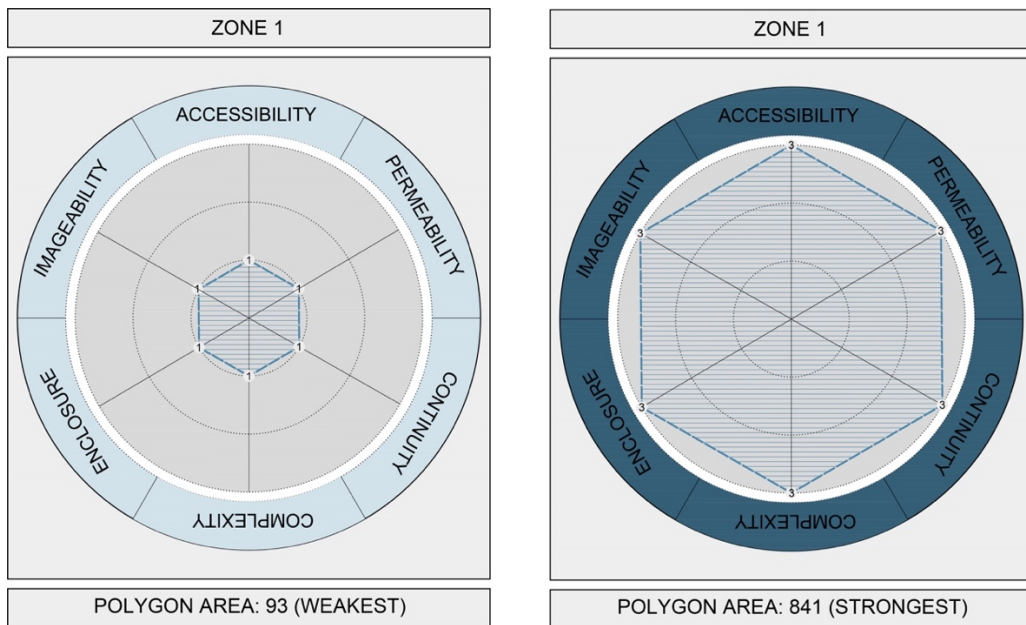


Figure 3.3. Strongest and weakest publicness diagram by polygon model (Prepared by V. ER)

3.1.3. Model Processing Mechanism

The findings obtained during the thesis study related to investigating publicness of public space are evaluated separately qualitatively and quantitatively and then finalized with a general evaluation. With this general evaluation, the dimensions defined by their sub variable in Table 3.1 and the outcome evaluations are quantitatively integrated into the table. Three main variables of each dimension are defined and these variables are identified as strong/weak, varied/monotone, sufficient/inadequate and enough/inadequate and evaluated as 1 or 0 according to the related dimension' final outcome. Thus, the level of representation of the variable with the relevant field is determined as the result evaluation. After determining the levels of variables, the polygonal area formed by combining the points shows the level of publicity of that region. The area of this polygon is directly proportional to the publicness indicator of related region and the different models obtained by applying it in more than one public space can be compared with each other with these different space indicators and thus it can be determined which public space has shown more publicness.

For example, with this working principle, it is determined that different public spaces show different publicness. These detected differences may also show different model diagrams as in Figure 3.4. The areas of Zone 1, Zone2, Zone 3 and Zone 4 are 498, 374, 451 and 419, respectively. Regarding these areas, Zone 1 has more publicness level of public spaces than other regions because it has three level accessibility, enclosure and complexity dimensions, which means that if these values are more, the outcome area is more, and therefore this public space has more publicness depends on the high level of these three variables.

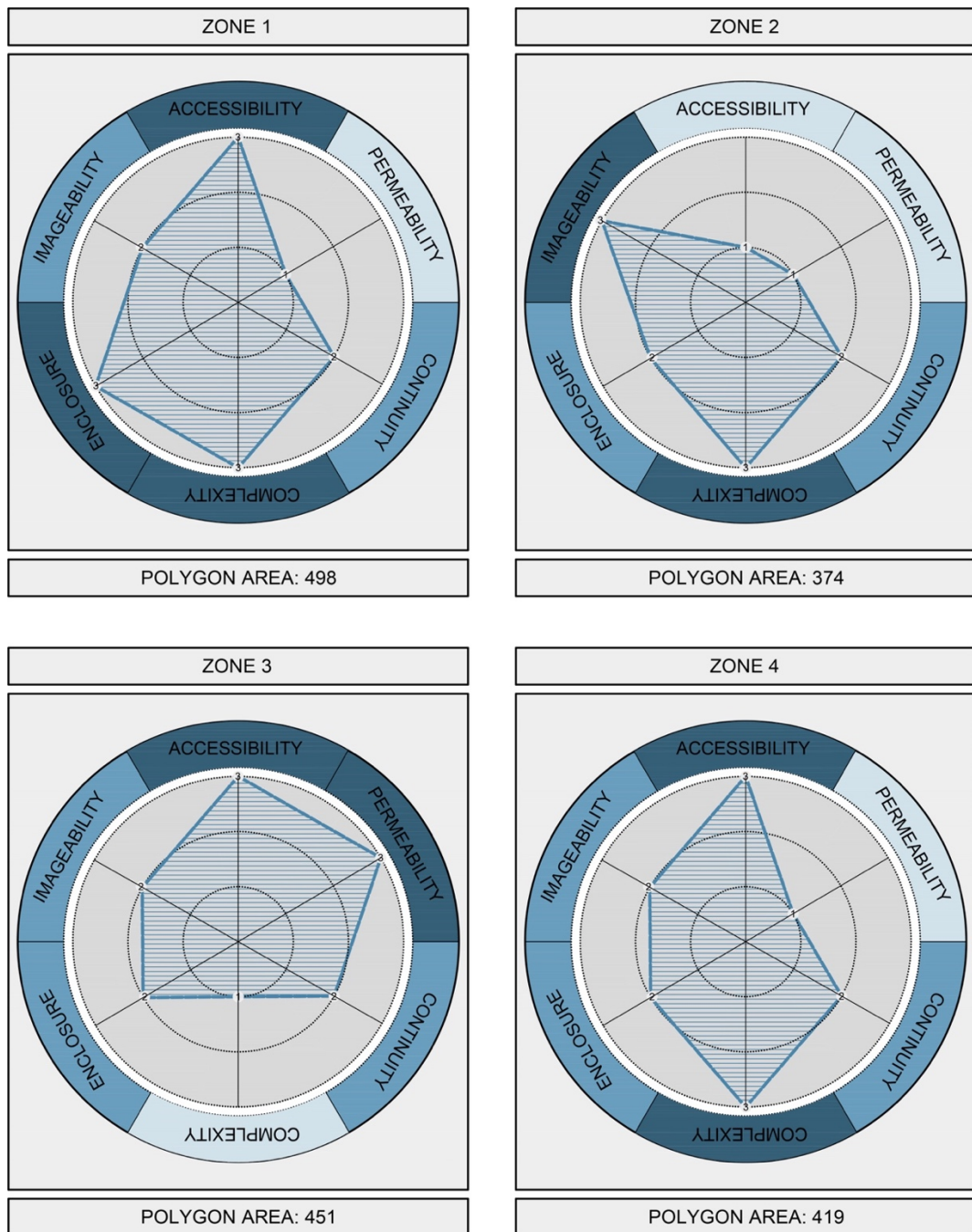


Figure 3.4. Sample models for different zones (Prepared by V. ER)

Table 3.1. *Morphological dimensions, sub titles and explanations of polygon model*

	Sub Titles	Explanations	Options and Values	Possible Outcome Value
ACCESSIBILITY	Public Transportation (e.g. Bus, Tramway)	Strong and well-defined roads High connection between station and space	1 Strong 0 Weak	0-3
	Private Transportation (e.g. Car)	Sufficient car accessibility Adequacy of public and private car parking area	1 Strong 0 Weak	
	Pedestrian and Bicycle Access	Strong and well-connected pedestrian and bicycle roads	1 Strong 0 Weak	
PERMEABILITY	Street Pattern	Both configuration and the layout of urban block structure is important in not only determining the pattern of movement but also in setting parameters for subsequent development.	1 Strong 0 Weak	0-3
	Urban Blok Pattern	Smaller blocks increase visual permeability.	1 Strong 0 Weak	
	Visual Permeability	Visual permeability; the ability to see the routes through an environment, while physical permeability; the ability to move through an environment.	1 Strong 0 Weak	
CONTINUITY	Quality of Paths	They are the main elements that provide the sense of physical and psychological orientation.	1 Good 0 Poor	0-3
	Facade Continuity	Facade compositions play an significant role in describing paths.	1 Strong 0 Weak	
	Landscape and Urban Sign Elements	Landscape elements helps in structuring closure and proximity to obtain felt volume.	1 Sufficient 0 Insufficient	
COMPLEXITY	Variety of Building Types	Variety of architectural styles	1 Varied 0 Monotone	0-3
	Variety of Activities	Commercial or residential areas, a park, plaza, courtyard, various trees, plants and other natural elements increase interest	1 Varied 0 Monotone	

Table 3.1. *Continued*

	Sub Titles	Explanations	Options and Values	Possible Outcome Value
COMPLEXITY	Diversity of Landscape Elements and Floor Coverings	Richness of landscape elements and floor coverings	1 Varied 0 Monotone	
ENCLOSURE	Open Green Areas and Trees	Function of trees is to describe the boundary for pedestrians	1 Strong 0 Weak	0-3
	Street Furniture	Street furniture play crucial role between pedestrians and vehicles	1 Strong 0 Weak	
	Urban Block Orientation	The degree of continuity of the building edge along the street also affects enclosure.	1 Strong 0 Weak	
IMAGEABILITY	Landmark	Landmarks help observer in way finding process.	1 Enough 0 Inadequate	0-3
	Diversity of Urban Uses	Different urban use increase diversity of public space	1 Enough 0 Inadequate	
	Sense of way finding	Sense of way finding is that the user can achieve his or her goal without any worries	1 Strong 0 Weak	

3.1.4. Limits in Model Development

Integrating all these publicness indicator variables into a single quantitative result is a very important and challenging issue. In the final evaluation by using qualitative and quantitative observations, it is determined that which urban space generally have more publicity indicators and then the final quantitative evaluation is made by comparing them, which means that we had to make some general evaluations here.

Moreover, quantitative analysis studies are generally based on survey results conducted by architecture students and some measurements on specific subjects rather

than comprehensive measurement. However, more numerical analysis documents of many more variables can be extracted and integrated into this study.

In addition to quantitative analysis, qualitative analyses were also conducted during a certain period of the year. These six variables may show differences according to the time period. For example, analysing the number of people visiting public spaces may produce a different result according to summer or winter season. Therefore, the data obtained at the time of measurement were evaluated as general result data about case study.

3.2. Morphological Dimensions of Publicness

3.2.1. Accessibility

Accessibility is the one of the crucial point to create successful public space. The position of a square affect the accessibility in terms of close distance to main pedestrian, vehicular traffic routes and transportation nodes (Shaftoe, 2008, p.140). Accessible urban environment brings about not only the possibility and choice of interaction but also development of social and economic efficiency. As small-scale city blocks allow the intersection of the streets, the chances of interaction and contact among people increase. The continuous flow of social and economic activities on the streets is pleased for better accessibility (Jacobs, 1961, p.179). For this reason, small city blocks can be useful elements to meet the diversity of accessibility.

Moreover, the ease movement is crucial consideration with respect to accessibility of path networks. One of the important role of Street is to connect spaces for motorized and un motorized transportation modes. Streets are often seen as channels providing vehicle access in recent times, but in fact the most important source of pedestrian movement corridors. They also facilitate the movements of goods in order to maintain the larger market and specific uses (Moughtin and Mertens, 2003: 131; cited in Belge, 2012, p. 50).

Furthermore, the design of the urban environment can be considered in terms of the ways in which it decreases the choices available to certain social groups, such as those with disabilities, women and the elderly, and those without access to cars and reliant on walking or public transport. Besides, accessibility can be discussed with respect to transport. Environments are inaccessible when their use depends on private (usually car) travel. Inclusive urban design depends on spatial concentration of different land uses, making places and facilities accessible, and public transport viable (Carmona et al., 2003, pp.127-128).

Accessibility is also related to mobility. To illustrate, women and lower income groups tend to have reduced mobility and access since they rely on public transport. Automobility, meaning car-based mobility plus the economic and political systems supporting car-based society, is especially privileged, resulting in a prevalence of car-dependent environments at present. (Carmona et al., 2003, p.128).

3.2.2. Permeability

Permeability is an important urban design quality by establishing by the cadastral pattern. It basically means that an environment allows a choice of routes both through and within it. Moreover, it is a measure of the opportunity for movement. A related measure -accessibility- is a measure of what is achieved in practice. Visual permeability refers to the ability to see the routes through an environment. Conversely, physical permeability refers to the ability to move through an environment. In some situations, there may be visual but not physical permeability (and vice versa) (Carmona et al., 2003, p.64).

According to Jacobs (1961, p.178), city blocks must be short in order to generate more streets to walk down and more opportunities to turn corners. Indeed, shorter blocks create more street life and permeability with back alleyways and courtyards, which are opened up to active use. Jacobs states that it is necessary to produce more streets and more opportunities to provide more mobility. For this reason, city blocks should

be shorter. Indeed, shorter blocks create more permeability through back streets and courtyards that open to active use (Montgomery, 1998, p.106).

Street Pattern

Cadastral patterns are composed of many small- sized street blocks. They have a fine urban grain, but patterns with fewer larger blocks have a coarse urban grain. An area with smaller blocks offers a greater choice of routes and generally creates a more permeable environment than one with larger blocks. Smaller blocks also provide visual permeability - the smaller the block, the easier it is to see from one junction to the next and thus they improve people's awareness of the choices available (Carmona et al., 2003, pp.64-65).

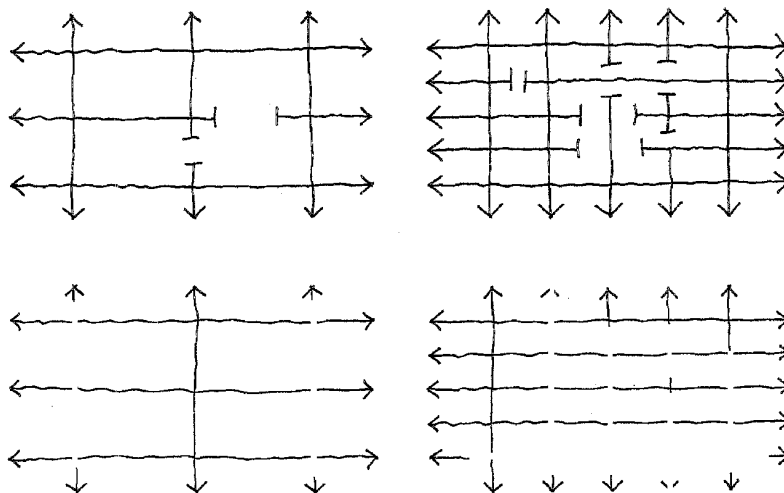


Figure 3.5. Permeability. Finely meshed grids offer many different ways to get from place to place within the grid. Coarser grids offer fewer ways. If the grid becomes discontinuous through the severing of connections and the creation of dead ends, permeability is reduced (Carmona et al., 2003, p.65)

A fundamental discrimination in cadastral patterns can be made between regular or ideal grids characterized by geometric regularity and organic or deformed grids characterized by apparent irregularity. Although the shape of the grid does not matter in relation to physical permeability, deformities may affect potential movement by reducing visual permeability (Carmona et al., 2003, p.65).

Regular and ideal grids are generally planned and characteristically have some degree of geometric discipline. Because of the ease of laying out straight streets, the patterns have frequently been overlaid on, or added alongside, more organic patterns. Various cities in the New World are examples of regular, orthogonal grids, by which large, relatively plain tracts of land could be easily divided into manageable plots and sold off (Carmona et al., 2003, p.65).

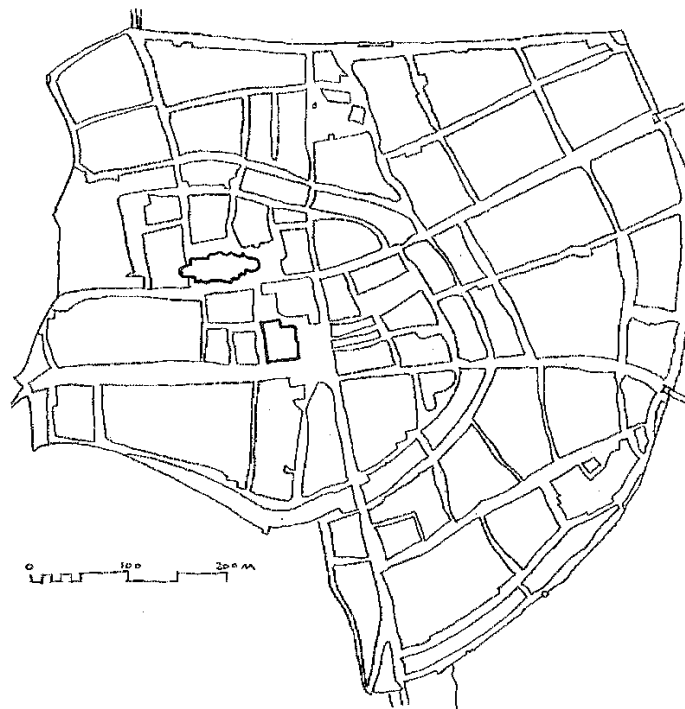


Figure 3.6. Plan of Rothenburg, Italy (Carmona et al., 2003, p.65)

The grids used to lay out cities in the US became inevitable over time. The public squares and diagonal streets that generate important features of earlier street patterns, for example, in Savannah, Philadelphia, Washington, were often dropped later in favour of simpler systems of straight streets and rectangular blocks. Savannah was laid out on the basis of cellular units with growth intended to be by repetition of those units. Each unit had a basic identical layout: four groups of ten house lots and four trust lots surrounding a public square. The main through traffic was on the streets between cellular units, leaving the public squares to quieter traffic (Figure 3.7) (Carmona et al., 2003, p.66).

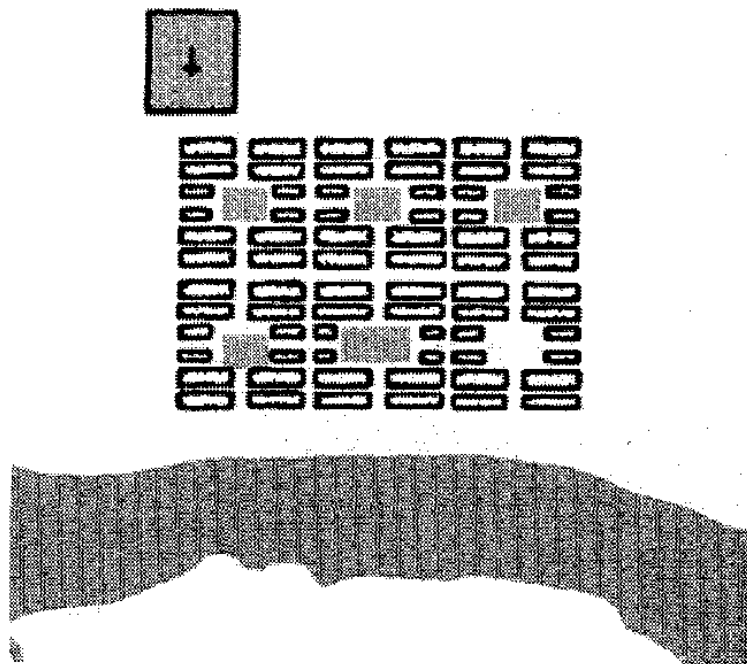


Figure 3.7. Savannah layout (Carmona et al., 2003, p.66)

During the late nineteenth and early twentieth centuries, in many countries the dominance of rectilinear patterns incited reaction against their use in favour of continuous curvilinear layouts, where wide, shallow plots offered an impression of spaciousness. Although curves served to enclose views and add visual interest to newly developing neighbourhoods and suburbs, they were designed to decrease visual permeability and discourage non-residents from entering into the area (Carmona et al., 2003p.66).

Moreover, during the late nineteenth century through to the 1920s and 1930s, most of the curvilinear patterns developed from were variations of grids. A refinement (introduced by Unwin and Parker at New Earswick, 1898, cited in Carmona et al., 2003, p.66) which became common during the late 1950s, was the cul-de-sac. Cul-de-sacs sought to retain the aesthetics of curvilinear layouts, but they militate the nuisances and dangers of cars and other traffic such as the problems of through traffic. Widespread use of this road system changed the public space network from a grid to a hierarchical and discontinuous pattern. (Carmona et al., 2003, p.66).

Urban Block Pattern

The reactions to the two major transformations of the morphological structure of public space networks have led to a shift to a new appreciation of the qualities of traditional urban space. Several urban design projects are designed in terms of urban blocks defining space instead of individual buildings in space (Carmona et al., 2003, p.80).

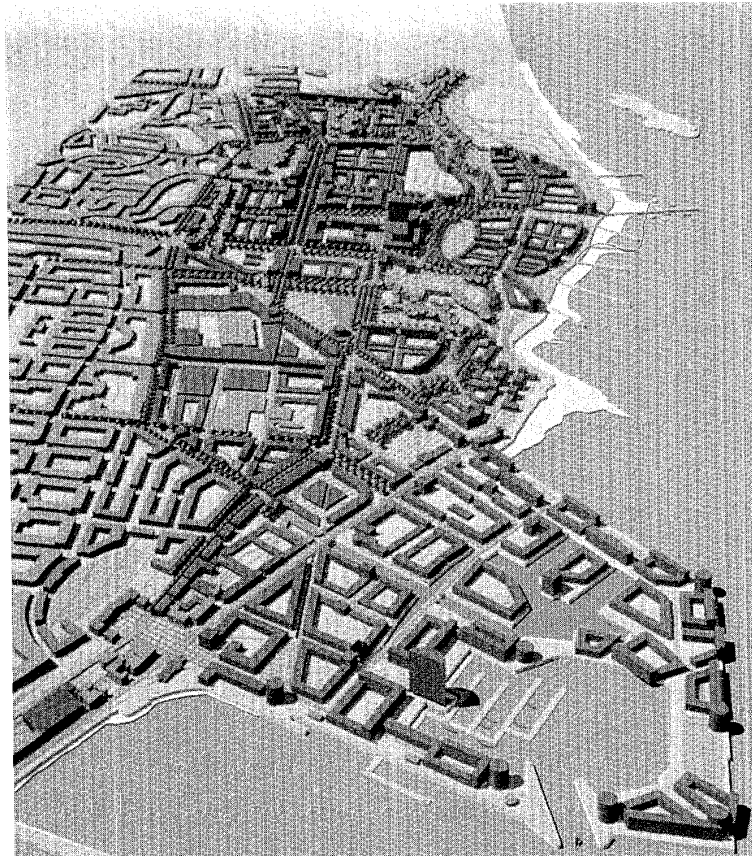


Figure 3.8. Many contemporary urban development schemes use urban block structures. Master plan for Granton, Edinburgh, Scotland (Llewelyn Davies, cited in Carmona et al., 2003, p.81)

The layout and configuration of urban block structure are significant with respect to both in defining the pattern of movement and in setting parameters for subsequent development. Conceived as a public space network such structures open up possibilities can ensure coherence and good urban form without necessarily being

deterministic about architectural form or content. Because the block pattern forms a basic element of the capital web, the pattern and configuration of blocks must be based on appreciation of the different rates of change of different morphological elements. Since the street pattern is generally the most resilient part of the infrastructure, it is crucial to give it a configuration and dimensions that let it to be robust and enduring. (Carmona et al., 2003, pp.80-81)

Both the size and shape of urban blocks lend to an environment's character. Micro climate, wind and sun penetration also need to be considered. For instance, tall, narrow streets in northerly or southerly climes will have limited sunlight penetration for much of the year. In establishing new patterns of urban development a balance needs to be struck between providing sufficient area for development to make it commercially viable and providing sufficient space for efficient and convenient circulation and social space. Furthermore, a balance needs to be struck between arguments for smaller blocks, pedestrian permeability and social use of space and those for larger blocks and an optimum distribution of built form and open space. A range of block sizes may promote diversity of building types and land uses. (Carmona et al., 2003, p.81).

Block sizes can be installed by considering existing linkages and connections and working within the grain of the local context. Figure 3.9 shown here from the Urban Design Compendium start by considering how the site can be connected with nearby main routes and public transport facilities. The second diagram demonstrate how cul-de-sac layouts would create an introverted layout that failed to integrate with the surroundings. The third diagram recommends a more pedestrian-friendly approach that integrates with the surrounding context, and links existing and proposed streets. The fourth diagram shows the street pattern then forms the basis for urban blocks. This approach can be seen as urban healing or urban weaving (Llewelyn-Davis, 2000, p. 36, cited in Carmona et al., 2003, pp.81-82).

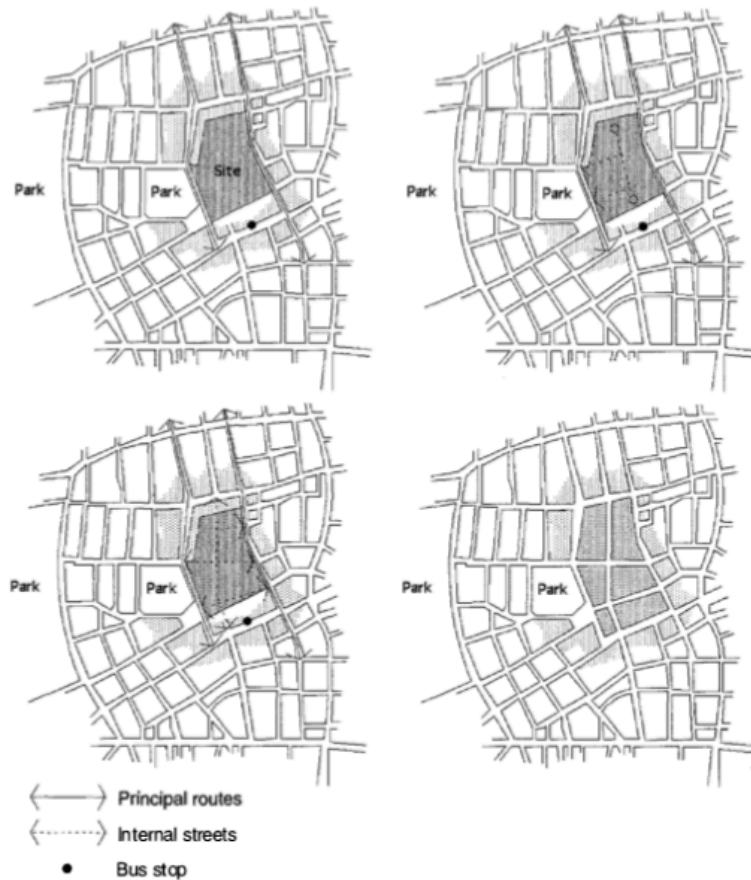


Figure 3.9. Different block sizes (Carmona et al., 2003, p.82)

Small block sizes are often promoted for reasons in the sense of urban vitality, permeability, visual interest and legibility. Small urban blocks may be a single building, with perhaps a central light well or atrium. Similar to freestanding buildings, such blocks raise problems of fronts and backs. Larger urban blocks are generally perimeter blocks, with the ribbon of buildings around the edge providing the public front and private or semi-private space in the interior. As the depth of the perimeter ribbon is limited to the depth of building that can be naturally lit and ventilated, the size of the central space increases as the dimensions of the block get larger. This space can be used for many different purposes such as residents' car parking, private or communal gardens, sports facilities, etc. by depending on its size (Carmona et al., 2003, pp.82-83).



Figure 3.10. Perimeter blocks in central Paris, France
(Carmona et al., 2003, p.83)

On the other hand, larger block structures may be more efficient in terms of the distribution of built form and open space. Examining the densities and land use intensities of different development patterns, Martin and March (1972, cited in Carmona et al., 2003, p.84) ensured mathematical arguments both for larger block sizes and for perimeter rather than pavilion development. They showed subject to certain environmental criteria, courtyard layouts (perimeter blocks) had a higher land use intensity than pavilions (tower blocks) by looking at housing layouts in particular Carmona et al., 2003, p.84).

In short, this chapter has discussed permeability, the morphological dimension of urban design, by focusing on two key issues of urban form and urban layout. In overall terms, it has demonstrated and discussed the contemporary preferences for urban block patterns and grid-ded, permeable street layouts. While such preference is clear,

it is necessary to appreciate why hierarchical, segregated and introverted layouts have come about. Given the prevalence of such layouts, active resistance is required to reductions in permeability. When a high level of permeability is initially provided, segregation can usually be achieved later, if necessary, through design or management: the layout is robust and capable of adaptation. On the contrary, it is difficult, even impossible, to turn an environment designed for segregation into one for integration. All streets must lead somewhere and terminate in other streets or space rather than in dead ends in order to ensure permeability. Such a principle would result in creating permeable grids (Carmona et al., 2003, p.86).

3.2.3. Continuity

This indicator mainly examines the movement of the eye in the direction of the element and the elements that move together. In a simple sense, the eye continues in a certain direction and continues this search until it reaches something important (Eraydın, 2007, p.32).

Paths and edges are two basic elements among other Gestalt elements of continuity. They are the main elements that afford the sense of physical and psychological orientation and way-finding. A good continuance is the main character of paths and edges. Continuity in edges and paths “facilitates the perception of a complex physical reality as one or as interrelated” parts (Lynch, 1960, p.106). It is clear that segments are composed of different physical elements. According to Lynch, special facade compositions play an important role in identifying paths. Both facades and landscape elements, urban furniture, different levels and types of paving are also determinative. This helps in structuring closure and proximity to get felt volume.

Paths and edges are the main elements that provide a sense of physical and psychological orientation and direction. The main character of paths and edges is good continuity. According to Lynch, continuity at edges and paths allows a complex physical reality to be perceived as one or interrelated (Lynch, 1960, p.106). It is a clear fact that the segments are composed of different physical elements. In Lynch's view,

the presence of special façade compositions plays a crucial role in determining paths. Facades, landscape elements, urban furniture and flooring types also define the paths.

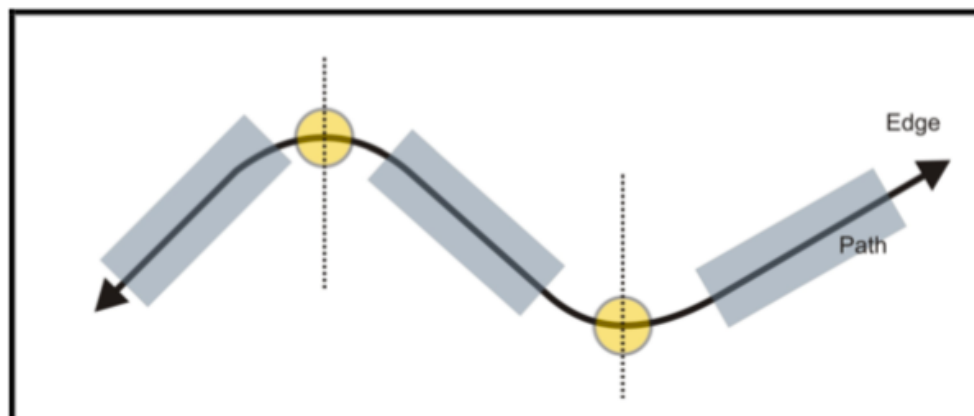


Figure 3.11. The main elements of continuity: paths and edges (Eraydın, 2007, p.73)

Lynch argued that there are a number of criteria defining a “good city”. He uses some of his past experiences, although he has built them, but he does not use them directly since they are not appropriate in all situations. Thus, he uses some common ideas and opinions. He states that “the good city maintains the continuity of this complex ecology, while progressive change is permitted” (Lynch, 1981, p.116). As a result, a sense of continuity, both culturally and historically, makes the settlement good for its citizens. In addition to characteristic, the term of continuity is important in terms of development, openness and connectivity.

3.2.4. Complexity

The complexity of a path is usually related to the visual richness of an area. Important factors such as the diversity of building types, appropriate architectural styles, decoration of buildings, quality and number of urban furniture and human activity affect the complexity of the region. Shape, colour, material, the shape of windows and doors, the diversity of lighting systems and pedestrian traffic are very impressive urban elements in increasing the complexity of urban space (Purciel and Marrone, 2006; Eraydın, 2007, p.106).

The complexity of urban elements in the public sphere whether commercial or residential increases the attraction and interest of the region. In addition, the presence of a park, square, courtyard or a fountain, various trees, plants and other natural elements may enhance the spatial complexity of a street or public space (Purciel and Marrone, 2006 and Jaskiewicz, 2000; Eraydin, 2007, p.106).

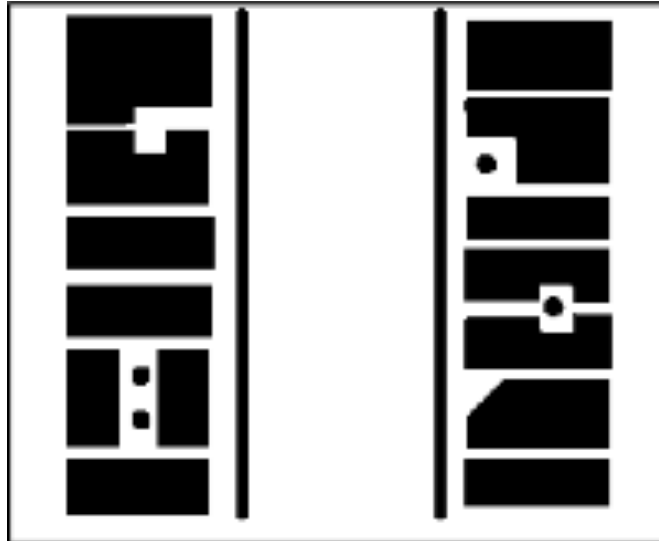


Figure 3.12. Diagram showing a complex space (Jaskiewicz, 2000, cited in Eraydin, 2007, p.106)

According to Montgomery, one of the main features of a good urban location is that it provides vitality to that place. Likewise, a good environment should be legible and clearly detectable. Montgomery (1998) mentioned “vitality” in Making a City: Urbanity, vitality and urban design as the three constitutes of activity. He states that vitality and diversity are two main concepts of an activity pattern constitutes. “Vitality is what distinguishes successful urban areas from others” (Montgomery, 1998, p.4). Living places basically means rhythm. These spaces have characteristic rhythms, which means that they have their own active living spaces and are distinguished by this feature.

3.2.5. Enclosure

The basic definition of the enclosure is related to the degree to which the edges of the street are defined (Jaskiewicz, 2000). Pedestrian enclosure helps the eyes of the pedestrians facing the street. Enclosure is usually a visual description of a space where the width of the street has a rational ratio to the height of the vertical elements of that street (Purciel and Marrone, 2006).

Arrangement of trees and any vertical elements can create properly spatial definition. When we imagine street as rooms, buildings defining streets are detected as the walls of these rooms and also streets are perceived as the floor of the room, which means what we call the feeling of enclosure that a pedestrian feel in an urban space.

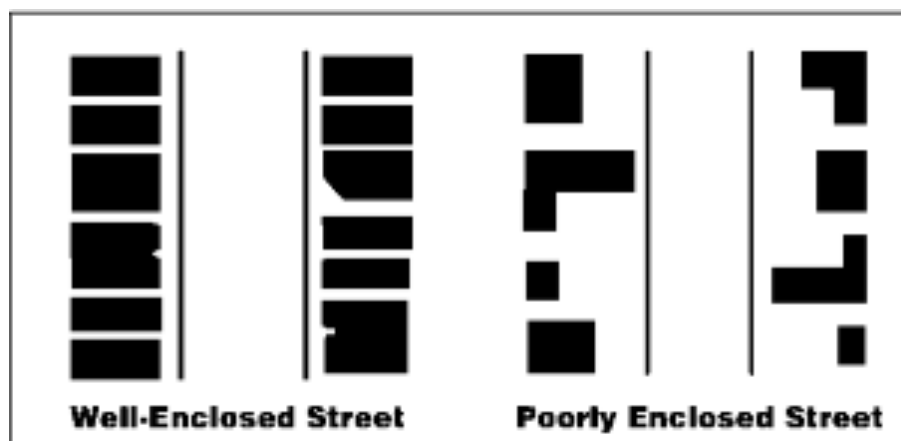


Figure 3.13. Well-enclosed street and a poorly enclosed street (Jaskiewicz, 2000)

Enclosure is included as morphological dimension in this research study with respect to being related more pedestrian enclosure. It is generally related about streets but pedestrian enclosure is used in order to investigate feeling of pedestrian in public spaces. For this reason, it is a significant factor influencing pedestrian safety both physically and perceptually. There are three main factors affecting pedestrian enclosure and they are human scale, building orientation and street furniture.

Human scale in a well-enclosed street generally means optimal width of sidewalk which could ensure pedestrian movement and their activity and functional minimum

width of a sidewalk is about 1.525 m (Axelson, et al., 1999). In general, a suitable pavement width increases the functionality of the various pavement parts, thereby allowing pedestrians to move more easily. It also allows pedestrians to better understand the route structure and layout of the entrances. Moreover, both the relationship between the height of buildings and width of the street define sense of enclosure and the degree of continuity of the building edge along the street also influence enclosure.

According to Jacobs (1993) in his book, "Great Streets", a cross-section ratio should be one (height) to two (width), (1:2), and this ratio between height of buildings and width of street can provide appropriate closure along the street. He also states that in places where this ratio in building orientation could not be ensured by means of structures. For this reason, arrangement of trees can create a chance to enforce definition of closeness and completeness (Jacobs, 1993).

Urban furniture is the last basic factor that creates the pedestrian enclosure in urban space. Both street furniture and street trees play the role of buffers between pedestrians and vehicles. Also, they provide walkers with safety from traffic noise (LA-Walkability, 2008). In addition to buffering between pedestrian and vehicles, trees can be used in order to determine the pedestrian boundary by reducing the ratio of the building height to the open area. Trees allow the streets to be perceived narrower. In addition, trees force drivers to slow down and be more careful because of fear of collision with solid objects or trees. For example, as can be seen in Figure 3.14, the use of trees can provide the separation of different movements in public spaces, producing safer and more comfortable spaces for pedestrians.



Figure 3.14. Street furniture in walkway enclosure (LA-Walkability, 2008)

3.2.6. Imageability

According to Lynch (1960), imageability is different than legibility in the sense of being related to mention and emphasize a mental image. He states that imageability is the quality indicators in a physical object, which gives it a high chance to evoke a strong image in any given observer (Lynch, 1981, p.9). The basic things that make the object or place different from others are a quality that increases physical emotions and feelings. Lynch describes the characteristics of the imageable urban environment in terms of non-perceptual factors like accessibility, competence, diversity, adaptability and comfort (Lynch, 1981, p.68).

Therefore, a highly imageable city must be remarkable and also make sense for its citizens. In this context, legibility and imageability can be slightly different. Legibility can be summarized as the clarity of urban elements and can be perceived as a whole. In this sense, a legible environment helps the citizens to guide themselves. imageability, on the other hand, is the distinctiveness of urban space that creates a sense of place. (Eraydin, 2007, p.44)

According to Lynch, there are some other attributes of a beautiful environment like; “meaning or expressiveness, sensuous delight, rhythm, stimulus and choice” (Lynch, 1960, p.10). One of these attributes is imageability. It has a concentration on perceptual relationships between humans and environment.

Moreover, namely sudden jerk or dissimilar elements describe the segments and create a transition between two segments. These certain markers create a feeling that the observer is on a way in a setting. In respect of Lynch’s terms, they are landmarks assisting observer in the term of way-finding issue. “The dominance of one elements” (Lynch, 1960, p.126) can make it identifiable in the whole pattern. Additionally, “directional differentiation” (Lynch, 1960) is a significant quality in way-finding process, which is really useful in structuring large scale plans.

CHAPTER 4

RESEARCH METHOD

4.1. General Thesis Study Method

This study aims to explain how morphological dimensions of public space show different kinds of publicness level. It involves a case study approach as an analysis method. The coast as one of the biggest urban public space (or even being only one) in Samsun has always been popular among different social groups. The main reason behind the selection of Atakum Costal Promenade as a case to be investigated is to research how far coast roads' publicness has changed in time. The scope of this research, thus, is to the pros and cons in the publicness of Atakum Costal Promenade.

This study uses both quantitative and qualitative data, which are based on the six main sources of evidence. In other words, a mixed method based on quantitative and qualitative observations has been developed. Quantitative researches are mainly evaluated according to the survey results. In particular, the results of the survey conducted with architecture students constitute the most important quantitative data source of this research. On the other hand, qualitative research is also an important method in this thesis. Qualitative results are conducted by direct observations, photographs, field measurements, spatial analyses and maps. After obtaining these qualitative and quantitative results, the evaluations are examined separately qualitatively and quantitatively. Research evaluations are indicated qualitatively and quantitatively by tables and graphs, and inferences are made as outcome evaluations. Finally, a general evaluation is made to show qualitative and quantitative results in a single model which is mentioned before and to obtain a single final outcome.

In addition to quantitative and qualitative research, while the findings about the case study are obtained, the expert opinion has been sought. This study emphasises the

sample population of the investigation mainly from the university students and academics. Therefore, the vast majority of surveys were conducted with these members of architecture faculty of 19 Mayıs University. On the other hand, few of the surveys were conducted with public space users to learn the opinions of them. In brief, not only expert knowledge but also user knowledge has been determined as significant data sources in this thesis study.

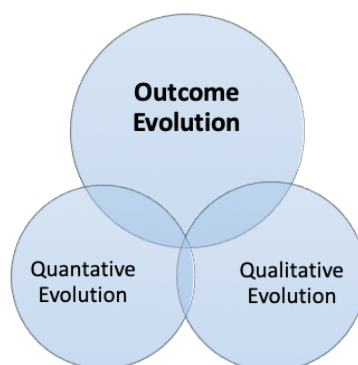


Figure 4.1. Quantitate and qualitative evolution constitute outcome evolution (Prepared by V. ER)

4.2. Research Method Limitations

However, there are limitations because it is difficult to give qualitative and quantitative observation results as a single result. Therefore, firstly, these two different results were evaluated separately in detail and then evaluated as a single result by the help of polygon model. In other words, not only describing and evaluating a final result but also both quantitative and qualitative results are referred to as the evaluation of this thesis. Furthermore, quantitative data is usually based on survey results and there are also measurements made on case area. Therefore, it is necessary to generalize these findings according to the results of the survey-based quantitative counts. Another important research assumption is that although surveys are almost the only source of quantitative information, there are many sources of quantitative information. Therefore, a general evaluation was made by giving more importance to qualitative results than quantitative results.

To sum up, it is a thesis study in which quantitative and qualitative data and basic researches are conducted and interpreted with expert and user knowledge. This research includes many data with a mixed method and at the end of which all results are evaluated with the model developed. This comprehensive research process is shown in Figure 4.2.

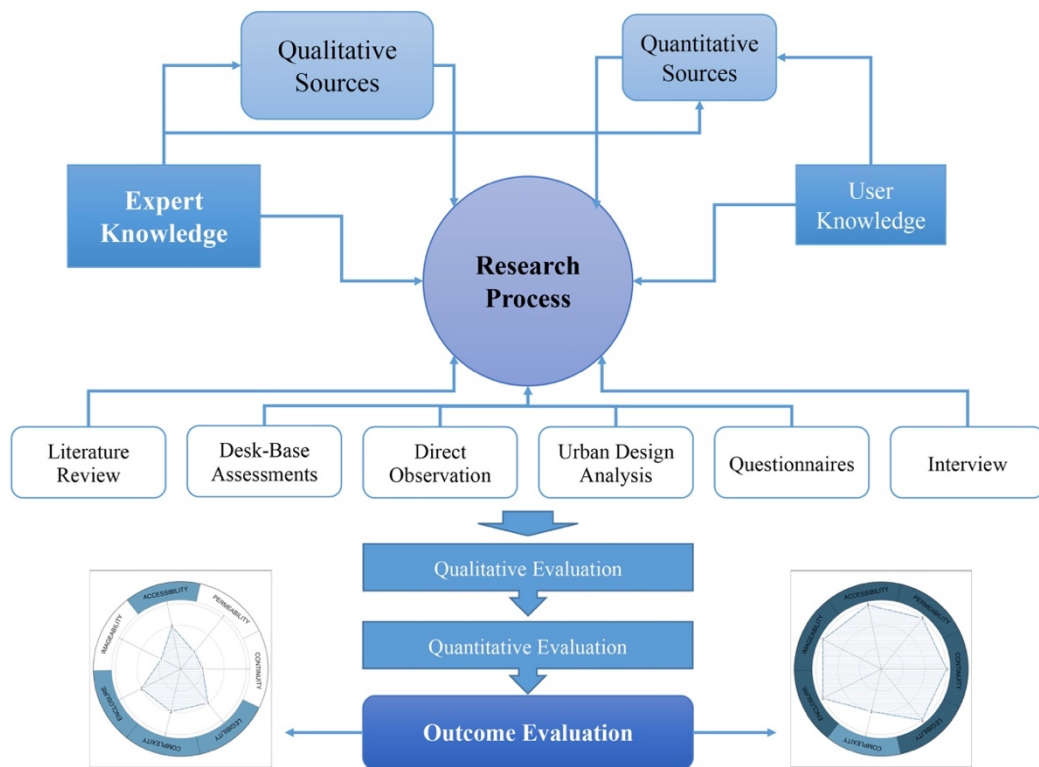


Figure 4.2. Research process of thesis study (Prepared by V. ER)

4.3. Source of Evidence

Literature Review

To begin with archival documents, they composed written reports, books, articles, researches, formal studies or websites related to Atakum Costal Promenade. This source of evidence is used to find out how different zones of Atakum Costal

Promenade acts different with respect to urban morphological variables while being part of same big and important linear public spaces of Samsun. There can be some derivatives; strong publicness, average publicness which means neither strong nor weak and finally weak publicness of three zones of Atakum Coastal Promenade. Addition to verbal information, visual documents like photos, plans and some maps, are the main sources of evidence to analyse all these topics.

Desk-Base Assessments

Desk-based assessment is the important part of data collecting that have three stages of examination. The first stage is that research analyse the historical development of the case study area in order to understand its features. The second one is the cementation of current maps showing land-use and the characteristics of publicness of public space. The last one includes a subjective observation revealing the publicness indicators relating.

Direct Observation

Direct observation is the third source of evidence to gather data in this study. The case site was visited several times to determine the profile of the users, note how often they visited the site, understand the current spatial organization and observe the characteristics of the coastal road. In addition, photographs were taken to identify the issues examined in relation to the introduction of Atakum Coastal Promenade.

The number of users of three main public spaces was counted for one hour in three different time-intervals of the day. The total number of public space users in a weekday and weekend were determined. Table 4.1 and Table 4.2 indicate the number of pedestrians passing from the public space in one hour at the different time periods in a day. The amount of people in time period determined according to peak and rush hours for the case study area. According to the finding results, it can be seen that beginning of the working hours at the morning has low rate but lunch break and especially ends of the working hours have really high rate (Figure 4.3).

Table 4.1. Approximate number of people in three zones at weekend

	Weekend		
	8:30 - 9:30	12:30 - 13:30	17:30 - 18:30
Zone 1 Kurupelit Marina	64	588	882
Zone 2 Çobanlı Pier	504	1508	3317
Zone 3 Yeşilyurt Shopping Mall	184	764	1375

Table 4.2. Approximate number of people in three zones at weekend

	Weekday		
	8:30 - 9:30	12:30 - 13:30	17:30 - 18:30
Zone 1 Kurupelit Marina	45	411	610
Zone 2 Çobanlı Pier	377	1091	2554
Zone 3 Yeşilyurt Shopping Mall	127	428	994

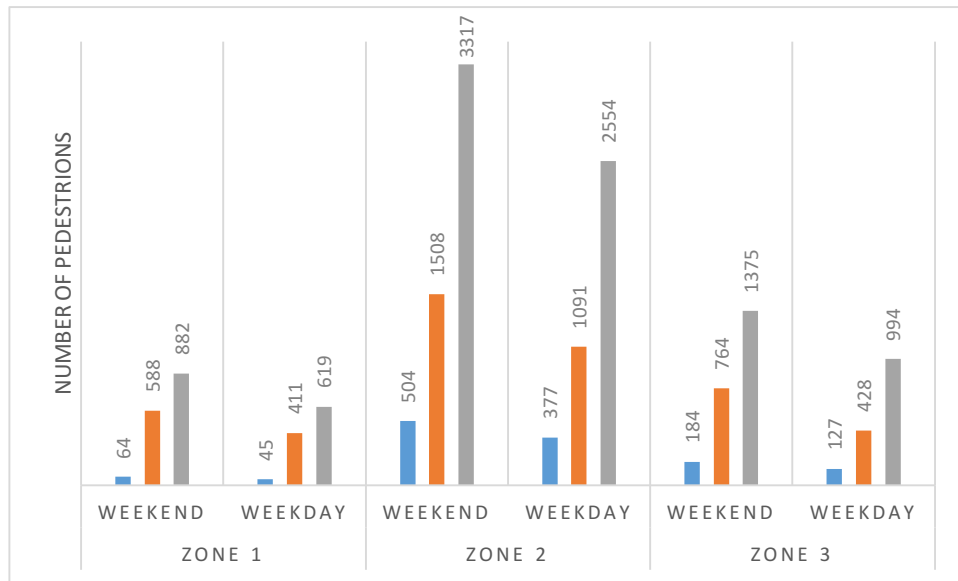


Figure 4.3. Overall results of the number of people in three zones at both weekday and weekend (Prepared by V. ER)

Urban Design Analysis

Urban design analysis tools were carried out to evaluate the case study area with its environs in a wider context of historic city centre. Spatial analyses were made in order to investigate the effects of morphological changes on public spaces. Maps were prepared regarding the publicness of public spaces. The extensive survey in Atakum and Samsun Urban Development in terms of Urban Planning Studies is crucial to define different character zones in coast roads by an overall analysis.

Questionnaires

Questionnaires were used to reveal the perception of the public spaces' users on publicness issues as regards morphological dimensions. 104 questionnaires were conducted in three different zones and it includes 46 questions / statements and responses required less than 15 minutes to maximize responses (Appendix-A). Questionnaires are categorized in four different types; multiple, scale / close-ended, open-ended and demographic questions. Close-ended questions are prepared according to the Likert Scale. At the end of questionnaire, respondents are kindly invited to draw a cognitive map to measure perception of public spaces 'users in case study area.

Finally, questionnaires were investigated by using the Statistical Package for the Social Sciences (SPSS) program. Statistical analyses, cross tables and frequencies were conducted in SPSS to evaluate answers of questionnaire for each three zone of Atakum Coastal Road.

Table 4.3. *Outline of the data collection for the questionnaires*

Data Source	When Collected	How Analysed	Used For
Mainly Architecture Faculty Students	07.05.2019 (12:00-18:00)	Descriptive statistics	To collect information on publicness of three zones' public spaces regarding morphological dimensions
Some Academicians	07.05.2019 (10:00-15:00)	Scaled Questions Frequency analysis	
Sample Group of Public Space Users	08.05.2019) (14:00-19:00)	Missing data analysis	

As can be seen in Table 4.3, not only expert opinion but also user opinion were taken as the basis of the survey studies. However, since it is mostly done with the students and academics of the faculty of architecture, it is aimed to be based more on expert opinion.

Interview

Interviews were carried out with the academicians who specialized on architecture and city planning in terms of urban morphology. To understand especially permeability dimension of public space, some questions were prepared for these academicians to clarify this issue more professionally. These questions;

- Does the location and orientation of building structures facing the beach increase the permeability of the area?
- Do you find the street pattern regular?
- When it comes to the permeability of the coastal road to the inner parts, do you find the width of the main and side streets sufficient?

- Does the existence of some dead-end streets jeopardize the permeability of the area?
- Do you think that the coastal construction is under intense construction that will leave the coastal road under the pressure of rent?
- Do you think that the important urban gaps (park, sports area, garden, etc.) in the region are sufficient to ensure that the coastal road is not disconnected from the city?
- Does the scale and design of the structures in the region increase the permeability of the region?
- Do you think that the coastal relationship with the inner part of the city, which has a strong development parallel to the sea with the Black Sea coastal road and tram axles, is strong?
- What are the future dangers for the permeability of the Atakum coastal road?

The permeability dimension was not asked to the survey questions because it required more expert opinion while obtaining the findings in the field related to this variable. Therefore, this principle has been taken into consideration only on the basis of qualitative data.

4.4. Preparation of The Questions

The questionnaires are planned to look for information about the publicness of public space in terms of its current users. For this purpose, four types of questions were used. These are:

Multiple-Choice Questions

These questions were used to learn if there can many reasons for a truth. To exemplify, such questions were asked to determine the reasons behind the transportation and the preferred activities in the public sphere.

Scaled and Close-Ended Questions (Likert Response Scale)

Scaled questions were used in the determining the levels of difficulty in accessing public space. Thus, a general rating about the accessibility of space was obtained. Close-ended questions are prepared according to Likert Scale, rated on three degrees, scoring as agree, partially agree, disagree.

Open-Ended Questions

Open-ended questions were applied to get explanations of the users' perception of public space on car parking areas and to determine which neighbourhoods people come from. Also, they were used for finding out alternative zone expect three study zones with the reasons as regards their expectations for the future of Atakum Coastal Road. For this purpose, the common answers about the expectations of the current users were picked up to give a general idea about the users' opinions.

Demographic Questions

Demographic questions were prepared in order to clarify the user profiles. Moreover, they were used to guaranteed a variety of participants be involved in this study with both different ages and different educational study.

Table 4.4. *The distribution of survey participants*

		GENDER		NUMBER OF	
		Male	Female	Number	%
AGE GROUPS	16-25	43	40	83	80
	25-45	7	8	15	13
	45-65	3	2	5	6
	+65	1		1	2
	Total	54 (%52)	50 (%48)	104	100
EDUCATIONAL STATUS	Primary School	1		1	2
	High School	5	5	10	9
	University	42	40	82	78
	Graduate	6	5	11	11
	Total	54 (%52)	50 (%48)	104	100

As can be seen in Table 4.4, the majority of users are in the 16-25 age range. The main reason for this is that, as we mentioned before, the questionnaires were usually conducted with 3rd and 4th grade students of the faculty of architecture.

4.5. Conduct of The Questionnaires

Questionnaires were made between 7-9 May 2019 during 10:00 – 19:00 on mainly architecture students and academics and also sample group of public space users. In other words, the total sample constitutes of 104 participants who are chosen in mainly architecture faculty’ students and instructors. Rest of participants consist people who meander in the public spaces.

4.6. Demographic Profile of Participants

According to the survey investigation, 45,2% of the respondents has seen the public zones in majority for last three years. Additionally, 28,8% of the participant has seen the public space. Only 1% of the respondents have been visiting the public space first time (Table 4.5). This information shows that the intensity of the use of the Atakum Coastal Road in the last seven years is higher than other interval years. The main reason behind this situation can be recent rapid urbanization.

Table 4.5. *The interval of use within the sample group*

	First Time	0-6 Months	1-3 Years	3-7 Years	7-10 Years	10-20 Years	Total
Number	1	2	47	30	7	17	104
%	1	1,9	45,2	28,8	6,7	16,3	100

Sample group member come from different destinations, including many different neighbourhoods. Respondent come from not only neighbourhood of Atakum but also some district of city centre. Denizevleri (12%) and Güzelyalı (12%) have highest number among all neighbourhoods. On the other side, a large number of the respondents coming from city centre of the Samsun which are located on the east part of Atakum, are really high with %27 (Table 4.6).

Table 4.6. Respondents come from different destinations

	DISTRICT	NUMBER	%
ATAKUM	Denizevleri	14	13
	Güzelyalı	14	13
	Esenevler	7	7
	Mimarsinan	7	7
	Körfez	6	6
	Yenimahalle	12	12
	Cumhuriyet	7	7
SAMSUN	City Center	28	27
	City Surrounding	3	3
OTHER	Outside City	6	6
TOTAL		104	100

As a result of the analysis conducted on the frequent visits of public spaces, as seen in Table 4.7, the majority of the users visit the public space 3-4 times a week. This result is really crucial because this information shows that it is significantly higher that users visit the public space.

Table 4.7. *The frequency of visiting by the participants*

FREQUENCY	NUMBER	%
Everyday	26	23
Every Weekday	4	4
Every Weekend	13	11
1-2 Times a Week	23	20
3-4 Times a Week	37	32
Once a Month	11	10
Total	114	100

CHAPTER 5

HISTORY OF ATAKUM AND SAMSUM

There are a number of factors influencing the establishment and development of a city. The first one is the location of the city. The location determines the relationship between the site and the situation of the city. If these relations are strong, the city grows and develops. When it is opposite, it becomes smaller and gradually loses its importance. The most important factor in the establishment and development of the city of Samsun is due to its location. Samsun city is the middle of the Black Sea Region and is located on the shore of a small bay at almost the same distance to the two large delta lices formed by the alluvial deposits brought by the Kızılırmak and Yeşilirmak Rivers (Yılmaz, 2011).

The city owes its importance to the fact that the roads coming from the inner regions reached the Black Sea. Throughout history, these roads that connect the Black Sea to a wide hinterland extending to Mesopotamia have served as caravan routes for centuries. Samsun is the gateway of a wide hinterland to the Black Sea thanks to these roads. It is also the starting point for connecting the Black Sea to the interior of Anatolia, Persian Gulf and the Mediterranean world. Thus, Samsun city is a port city that serves as a transfer station between sea and land vehicles of various goods and goods. Samsun city, which was open to storms in the past but still provided partial protection to the ships, became a real port city with the construction of modern port facilities in 1950s. The city, which continues to this identity until today, is also a commercial center of Sinop, Ordu, Amasya, Çorum and Tokat (Yılmaz, 2011).

Apart from the horizontal growth and expansion, the city of Samsun has never changed during the history. This situation is related to the geographic location of the city (site and situation). Only the first place where it was founded today Karasamsun

from the hilly area of the sea to the coast in time, showed an improvement in the east direction approached the beach. For centuries, the city had been surrounded by the Kalyon (Fener) Burnu in the west and the Mert River in the east (Yılmaz, 2011).

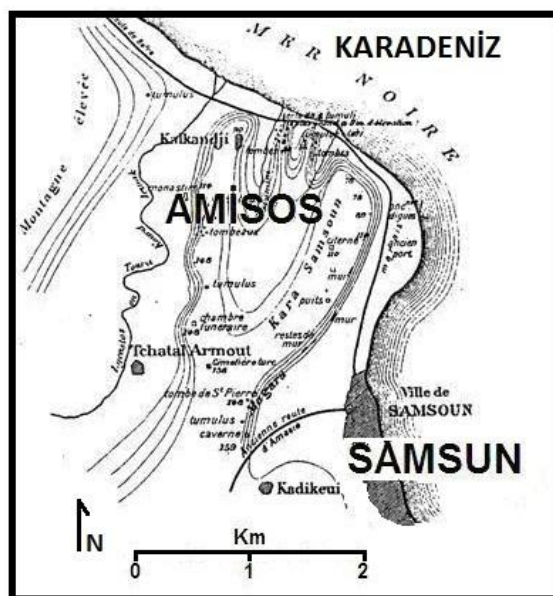


Figure 5.1. Amisos (Karasamsun) and Muslüman Samsun (Yılmaz, 2011, p.2)

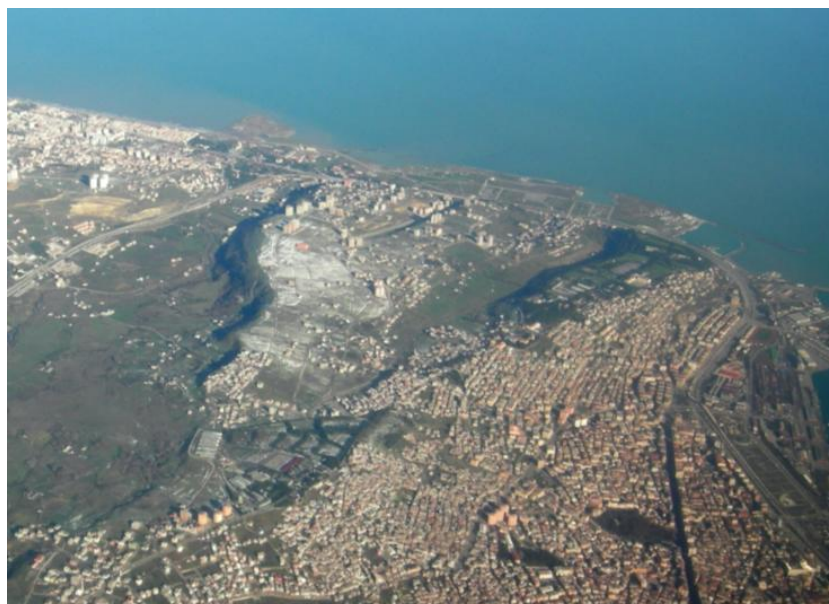


Figure 5.2. Amisos (Karasamsun) and Muslüman Samsun in 2011 (Yılmaz, 2011, p.2)

With the help of the Kanyon Burnu, Samsun do not affect by dominant wind direction which is northwest and this contributes to makes Samsun settlement relatively safe. This situation provided partial protection in stormy weather, which has been an important factor in the port identity of the city. The fact that Mustafa Kemal Atatürk chose Samsun as the destination of Anatolia to start the National Struggle is also related to this characteristic of the city, namely its location and hinterland (Yılmaz, 2011).

This chapter begins with the historical development, morphological development and Atakum as a new development corridor of Samsun. Moreover, it continues with showing the general features of the case study area in detail to determine the current issues and dynamics in Atakum Coastal Promenade. The first part of this chapter evaluates factors effecting development of Samsun as a Black Sea Port City. Then, it evaluates the historical development, population growth and migration of Samsun regarding urban planning studies to get general information about how city macroform changed. The next part includes the morphological development of the city to determine position of Atakum within the recent development corridors of Samsun. Furthermore, it discusses the recent case study about the morphological changes of Samsun in terms of urban sprawl to understand what changes will occur in the future of Atakum. Next, the general characteristics of the case study site are defined with respect to three main zones. Finally, the last part evaluates the essential characteristics of zones of the case study area and its environs.

5.1. Historical Development, Population Growth and Migration

Samsun is not considered as developing city in terms of urban sprawl in the period from the 12th century until the 17th century. Muslim Samsun is a city founded by Turks. There is a castle in the city centre as in other cities. Samsun could be seen as a castle city rather than port city in that period of time. The main activity occurred in the walls. Over time, the city began to spread out of the walls (Yılmaz, 2011).

Samsun began to gain importance due to the revival of trade between Black Sea Ports and Crimea in the 18th century. Crimea was dominated by Russia and trade in Samsun took a big blow and the city was in recession again. Population of Samsun was about 2000 and city was seen as a town surrounded by wall and green areas such as wildflowers. City started to transform castle city with walls to port cities. It was seen some commercial ships on the sea side in that period. This changing had a huge effect on the population movement and migration to city centre increased fast and finally population of Samsun reached about 10000 in 1850s (Yılmaz, 2011).

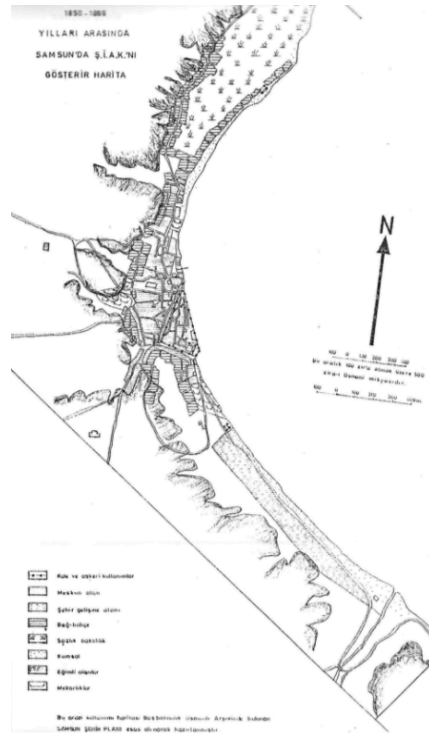


Figure 5.3. Samsun urban settlement between 1850 and 1869 (Uzuneminoğlu' archive document, 1993)

The fire that took place in 1869 caused a great destruction in the city. The city suffered a major fire in 1869, and before the fire there were about 1100 inhabitants, which decreased significantly during the fire. However, in the beginning of the 20th century, the city was able to recover itself. After the fire, an urban plan from France was re-prepared and according to this plan, houses and other public buildings, mostly

consisting of two-storey masonry buildings, were built in the city and the street system, which cut each other vertically (Figure 5.4 and 5.5) (Yılmaz, 2011).

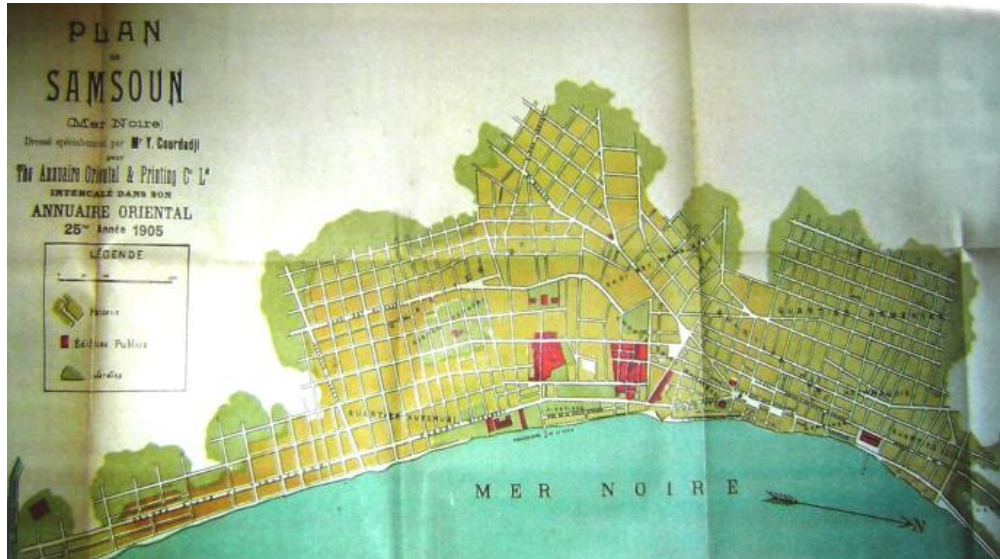


Figure 5.4. Samsun city plan in the early 20th century (Yılmaz, 2011, p.4)



Figure 5.5. Street systems vertical to sea established according to Samsun city plan in the early 20th century (Yılmaz, 2011, p.4)

In the mid 19th century, the opening of the Black Sea to steam ships helped to revitalize the city economically. The spread of high-quality tobacco cultivation from Bafra to Samsun region has been effective in increasing the population of the city. As a matter of fact, at the end of the 19th century, the city was included in the middle-income cities by the commissions established to determine the level of income of the state. In this period, the city's hinterland is quite wide and the city is the passenger port of Diyarbakir, Harput and Sivas. Even passengers from Istanbul to Baghdad come to Samsun first by sea, from here by road to Baghdad, or from Baghdad by the highway first come to Samsun, then from here by ships to Istanbul. Thanks to the large number of ships in the port of Samsun during this period, imports and exports in the city have increased and Samsun has become one of the important export ports of Anatolia, especially tobacco, grain and leather (Yılmaz, 2011).

This situation brought Samsun to the forefront due to its port characteristic. The city also started to attract the interest of European traders and some of them settled in the city and caused a significant increase in Levantine structures in the city. It is estimated that there are 20.000 population in Samsun at the beginning of the National Struggle. The proportion of non-Muslims in this population is remarkable. During the 19th century, the turmoil and political mobility in the region caused the non-Muslim population to intensify in the city, which closely affected the city population (Yılmaz, 2011).

As a result of internal and external turmoil in the country, Samsun has been the scene of a significant population flow on migration routes in 20th century. There were four large migration waves happened in Samsun (Yılmaz, 2011).

- The first mass immigration movements took place after the Crimean War. A significant portion of the population that could not be settled in the city due to the reasons as regards epidemic diseases and deaths and thus they were settled surrounding and the inner regions of Samsun.

- The second major wave of migration took place with the Doksanüç War. A large number of Muslims fleeing from the Balkans and the Caucasus took refuge in Samsun at that time. Samsun was both a transit base and a permanent settlement area. Some of the 100,000 migrants who came to Samsun were settled in the city centre and a large part of them were sent to inner provinces.
- The third major wave of migration took place during the World War I. As a result of the Russian occupying the region from Harşit to the Black Sea region, Muslim refugees in the province of Trabzon, which was exposed to occupation, sought refuge in Samsun by sea or road.
- Finally, Samsun faced with the intervention accordance with the agreements made with the establishment of the Republic of Turkey. As a result of the migration from Greece, the Turkish population of the city has increased considerably, and the city of Samsun has become a small miniature of the Ottoman geography with the effect of all these exoduses.

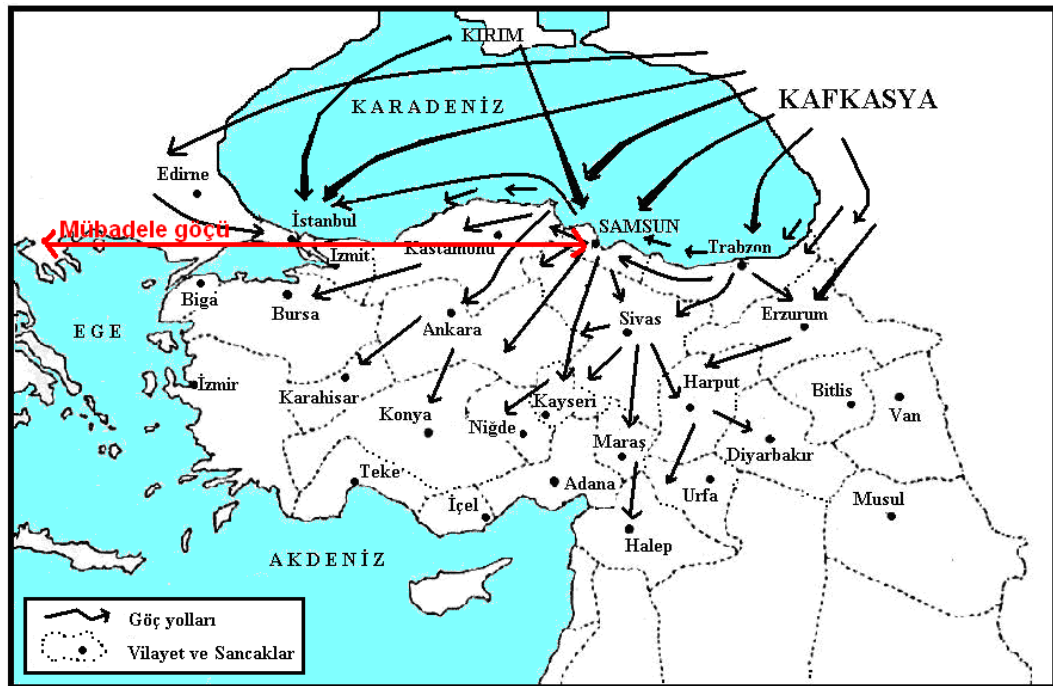


Figure 5.6. Location of Samsun on the Ottoman migration routes (Yılmaz, 2011, p.4)

Furthermore, Samsun experienced population mobility with external migrations until the early republic period. However, Turkey faced many migration rural areas to city centre in 1950s. Samsun one of the most important examples of rural-urban migration movements. In this period, along with port construction and similar works, the relative development efforts in the city cause migration from the east provinces. While some of these migrations are directed to the plains of Bafra and Çarşamba, the main target is still Samsun city (Yılmaz, 2011).

If we look at the economic development of the city in parallel with the development of the city population; the city of Samsun has also come to the forefront with its harbour identity and related trade activities since the first years of the Republic. Loading and unloading were done from the piers in the bay in front of the city. These scaffolds were 8 pieces and they were called as Şimendifer, Yolcu, Tütün, Gümrük (Yük), Gaz, Dakik (Un), Zahir and Park Piers according to their function (Yılmaz, 2011).



Figure 5.7. Samsun piers, warehouses and rail connections (before the modern port is built) (Yılmaz, 2011, p.7)

The lack of a railway linking Samsun to the inner parts was seen as a major deficiency since the early years of the Republic. As a matter of fact, the construction of Samsun-Sivas railway was one of the first projects after the establishment of the Republic and the first 50 km of the line was opened in 1926. The railway was delivered to Sivas in 1932 and then it was extended 39 km to east direction of city to connect Samsun and Çarşamba in 1933 (Yılmaz, 2011).

With the arrival of the railway to Samsun, the port became more important and the requirement for a modern port increased. Because of the economic difficulties in the first years of the Republic, Samsun could not get a result from the undertakings that were previously undertaken to have a port worthy of its position and importance. However, the state succeeded in this work and modern port foundation was laid in 1953 and then new modern port started to serve in 1960 after construction of the jetty and new piers. As a result, Samsun Port has become a harbour where significant loading and unloading could be made (Yılmaz, 2011).



Figure 5.8. Modern Samsun port and RO-RO vessel (Yılmaz, 2011, p.7)

The administrators of that period built Samsun-Sivas, Samsun-Bafra and Samsun-Çarşamba-Terme-Unye (highways) and tried to connect the city to Eastern Black Sea and East Anatolia through Central Anatolia. As a result of the connection of Central Anatolia to the Black Sea ports, the goods coming from Central Anatolia were exported to the port of Samsun and the imported products were also sent to the Central Anatolia and Eastern Anatolia via the highway. Samsun, which started in the 1950s and has now become the double roads, has become the exit point of the Black Sea provinces to Anatolia (Yılmaz, 2011).

Moreover, Samsun became one of the most leading cities in a short time by the help of being the nodes of sea (port), railways and roads. This economic vitality contributed to the construction of second largest trade fair like Samsun Fair. At the same time, Samsun had become a major center of attraction and had received a considerable amount of immigration. This process continued until the 1980s (Yılmaz, 2011).

Recent decades, mobility in the population has been seen in the city. When they first come to the city, people who settle inexpensive houses around the city change places in the city in case of having chance to financial possibility. Thus, while the old districts are abandoned from low-income rural people who want inexpensive housing, those with relatively better economic conditions migrate to better-developed neighbourhoods such as Atakum. In the meantime, while the central business area remains constant, new residential areas are so far away from the center in the western direction brings with them many problems, especially transportation problems. This process still continues rapidly today (Yılmaz, 2011).

To sum up, with all these and other developments, the city of Samsun has grown rapidly and has taken its present-day appearance. While the city occupied 88 hectares in the 1850s, 256 hectares in 1950 and 1,304 hectares in 1985. Today, the settled urban area within the boundaries of Samsun Metropolitan Municipality has reached approximately 12,500 hectares. The city of Samsun, which is the old Samsun center, has an area of approximately 50 km in length from the Çınarlık district in the east to Taflan in the west and approximately 20 km in depth from the Ankara road (Yılmaz, 2011).

5.2. Recent Development Corridors of Samsun as Black Sea Port City

The city of Samsun is the ancient city of Amisos (where today's Kalkanca neighborhood is located). Urban development from the city of Amisos to today's administrative and commercial center of the Cumhuriyet Square happened in around the 5-6 century. The city has almost never changed until the last 40-50 ago. The city was spread between the hillside from the coastal area where the port facilities were located. it has also spread to some extent in the west and mainly urban settlement existed between Kalyon Burnu and Mert River (Yılmaz, 2011).

However, the most dramatic changes have been taken place recent decades and still increase incrementally. There were three main new development corridors of urban settlement (Yılmaz, 2011).

East Development Corridor (Canik, Kutlukent, Tekkeköy, Çarşamba)

The spatial development of Samsun did not exceed the east of the Mert River until the 1950s. The main reason for this was the mud of the Mert River valley and the places where it spilled into the sea. In this period, it was difficult to struggle with this problem, but since the 1950s, with the help of the regulation, these areas were opened for settlement. Thus, the urban development exceeded the Mert River and the city started to develop in the horizontal direction towards Çarşamba District by the help of new road construction. This area, which was previously preferred by low income groups due to poor environmental conditions, was intensively populated by the deployment of the small industrial sites (Yılmaz, 2011).



Figure 5.9. Urban settlement on Mert River valley (Yılmaz, 2011, p.13).



Figure 5.10. Today' Urban Settlement on Mert River valley (maps.google.com, 2019)

Factors such as the extension of the Samsun Peripheral Highway and the railway line extending to Trabzon caused the eastern axis of the city to grow rapidly. Moreover, the presence of industrial sites and the need for housing that came with it have supported this development. With such factors, it has become a center of attraction for both the municipality and private investors (Yılmaz, 2011).

Besides, nitrogen and copper factories built on the shores of Tekkeköy at the beginning of 1970s and the facilitating factors in the transportation activities of the workers increased the interest in this sector over time. In the following years, the selection of this region as an industrial area resulted in the construction of the organized industry, the establishment of small and medium-sized manufacturers. The economic activities developed and the population and settlement density increased accordingly. This process even led to the emergence of new local municipality in the area under the name of Kutlukent to administrate the developing urban areas (Yılmaz, 2011).

Industrial and residential areas are intertwined due to lack of planning in Tekkek y. Urban settlement, which was considered as a residential area for the population working in the industrial sector in the early years, lost this attraction and took a view of a town lagging behind the industrial zone (Yılmaz, 2011).



Figure 5.11: Samsun 's east direction development by invading valley; development Tekkek y to  arşamba (Yılmaz, 2011, p.14)

In conclusion, when we take all this information mentioned above into consideration, it can be said that this urban area will be settled with industrial facilities rather than residential areas.  arşamba' Plain, one of Turkey's most fertile land, suffered by persistently industrial facilities and lands on the west of the it is under the pressure of urban development. These areas are included in the metropolitan borders and the status of urban areas has been achieved to reserve as a new potential settlement area (Yılmaz, 2011).

South Development Corridors (Ankara Highway Road, Ring Road, Bus Station, Yeşilkent, Kavak)

The hilly areas at the 100-150 m highs behind the city center (south of Samsun) formed the southern boundary of urban development and the city could not cross over these obstacles. However, the ease of transportation provided by the Ankara road route has brought this section to the forefront with the help of the Metropolitan Municipality. The construction of the ring road, the transportation of the bus station to this region, then the Food Wholesalers and Fish Market, as well as a large shopping center has been effective in the development of the city in the south direction (Yılmaz, 2011).

However, due to the ground problem caused by the fact that most of the land is a landslide area, this region cannot be preferred for a long time in terms of housing settlements. The only exception here is the surroundings of Yeşilkent, where land conditions seem suitable for housing construction. Rest of this area cannot be said to be more suitable for urbanization than Atakum (Yılmaz, 2011).

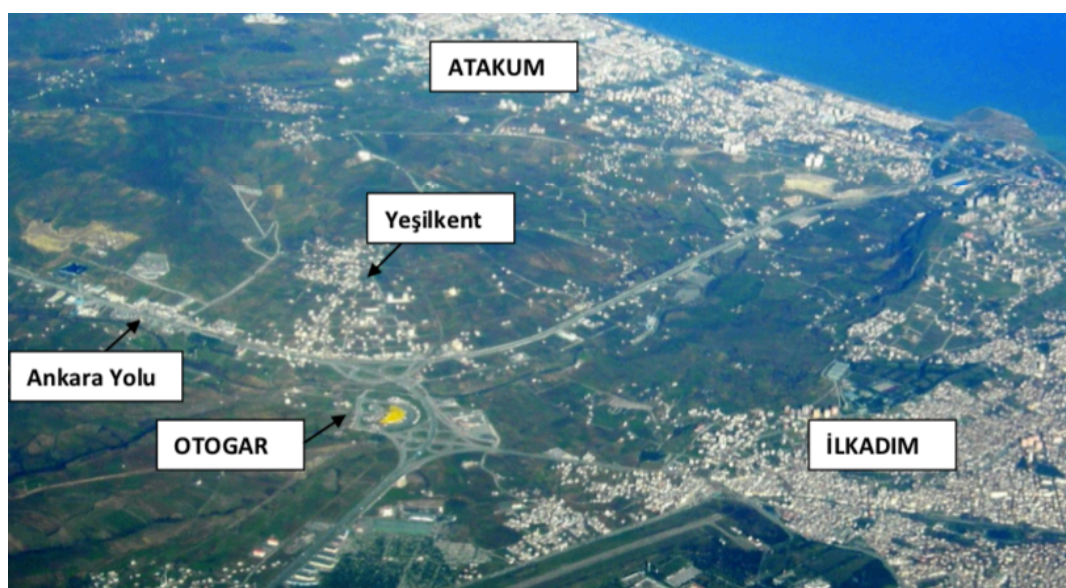


Figure 5.12. Development areas of Samsun city center in the south direction around Ankara and Bus Station.

West Development Corridor (Atakum, Kurupelit, Taflan, Ondokuzmayıs, Bafra)

Samsun city has started to emigrate since the 1950s depending on internal migration and rapid urbanization in Turkey. In a short time, it has become one of the top 10 cities in terms of Turkey's economic and social development by using the advantage of the commercial center (Yılmaz, 2011).

Atakum District is an important urban area located in the west of Samsun and rapidly urbanizing. Although the former urban settlement was mostly a summer residence, it has gained a new identity with high rise building settlements and rapid urbanization. The city's current trade and the associated merchant class used the Atakum coasts as a summer resort and the villas they built into the gardens at first. They are the city's first settlement movement in the west. Public building constructions such as DSI, Highways and Rural Services contribute to increase urban development and transform ideology of Atakum city from period(summer) settlement to permanent settlement (Yılmaz, 2011).

It has become a center of attraction in a short time between the city center and the university as a result of the circulation of the patients, students and other public officials who have emerged with the effect of OMÜ Faculty of Medicine Hospital and other faculties and colleges which were established to serve in 1986 in Kurupelit. Furthermore, the highway that draws a linear line from the south of the summer houses on the shore has attracted the population in time (Figure 5.13). The lands used as the agricultural area of Balaç village have become unrecognizable by the housing constructions in a short time. Construction activities continued to progress both in the southern direction towards the slopes and in the west. Urban development extended to the University intersection in a short time (Yılmaz, 2011).



Figure 5.14. Current 1/1000 development plan of Atakum (Municipality of Atakum, 2019)

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Figure 5.15: Atakum coast in the 1970s and 2000s (Yılmaz, 2011, p.11).

Atakum region has become a center of attraction for the upper and middle income groups because of the difficulties of Samsun city center such as congestion, distorted urbanization, pollution and traffic intensity. This demand also affected the coastal houses in the garden which was previously used as a summer residence. After increasing land prices, there existed a great demand for these residences in terms of beginning the transforming summer residence buildings with maximum two floors to high rise buildings (Yılmaz, 2011). This dramatic change is evident from the difference between the two pictures obtained in the 1970s and 2000s shown in Figure 5.15.



Figure 5.16. High rise buildings along the tram and Atatürk Boulevard (Yılmaz, 2011, p.12).

Moreover, such rapid development of Samsun in the direction of Atakum brought mass, collective and social housing applications. Pelitköy and Kamalı public housing areas were built. This type of investments increased by especially the rail system

construction and thus Atakum more attractive as regard fast urbanization. Urban sprawl existed towards both the east-west direction and the coastal side to the south along the slope (Yılmaz, 2011).

While the villas in the coastal zone extending from Atakum to Kurupelit turn into apartments, Atakum, Catalagam, Taflan and Derekoy coast band, which are more faraway than Kurupelit, became the new summer house development area of Samsun (Figure 5.18). This area extending from Kurupelit to Ondokuzmayıs beaches is the most important recreation area of Samsun today. It is not a prophecy to say that this site, which was settled quickly with summer houses, would soon become a permanent settlement just like Atakum. Because the highway has been double duplexed and the rail system extended up to Kurupelit, land prices increased and faced with the urban transformation project. As a matter of fact, in order to control and carry out all these rapid developments, local municipalities other than Atakum were shut down and were taken over by the municipality of Atakum and within the borders of the Metropolitan Municipality. When the population exceeds 110.000, Atakum has become the fastest growing and the most populous municipality within the boundaries of Samsun Metropolitan Municipality (Yılmaz, 2011).



Figure 5.17: New summer houses between Dereköy and Engiz (Yılmaz, 2011, p.12).



Figure 5.18: New summer houses between İncesu and Taflan (Yılmaz, 2011, p.12).

5.3. Morphological Development of Atakum Sahil Yolu

In the beginning of the last century, Samsun was generally famous for its two-storey houses and gardens. This feature was preserved until the 1950s. However, the university and other educational investments are the first developments to enhance Samsun city to the west (Atakum) region. Then, with the construction of public spaces such as DSI and General Directorate of Highways, the development towards west has accelerated after 1950s (Yılmaz, 2011).

The city has changed so quickly that few of these houses could have survived and the old Samsun houses in the garden could have turned to an apartment building. Another dramatic change was experienced on the coastline and a significant portion of the natural coasts were rapidly destroyed by being victimized because of distorted urbanization. A rapid construction has begun, which cuts off the link between the people and the sea. The city continued to grow in an uncontrollable way and the city, which spread very little from 1893 to 1963 to 70 years, has grown rapidly since 1970's and finally it has become a 50 km long, single center, linear city with the participation

of the surrounding municipalities. This spread took place in three directions: west (Atakum), east (Tekkeköy) and south (Ankara Road) (Yılmaz, 2011).

The population trapped in the center of the city first moved beyond Kalyon Burnu and moved towards Atakum in the west and the location of the university played a major role in this. This migration has been so rapid that Atakum, Samsun's summer house, has passed 100,000 inhabitants in a short time and has been covered with concrete until 2011 and the population of Atakum today exceed 200.000 (Yılmaz, 2011).

Table 5.1. Last 10 years' populations of Atakum and Samsun (TSA, 2018)

Year	Population of Atakum	Population of Samsun	Percentage of Atakum Population to Samsun Population	Population Growth Percentage Based on 2009 Year
2009	116503	1250076	9,3	
2010	123904	1252693	9,9	6,4
2011	131355	1251729	10,5	12,7
2012	139730	1251722	11,2	19,9
2013	149226	1261810	11,8	28,1
2014	158031	1269989	12,4	35,6
2015	169809	1279884	13,3	45,8
2016	181302	1295927	14,0	55,6
2017	192953	1312990	14,7	65,6
2018	202618	1335716	15,2	73,9

When the population growth rates of the last ten years are calculated based on 2009, the results show us clearly how the macroform of Atakum city is changing rapidly and the rate of urban development is high. Atakum District has been growing 73.9% since 2009 and this growth rate is proof that it is a city that has doubled itself in almost ten years. For the sustainable urbanization of a city, this speed of development and growth can have dangerous consequences.

In order to better understand spatially the urban development of Atakum District and to indicate the main urban reasons behind these developments, Google Earth maps were used in different time periods regarding 2009, 2011, 2015 and 2019.

Urban Settlements in 2009

Atakum generally developed along the Black Sea Coastal Road. Green areas and urban cavities are clearly related to the low density of buildings in the coastal area. Kurupelit Marina and Çobanlı Pier, which are research areas as Zone 1 and Zone 2, respectively, have not been constructed yet. Only Yesilyurt Shopping Center and Public Pier (Small Pier) are available.

The existence of agricultural and green areas in the urban periphery areas proves that there was not much construction in the city surrounding areas at that time. However, mass housing implementations are observed in places, especially in areas close to the university. In short, it is basically a city developing along the east-west axis with the effect of the Black Sea Coastal Road.



Figure 5.19. Urban Settlement of Atakum district in 2009 (Google earth, retrieved in May, 2019)

Urban Settlements in 2011

By considering to Atakum in 2009, the most important difference is that urban sprawl in the city periphery increased. 19 Mayıs University is the most important reason for the increase in urbanization in Zone 1 compared to previous years, which is the most obvious result of the uncontrolled growth from Samsun City to the west direction.

The construction around the Zone 3 was gradually increasing and that Kurupelit Marina, which is the characteristic feature of Zone 1, was built during this period. There was not much construction in Ankara Boulevard during this period but there were few constructions in comparison to the previous year. This means that it will inevitably increase in the following years and may be a new Atakum urban development corridor not only on the east-west axis but also on the south axis.

In this period, there were not many mass housing applications on the city periphery but there were many parcel-based developments by infill urban development and new urban development areas.



Figure 5.20. Urban Settlement of Atakum district in 2011 (Google earth, retrieved in May, 2019)

Urban Settlements in 2015

The most prominent urban features of Atakum during this period are that the development on the coast was increased dangerously and the filling development reached a very high level. As a result of such urban developments, all of the urban components like Zone 1, Zone 2 and Zone 3 have been built at this period of time.

While the construction on the urban periphery was so much in the previous years, the concept of periphery became gradually disappearing in this period because general characteristics of the inner urban development and the urban periphery settlements became similar.

The city continued to develop rapidly along the southern axis. In addition, as a result of this tendency, the constructions along Ankara Boulevard continued increasingly. Uncontrolled urban expansion started to reach its current level at this period.



Figure 5.21. Urban Settlement of Atakum district in 2015 (Google earth, retrieved in May, 2019)

Urban Settlements in 2019

The urbanization has reached a dramatic level. Not only the intensive construction along the east-west axis, but also the construction of the south and especially along the boulevard of Ankara has increased. If the city did not have natural thresholds in the south, this uncontrollable growth would continue its inclination towards the south. However, due to thresholds, the city was forced to grow along the Samsun-Ankara Highway. It is inevitable that this urban growth direction will continue in the future with the establishment of Samsun Bus Station and ring road connection on Samsun-Ankara Highway.

Moreover, the implementation of public housing has increased considerably in the city wall, especially by being built as high-rise buildings. The biggest problem with all this rapid urbanization and rapidly increasing construction is that we cannot define the Atakum's macroform. The fact that urban sprawl reaches an uncontrollable point makes this situation insoluble.



Figure 5.22. Urban Settlement of Atakum district in 2019 (Google earth, retrieved in May, 2019)

In brief, although Atakum represents the modern urban face of Samsun, the development towards the west continues so fast that and this development threatens summer houses on the western areas. This means that Atakum District can continue to be concrete with a linear rapid urbanization parallel to sea by destroying summer houses, agriculture and low density areas. Since physical barriers limit the development of the city in the south, the direction towards Bafra in the west seems to continue. In fact, this process seems to be going much faster due to the fact that the light rail system is activated as well as the two-way road transportation like Black Sea Coast Road.

5.4. Case Study for Modelling Spatial Changes of Coastal Areas in Samsun

There is a case study about modelling of spatial changes in Samsun coastal areas by Cellular Automata-Markov Chain Method by Derya Öztürk who is the member of Department of Geomatics Engineering from Faculty of Engineering at Samsun 19 Mayıs University. When the current situation and future development potential of the

city in Samsun-Center are considered, Atakum District Municipality (formerly Atakum, Atakent, Kurupelit, Altinkum, Çatalçam and Taflan Municipality), İlkadım District Municipality (former İlkadım and Gazi İlkademe), Municipality of Canik District (formerly Canik İlkademe Municipality) and Tekkeköy District Municipality (formerly Tekkeköy and Kutlukent Municipalities) are considered as the coastal line in this study. It is about 45 km long and 12 km wide coastal area is determined by 10 km land direction from the coastal line and 2 km of the sea direction from coastal line (Öztürk, 2013).

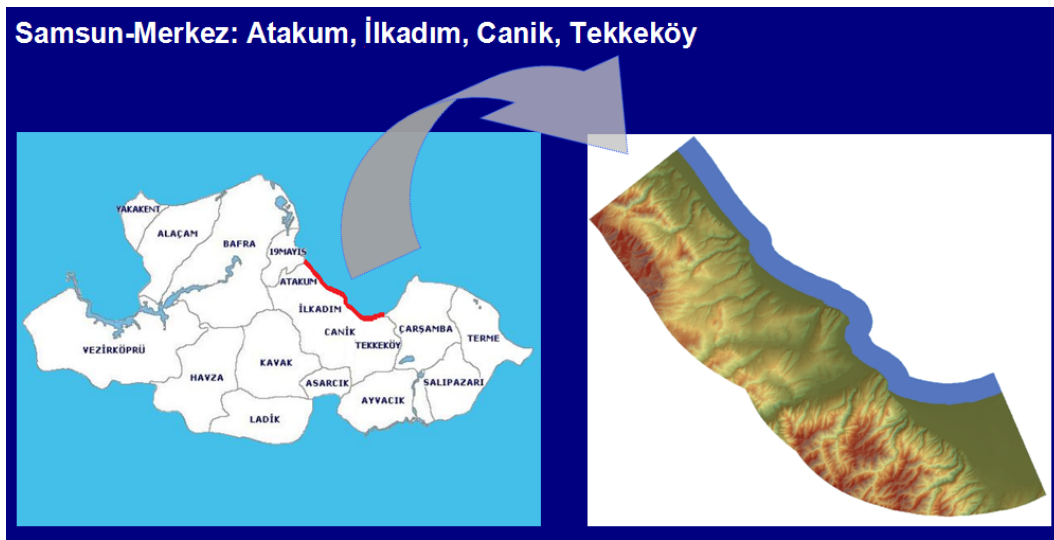


Figure 5.23: Case study area (Öztürk, 2013)

Using the land use and cover of 1987 and 2004, the urban expansion simulation for the year 2034 was carried out with a 30-year period compared to 2004 with the HO-Markov Chain method. In order to check the validity of the study, a simulation was performed for 2009 with a 5-year period compared to 2004 and compared with the satellite image classified in 2009. In order to model changes in land use/cover and urban spread in Samsun-Central coastal areas, land use/cover was determined by use of images of Landsat-TM in 1987, Landsat ETM + in 2004 and 2009. In the rectification of the images, 1/25000 scale topographic maps and 1/1000 scaled current maps were used (Öztürk, 2013).

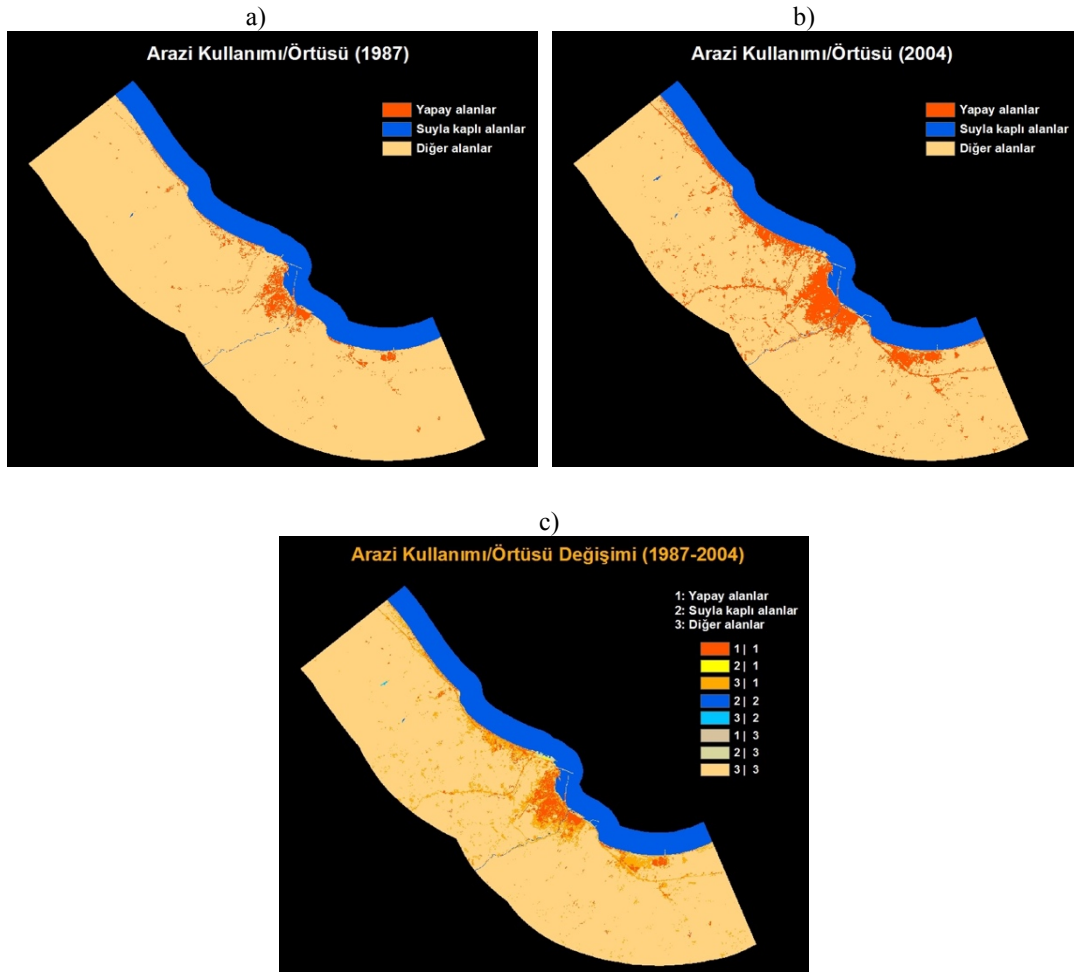


Figure 5.24. a) Land use/cover in 1987 b) Land use/cover in 2004 c) Land use/cover changes between 1987 and 2004 (Öztürk, 2013)

The transition probability matrix indicates the probability of the change of each land use/cover class to other classes within the specified time. The transition area matrix is the number of pixels expected from each land use/cover class to be changed over a period of time and this matrix is obtained by multiplying the transition probability matrix by the number of pixels of the land use/cover classes at the date taken. In the study area, the transition probabilities matrix for 2034 with a 30-year period based on 2004 is given in Table 5.2 and the transition area matrix is given in Table 5.3. The transition probabilities matrix for 2009 is shown in Table 5.4 in 5-year periods and the matrix of transition areas in Table 5.5 (Öztürk, 2013).

Table 5.2. Transition probability matrix for a 30-year period (2034 year) (Öztürk, 2013).

	Artificial Areas	Water Covered Areas	Others Areas	Total
Artificial Areas	0.9658	0.0000	0.0342	1.0000
Water Covered Areas	0.0079	0.9398	0.0523	1.0000
Others Areas	0.1458	0.0005	0.8537	1.0000

Table 5.3. Transition area matrix for 30-year period (2034 year) (Öztürk, 2013).

	Artificial Areas	Water Covered Areas	Others Areas	Total Pixels Number
Artificial Areas	50124	0	1775	51899
Water Covered Areas	711	84543	4705	89959
Others Areas	68723	236	402394	471353
Total Pixels Number	119558	84779	408874	613211

Table 5.4. Transition probabilities matrix for a 5-year period (for 2009) (Öztürk, 2013)

	Artificial Areas	Water Covered Areas	Others Areas	Total
Artificial Areas	0.9693	0.0000	0.0307	1.0000
Water Covered Areas	0.0026	0.9649	0.0325	1.0000
Others Areas	0.0505	0.0002	0.9493	1.0000

Table 5.5. Transition area matrix for a 5-year period (for 2009) (Öztürk, 2013)

	Artificial Areas	Water Covered Areas	Others Areas	Total Pixels Number
Artificial Areas	50306	0	1593	51899
Water Covered Areas	234	86801	2924	89959
Others Areas	23803	94	447456	471353
Total Pixels Number	74343	86895	451973	613211

By using the data of 1987 and 2004, a span of 2034 urban expansion was carried out with a projection of 30 years on the basis of 2004 data in this study. Also, urban sprawl simulation was obtained for 2009 with a projection of 5-year period (Öztürk, 2013).

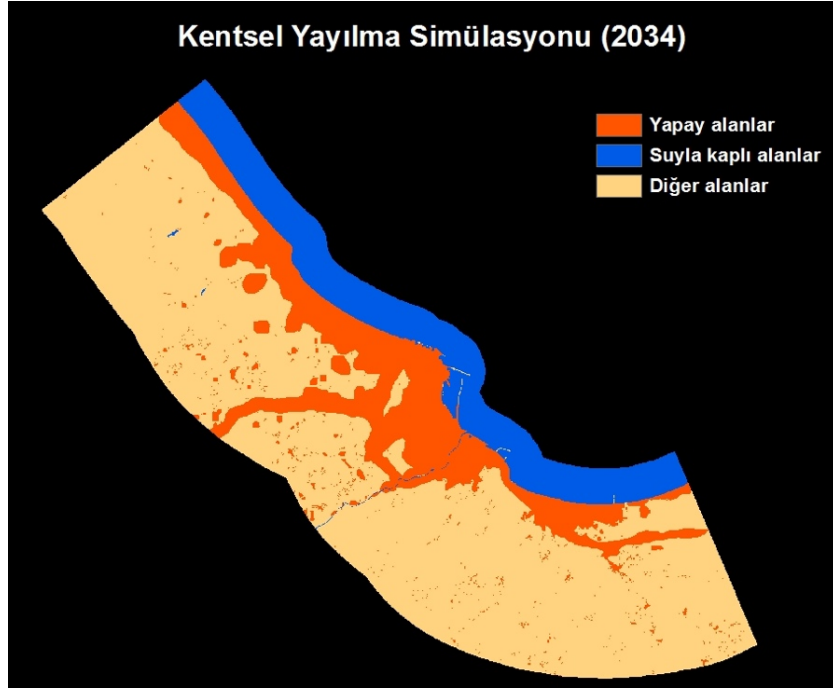


Figure 5.25. Urban spread for 2034 as a result of 30 years of simulation based on 2004 (Öztürk, 2013)

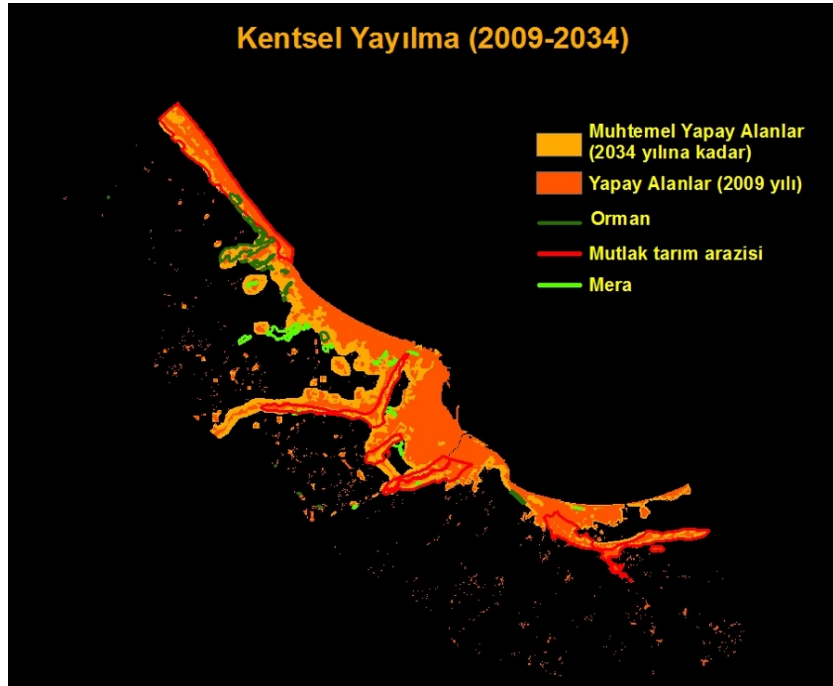


Figure 5.26. Urban sprawl (2009-2034) (Öztürk, 2013)

In this study, the simulation of urban sprawl in Samsun-Central coastal areas for the year 2034 was performed by using Cellular Automata-Markov Chain approach integrated with CBS and Remote Sensing. In order to check the accuracy of the method, the 2009 simulation and the land use / cover obtained from the satellite images of 2009 were compared and the kappa value was found to be 0.85. The land use / cover of 2009 and the simulation of 2034 were overlapped and the expected change areas between 2009-2034 were determined. When the fields of change are examined, it is seen that the possible artificial areas can cause considerable losses in absolute agricultural lands, forest and pasture areas (Öztürk, 2013).

When we consider this study in general, we have similar results to the evaluations we mentioned about Atakum urban development area. The east and west development corridors of Atakum will continue and their development along the Samsun-Ankara highway, which is actually much more primary issue for urban sprawl, will reach a dangerous level at the moment of urban expansion.

5.5. Indicating Common Features of Research Study Area

As we mentioned before, the city of Samsun has been known as a port city in the Black Sea for many years and for this reason many migrations have occurred. Factors such as port features and migration potentials enabled the city to rapidly urbanize. Especially after the 1950s, Atakum district was seen as the development corridor and the eastern axis of Samsun continued this rapid urbanization. Today, Atakum District is among the fastest developing regions in terms of urbanization. The urban macroform of the city is constantly changing and is growing day by day.

Address-based census prepared by Turkey Statistical Agency in 2018, the population of Atakum District and Samsun respectively are 197.618 and 1.335.71 (TSA, 2018). Last ten years' population of Atakum District and Samsun Province are represented in Table 5.1. When percentage of population of Atakum to Samsun for last ten years is considered, it is obvious that Atakum has a rapidly increasing population growth rate and even in just ten years it has nearly doubled its population.

This thesis study is to select some important areas according to different characteristics of Atakum Coastal Road and to make a general evaluation about it. In other words, instead of analysing every space of this coastal road as a whole, research studies were carried out by focusing on some character zones and gathering information about them. For this purpose, observations and analyses have identified public space foci with regards to three different characteristics (Figure 5.28). The urban uses of these focal points will be discussed in detail in the next section, but in general, urban uses in these three different regions are as follows:

Zone 1: Kurupelit Marina

- Kurupelit marina
- Regional car parking
- Urban park with amphi theatre
- Fire department
- Gym center
- High rise residential buildings
- Cafes and restaurants

Zone 2: Çobanlı Pier

- Çobanlı Pier
- Coffee shop
- Çobanlı Square
- Regional car parking
- Beach cafes: Palmiye and Deniz cafes
- Sitting and green areas
- Three or four storey residential buildings
- Gym, children's playgrounds and sports areas
- General Directorate of Meteorology

Zone 3: Yeşilyurt Shopping Mall

- Yeşilyurt shopping mall
- Public pier (Small Pier)
- Atakum Art Center
- Atakum Youth Center
- Municipal wedding hall
- Three or four storey residential buildings
- Cafes and restaurants
- Urban parks
- KYK Dormitories Directorate
- General Directorate of Highways (KGM)
- General Directorate of State Water Affairs (DSİ)

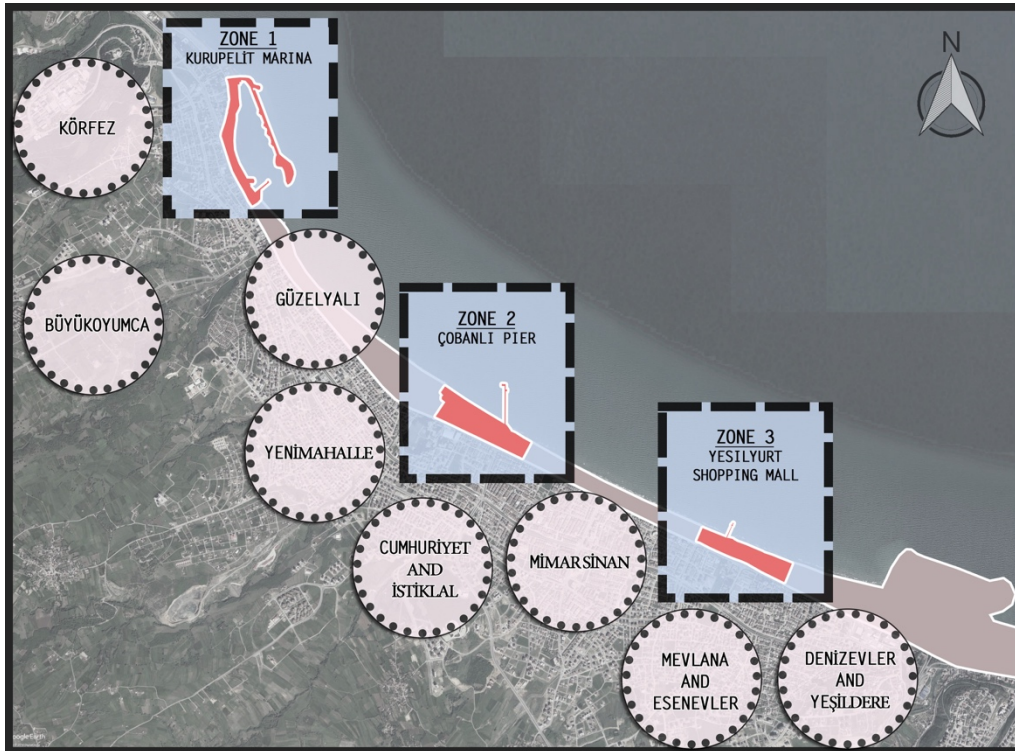


Figure 5.27. Three character zones of Atakum Coastal Promenade with the neighbourhoods

5.6. The Reasons Behind Selection of Study Area

Atakum Coastal Promenade is one of the most significant public spaces of Samsun. With the rapid urbanization and regarding as unplanned economic investment, the use of open spaces in the inner parts is gradually disappearing and in the long term it will be perhaps only one major public space of Samsun in the future. When considering the length and width of it, it can be said that Atakum Coastal Promenade may be one of the largest public coast areas in Turkey. A linear public domain of such importance is under the influence of many factors. For this reason, this area, which is seen as a single public space, shows a very different level of publicity within itself.

Some areas are fully supported by public building investments, and the use of space shows an incredible difference between day and night. Some areas are completely surrounded by cafes and restaurants. This shows that people use these areas at any time of the day. There are also some areas that only increase and decrease in intensity at certain times. Because of this situation result the large open area and pier within the coastal road, this region differs from the other two regions.

The main reason why this research study area is chosen is that this area same public space has the same name but different public space with different character areas can be exist with the effect of external factors (six main morphological principles). To analyse, visualize and present by defined model in order to indicate differentiation is the most important aim of this thesis.

We have already mentioned that by using qualitative and quantitative information and we will test this information with expert and user knowledge and then draw a general conclusion and finally visualize this general assessment with a model, and investigate the publicity of the public space. If we add about this subject in this section, this research method will be done for the analysis of these three different characters determined by preliminary studies and not for the general Atakum Coastal Promenade.

CHAPTER 6

INVESTIGATING THE PUBLICNESS OF PUBLIC SPACES BASED ON SIX MORPHOLOGICAL CHARACTERISTICS OF SPACE

This chapter evaluates Atakum Coastal Promenade according to the morphological indicators mentioned in Chapter 3. Each indicator is explained with its defined related variables. Each morphological dimension is defined by related variables and analyses are performed in accordance with these variables. These variables played an important role both in collecting and interpreting knowledge. Also, each variable is examined in more detail under their headings name.

First of all, the survey results prepared to learn the general characteristics of the study area is evaluated. Thus, the general user's profile of the current project area is determined. For this purpose, not only expert opinion but also user opinion is taken into consideration. Afterwards, each morphological variable, which is a publicness indicator, is examined in detail through qualitative and quantitative research methods in terms of surveys, interviews, field census measurements, frequency measurements observations, spatial and visual analyses and photographs related to the variables in the field.

In this context, six basic publicness of public space indicators such as accessibility, permeability, continuity, complexity, enclosure and imageability indicators are evaluated in depth. As a result of the researches, both qualitative and qualitative evaluations are made and a general evaluation is deduced with these two evaluations. Finally, at the end of this thesis research, a universal conclusion that can be generalized is inferenced. In other words, not only public space analysis outcomes related to Atakum Coastal Promenade are obtained, but also a generalizable evaluation about morphological aspects of public spaces is achieved.

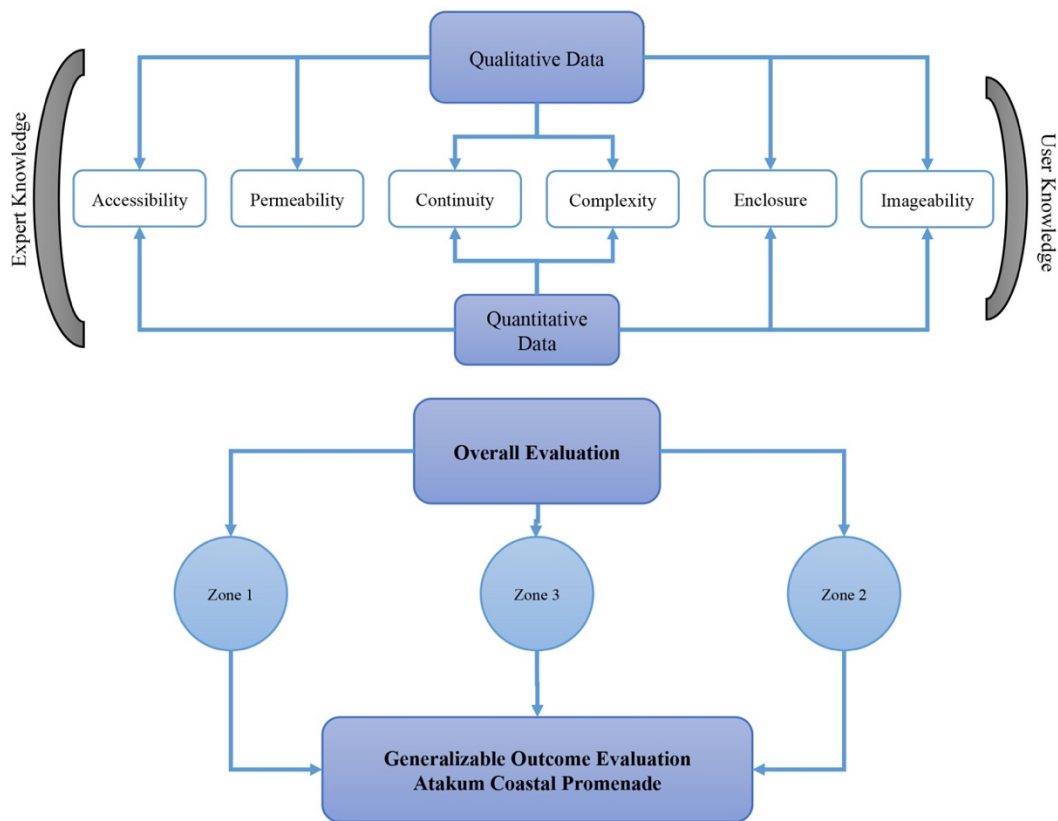


Figure 6.1. Analysis method of the thesis study with respect to three different character zones (Prepared by V. ER)

6.1. Accessibility

Public spaces should be easily accessible by everyone. It should be accessible not only by motor vehicles, but also by two major modes of transport, namely pedestrian and bicycle, which we call non-motorized vehicles. For this reason, the accessibility variable has been analysed with four basic indicators and the results have been evaluated in terms of public transport access, car access, pedestrian access and bicycle access.

6.1.1. Public Transport Access

The level of access to public space by public transport is a significant publicness indicator. The location of the public space in public transport routes and the integration of public transport stops with the public space is a crucial research method in defining publicness of Atakum Coastal Promenade.

In defined context, public space' users were asked "whether public transport stops are integrated into the area" according to sub-zones. The results of participants' answer are presented Figure 6.2 and show that respondents agreed that public transport stops were integrated into public space in Zone 2 and Zone 3 but they partially agreed about public transport stop integration in Zone 1. The reason for the low access of Zone 1 by public transport compared to other regions is that this region is a new development region and that public transport has not yet been integrated into the region.

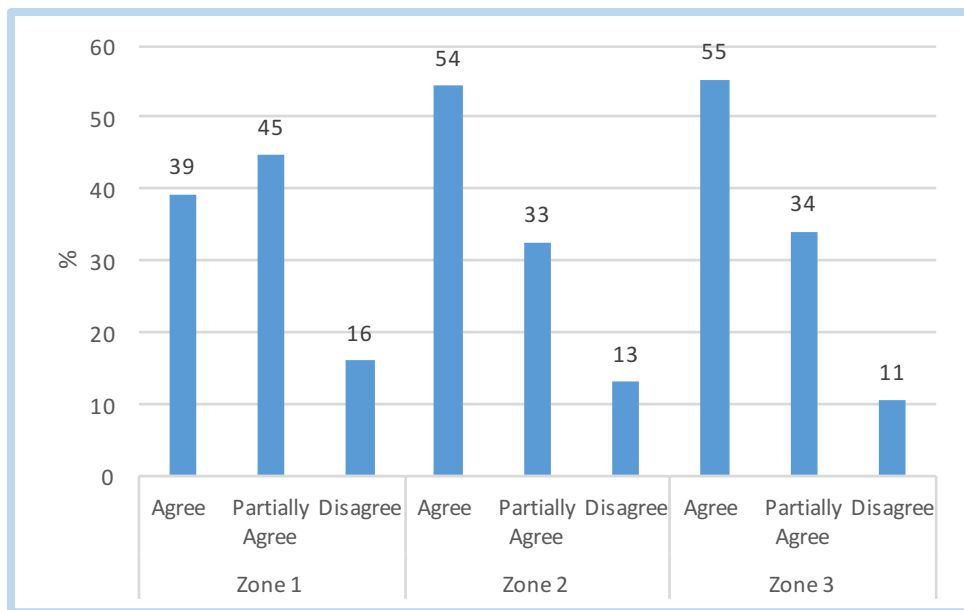


Figure 6.2. The result of "whether public transport stops are integrated into the area" according to sub-zones

Considering the Atakum Coastal Promenade, there are two important public transport lines. The first line is that buses and minibuses run along the Ataturk Boulevard on the east-west axis. It serves the coastal road with designated public transportation

stops. The other public transport line is the tram line along the east-west axis. Tramway Samsun starts from Samsun city center with Samsunspor Tram Station and ends with University Tram Station. These stations provide people access to the coastal road. Considering these two important axes, in fact, the three working zones show almost similar characteristics in terms of public transport access and the integration of stops into urban space.

6.1.2. Car Access

Vehicle access to public space is another important indicator of accessibility. Public space users were asked three basic questions in order to be informed about this variable. The results of first question, which is “whether access to the region is easy by means of motorways”, were presented in Figure 6.3. This figure show that a vast number of public spaces agreed that the existing roads facilitates access by vehicle and increases vehicle access to the three regions in case study area.

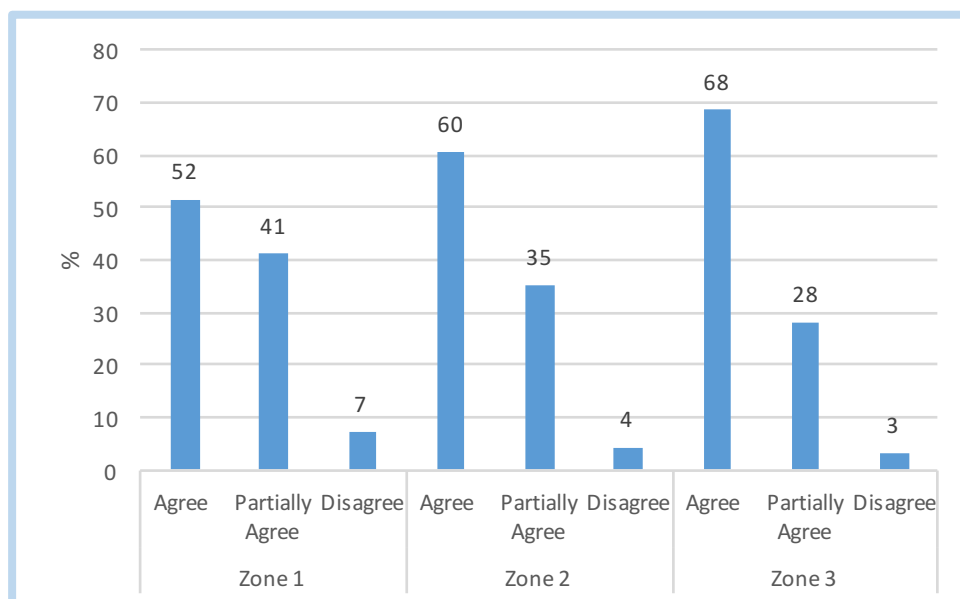


Figure 6.3. The result of “whether access to the region is easy by means of motorways” according to sub-zones

The results of second question, which is “whether the region is easily accessible by private car” were presented in Figure 6.4 and show that the majority of participants agreed that car access to character zones is quite enough and promote publicness of public spaces.

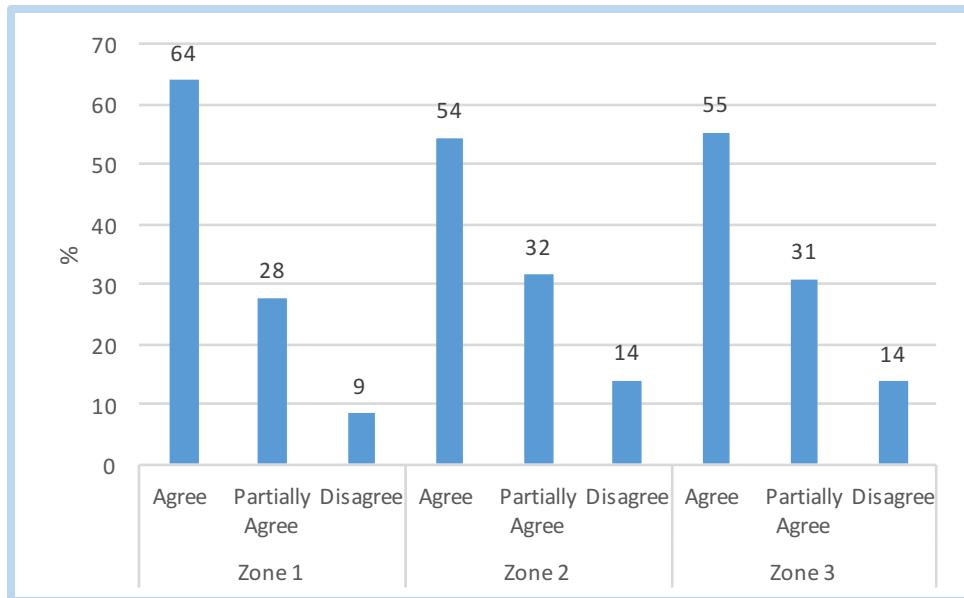


Figure 6.4. The result of “whether the region is easily accessible by private car” according to sub-zones

The final question is related to car parking areas. The number of parking area is as important as the number of roads and the road network. The adequacy of the number of car parks in the region may increase the use of public spaces. The availability of sufficient parking spaces encourages access to the area by car. For this reason, a question is prepared about the number of car parking in the area and this question is “whether the number of car parks is sufficient” and represented in Figure 6.5. The outcome of survey show that participants partially agreed that car parking areas in all three zones Zone 1 and Zone 3 are sufficient but they did not agreed with Zone 2.

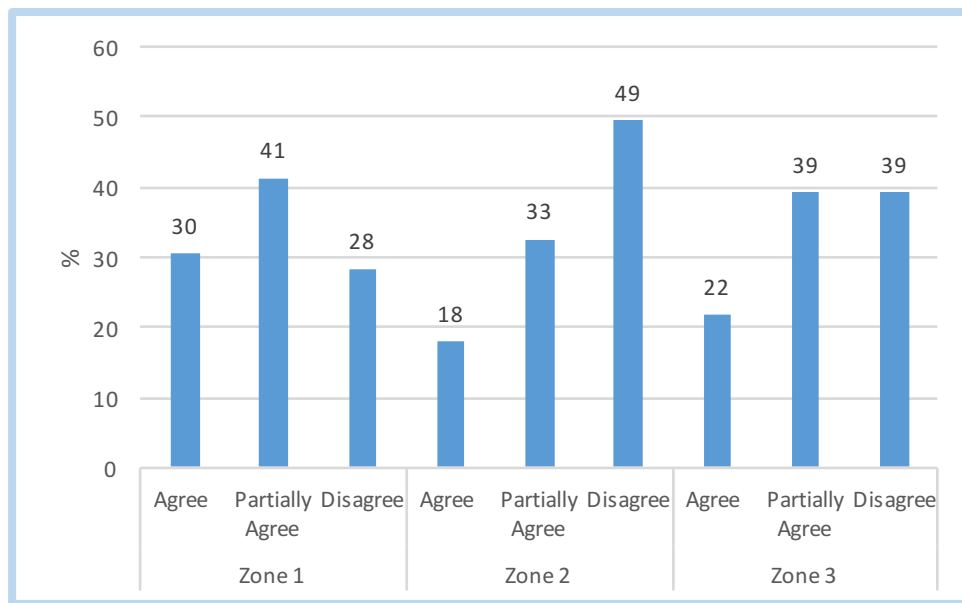


Figure 6.5. The result of “whether the number of car parks is sufficient” according to sub-zones

When all these results are evaluated, it can be said that car access is sufficient for all three regions. The most important reason for this result is the presence of a one-way coastal road on the coast, which increases access to the region by vehicle. At the same time, it can be said that there are not many parking shortages in especially Zone 1 and Zone 3 along with many parking areas on this road expect for Zone 2.

6.1.3. Pedestrian Access

Pedestrian access is another important issue. The more important it is for vehicles and public access, the more pedestrian access is. For this reason, pedestrian access, which is one of the crucial indicators of publicity, is also discussed. Five related questions for the assessment of pedestrian safety were asked to public space’ users of three case study zones. The first question is “whether pedestrian access in the area is quite high”. According this statements, majority of participants agreed that all regions have high pedestrians access. In fact, Zone 3 and Zone 2 have better access level than Zone 1 (Figure 6.6).

The main reasons for such a conclusion are that there are no roads directly connected to the inner parts of Zone 1 and that the existence of high-rise buildings indirectly affects pedestrian access. People do not prefer to walk among high-rise buildings.

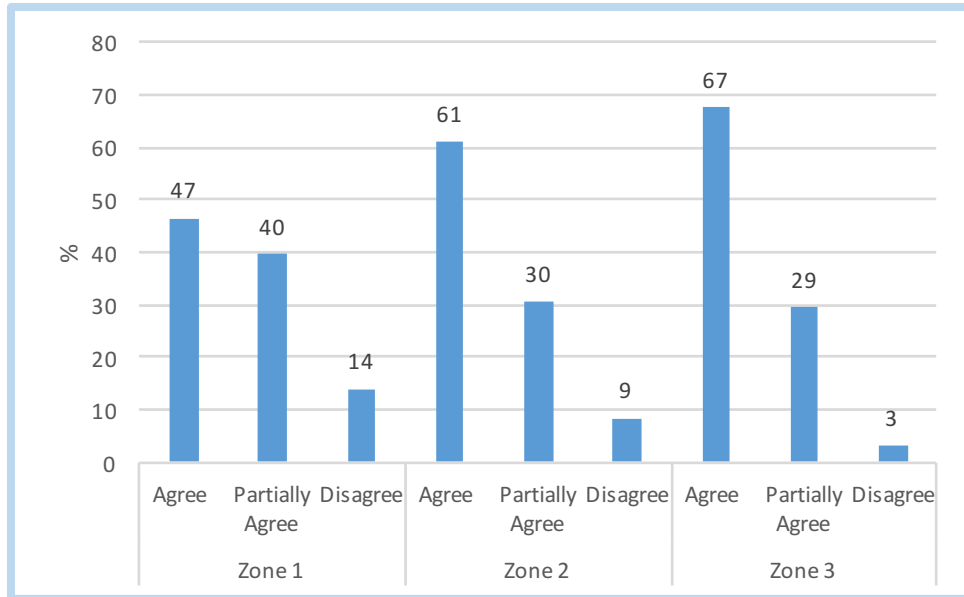


Figure 6.6. The result of “whether pedestrian access in the area is quite high” according to sub-zones

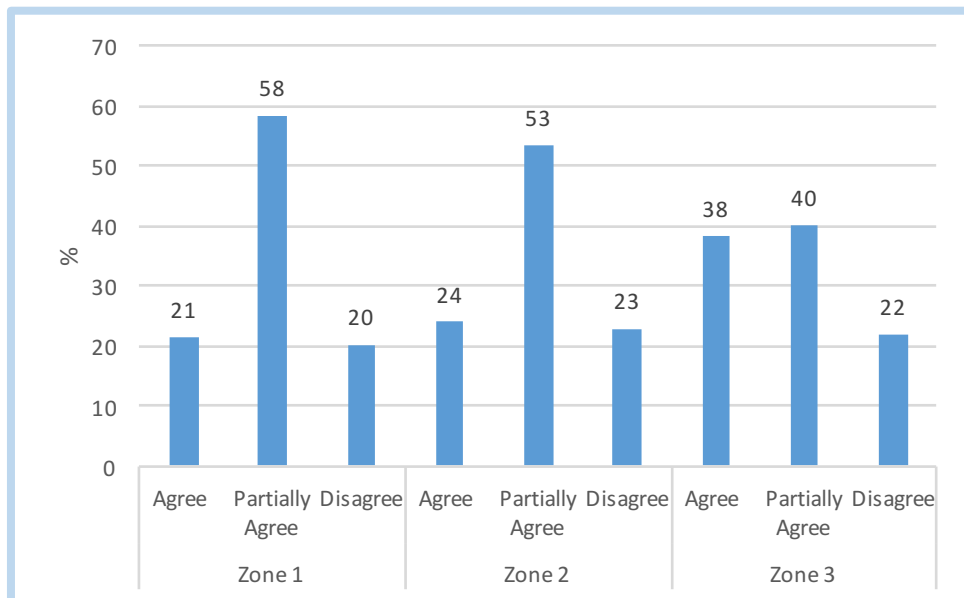


Figure 6.7. The result of “whether the number of pedestrian ways and footbridges is sufficient for the region” according to sub-zones

The second question is “whether the number of pedestrian and footbridges is sufficient for the region”. A great majority of people partially agreed that the number of pedestrian ways and footbridges are sufficient for that case study regions (Figure 6.7). When we evaluate these two questions, it can be said that although Zone 2 and Zone 3 are more accessible than Zone 1, the number of pedestrian roads and overpasses in Zone 1 is higher than in other regions. This is explained by the fact that new construction and the presence of high-rise buildings significantly affect pedestrian access.

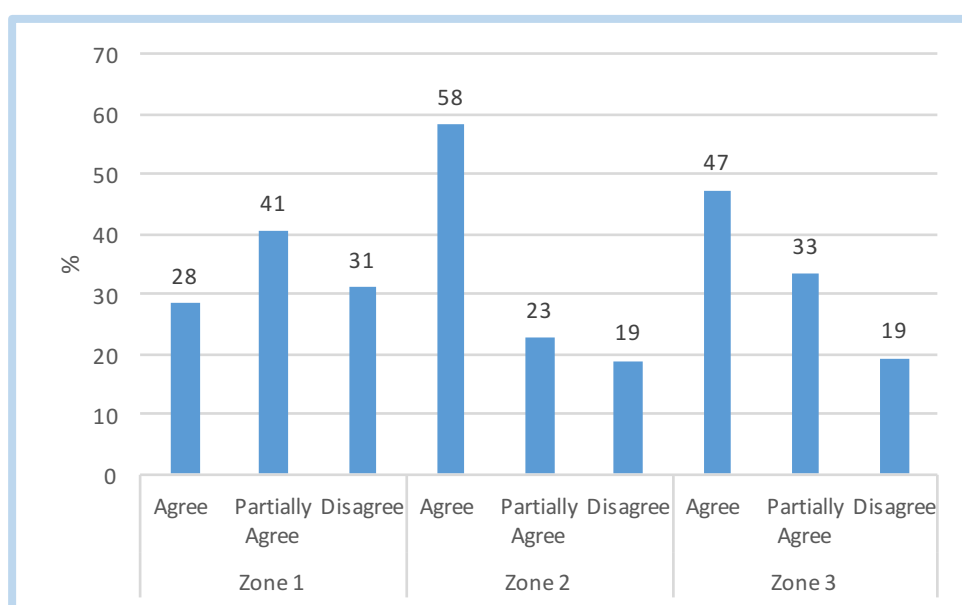


Figure 6.8. The result of “whether inner streets greatly strengthen access to the region” according to sub-zones

The third question regarding pedestrian access is “whether inner streets greatly strengthen access to the region”. Most public users claimed that inner streets in Zone 2 and Zone 3 improve pedestrian accessibility well in comparison with Zone 1. In fact, the layout of the internal roads in Zone 1 is more irregular compared to the other two zones, which greatly affects pedestrian access. The fourth questions related with third question is “whether dead-end streets make access to the area difficult”. A great majority of respondents agreed that Zone 1 is better spaces in terms of having few dead-end streets than Zone 2 and Zone 3 (Figure 6.9).

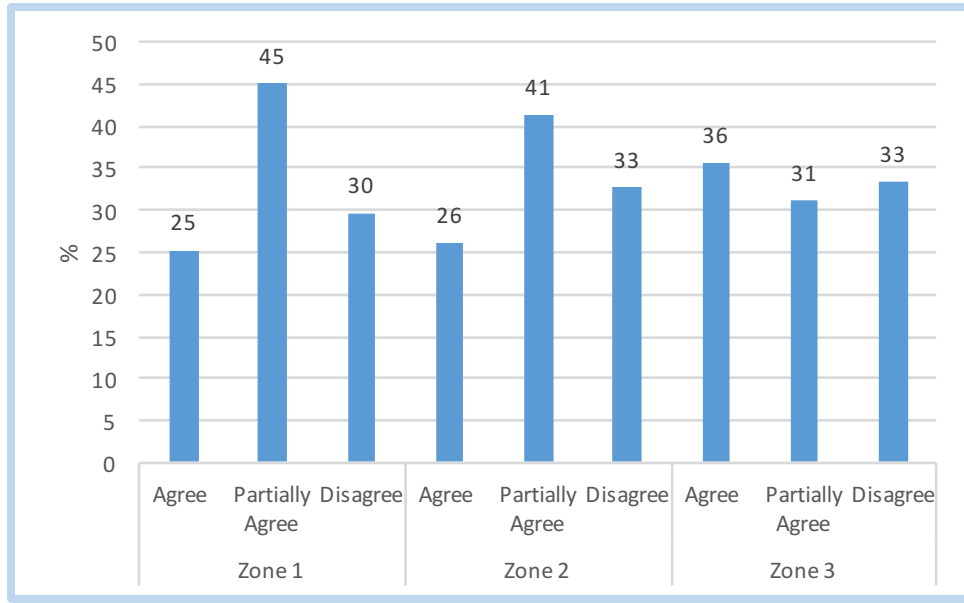


Figure 6.9. The result of “whether dead-end streets make access to the area difficult” according to sub-zones

After the construction of the Black Sea Coast Road, dead-end streets occurred in many regions. Because during the construction of this road, some fillings were made and therefore some areas were upgraded. As Zone 2 and Zone 3 are older settlements than Zone 1, the effect of these fillings is clearly visible (Figure 6.9). On the other hand, since Zone 1 is a new settlement area, new buildings and streets were adapted to these filling areas and built. For all these reasons, dead-end streets Zone 2 and Zone 3 significantly affect pedestrian access.

The last question about pedestrian access is “whether vehicle density in the region does not prevent pedestrian access” (Figure 6.10). The main objective of this question is to determine the effect of detected high vehicle access on pedestrian access directly or indirectly. Zone 1 is the new urban development urban area integrated into the city as a marina. For this reason, this area is affected by less access to vehicles than Zone 2 and Zone 3 because Zone 2 is more attractive with Çobanlı Pier and many activities such as cafes, restaurants, sports areas, etc. and Zone 3 with Yesilyurt Shopping Mall and many public buildings like Atakum Art Center, Atakum Youth Center, etc.

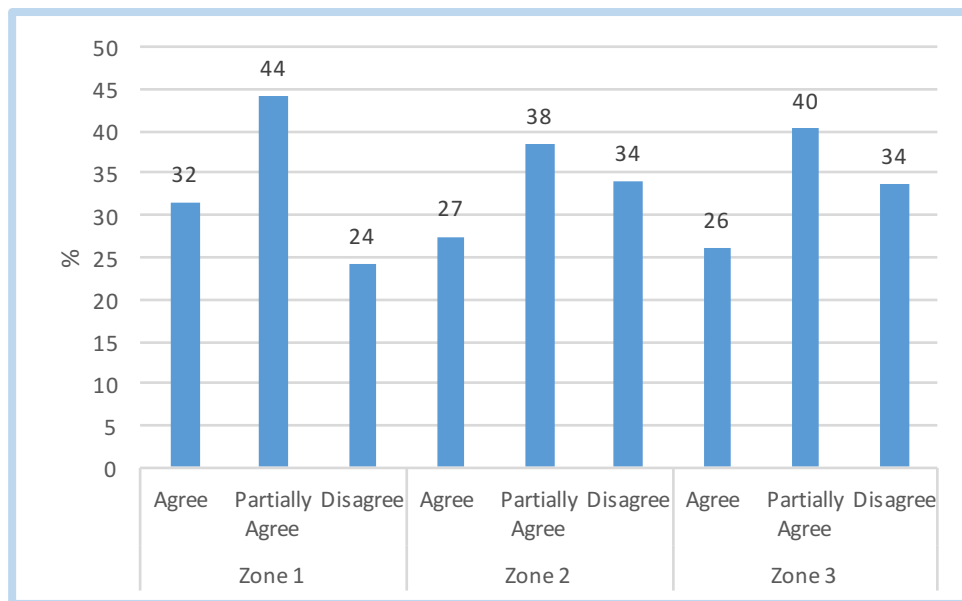


Figure 6.10. The result of “whether vehicle density in the region does not prevent pedestrian access” according to sub-zones

6.1.4. Bicycle Access

The last variable of accessibility discussed in investigation the publicness of public spaces is bicycle access. The issue of motorized vehicle access is widely discussed under the name of accessibility. Unfortunately, non-motorized vehicles are often neglected today. In other words, pedestrian and bicycle access issues are important topics in analysing the accessibility of public spaces and evaluating the publicness of these spaces. Therefore, bicycle access analysis was performed, two crucial questions were asked to participants to investigate bicycle access and the results were evaluated. The first question of bicycle access is “whether bicycle access to the area is sufficient” and the second question is “whether bicycle roads and parking spaces are sufficient” (Figure 6.11 and Figure 6.12). Regarding this statements, it is clear that all three regions are not a problem in terms of bicycle access, bicycle paths and parking areas.

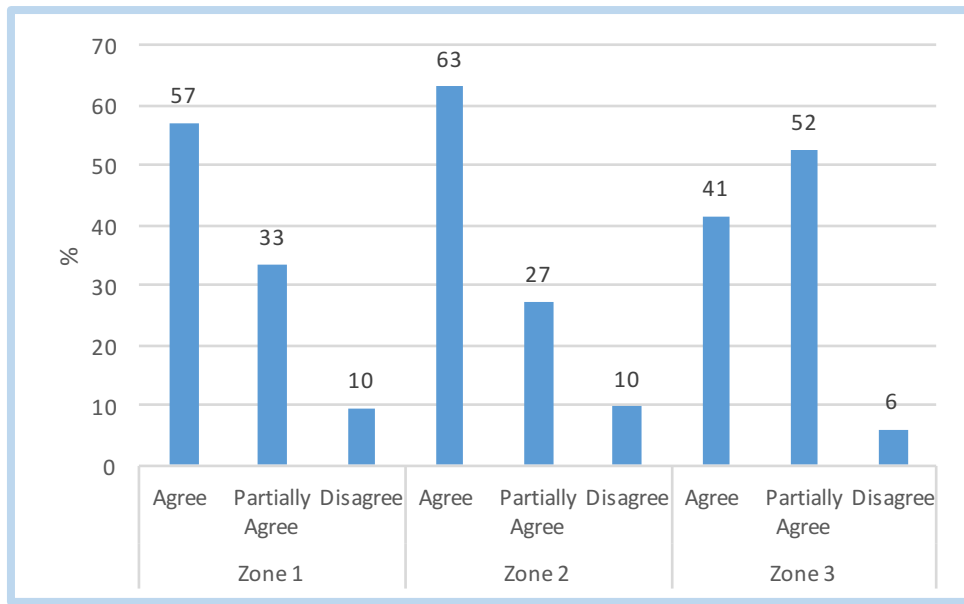


Figure 6.11. The result of “whether bicycle access to the area is sufficient” according to sub-zones

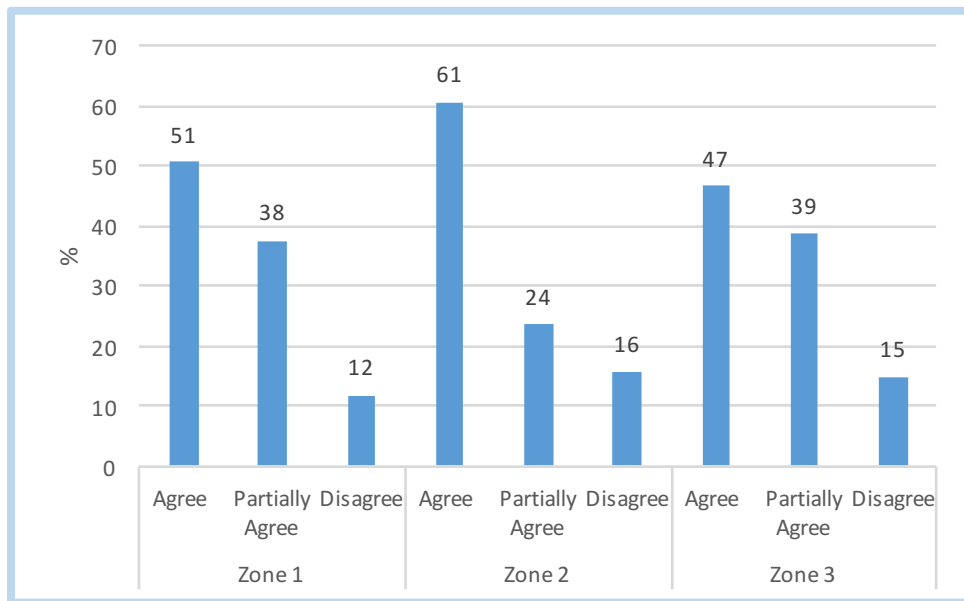


Figure 6.12. The result of “whether bicycle roads and parking spaces are sufficient” according to sub-zones

However, this issue should be looked at from a higher perspective. Participants' responses are related to bicycle access within the region. However, the existence of an integrated bicycle path is much more important. The presence of bicycle paths on the coastal road is simply not enough. Although many clean and convenient cycle paths

are located within the coastal road, there are no bike paths or bicycle parks outside the coastal region. This is an important shortcoming. The existence of a comprehensive and integrated cycling network is needed. This is often neglected in Atakum Coastal Promenade. Only the bike path and park are designed in the relevant public space. However, starting from a higher scale and by taking an integrated approach to planning, the establishment of a bicycle path network provides bicycle access in public spaces in a healthy way.

6.1.5. The Outcome Evaluation of Accessibility in Sample Zones

In this stage, user' perception in this study reassess by the help of qualitative and quantitative research with respect to visual analysis with taking photographs, direct observations in three zones, preparing spatial analysis maps for variables and desk-based assessments as a consequence of examination based on variables of indicators which were mentioned above. Then, different zones of Atakum Coastal Promenade, which are Zone 1, Zone 2 and Zone 3- are compared each other.

These qualitative and quantitative data are examined and a general evaluation is made with these evaluations, and then the final outcome about publicness of public space in terms of related dimension can be achieved. For this purpose, after determining the values of the variables defined in the model table, the result outcome is evaluated whether the dimension is 3 level (high), 2 level (average) or 1 level (low) as a final conclusion in the polygon model.

Quantitative and Qualitative Evaluations

All survey results are shown in Table 6.12. All three different zones are introduced into columns and each related questions/statements of survey are grouped within each indicator and introduced along rows. There are some initiations used to define indicators in this table; A1; stands for "Public Transport Access", A2 stands for "Car Access", A3 stands for "Pedestrian Access" and finally A4 stands for "Bicycle Access".

Table 6.1. The evaluation of survey results in three sample zones with respect to accessibility

QUESTIONS /STATEMENTS		Z1	Z2	Z3
A1	Public transport stations are integrated into the area	Partially Agree (%45)	Agree (%54)	Agree (%55)
A2	Access to the region is easy by means of motorways.	Agree (%52)	Agree (%60)	Agree (%68)
	The region is easily accessible by private car	Agree (%64)	Agree (%54)	Agree (%55)
	The number of car parks is sufficient	Partially Agree (%41)	Disagree (%49)	Part. Agree/Disagree (%39)
A3	Pedestrian access in the area is quite high.	Agree (%47)	Agree (%61)	Agree (%67)
	The number of pedestrian and footbridges is sufficient for the region.	Partially Agree (%58)	Partially Agree (%53)	Partially Agree (%40)
	Side streets greatly strengthen access to the region.	Partially Agree (%41)	Agree (%58)	Agree (%47)
	Dead-end streets make access to the area difficult.	Partially Agree (%45)	Partially Agree (%41)	Agree (%36)
	Vehicle density in the region does not prevent pedestrian access.	Partially Agree (%44)	Partially Agree (%38)	Partially Agree (%40)
A4	Bicycle access to the area is quite common.	Agree (%57)	Agree (%63)	Partially Agree (%52)
	Bicycle roads and parking spaces are sufficient.	Agree (%51)	Agree (%61)	Agree (%47)

Survey results on public transport access and stops clearly show that the majority of the respondents agreed on this issue with 45% in Zone 1, 54% in Zone 2 and 55% in Zone 3 and stated that there is strong public transport access and public transport stops

which have a strong relationship with public places are sufficient. The public transportation route and stops in the study areas are very similar because the whole public transportation system is provided by the Ataturk Boulevard. The distance of the stops to the public places is at the same distance on almost all Atakum Coastal Promenade and maximum 300 meters to the Black Sea Coast Road. Tram stops are similar in this case and do not differ for the three regions under this variable name.

As a result of surveys conducted on vehicle access, the majority of the participants stated that there is no problem with vehicle access in the region exceeding 50% rate. Access to the motorway is generally Atatürk Boulevard and Adnan Menderes Boulevard, which is the one-way road on the beach. As can be seen in the analysis maps prepared below, the transportation arteries of all three regions are provided through these two main roads. In addition, street access is provided through these streets even if there is few of them. In short, qualitative and quantitative observations indicate that access to all three regions is high for the reasons mentioned above. However, it is understood from the density of the vehicle traffic determined as a result of the observations that this dense city needs new alternative means of car mobility. The most important reasons for this traffic density are the fact that vehicle circulation is mostly dependent on Atatürk Boulevard and the one-way motorway on the coast.

In addition to public and car access, pedestrian access also plays an important role in analysing the publicness of public spaces. First of all, the survey results show that Zone 2 and Zone 3 do not have much problem with pedestrian access with over 60% of respondents agreeing on this topic. On the other hand, Zone 1 has 47% less pedestrian access to public spaces compared to these two, but the rate is not low. In other words, since Zone 1 has less pedestrian access than the other two zones, it would not be a good idea to say that this zone has low pedestrian access. The fact that Zone 1 is only a new urban area and the lack of full constitution of urban components has led to such a survey. Although pedestrian access is generally high in three regions, the upper scale analysis shows that Atakum does not have a pedestrian circulation network. The answers obtained from the surveys are generally a result of the

connection between the pedestrian roads in the Atakum Coastal Promenade and the immediate surroundings. However, there is no strong pedestrian circulation at upper scale. All pedestrian access except for the coastal road is made by pavements towards the inner city.

Finally, when it comes to bicycle access, the three characteristic regions are found to be strong in terms of bicycle access by the participants, exceeding 50%. As can be seen in the analysis maps prepared in Atakum (Figure 6.13, 6.14, 6.15, 6.16, 6.17 and 6.18), there is a single bicycle path extending from the beginning of the coast road to the end. Along this long cycling path are often observed bicycle parking areas. According to the survey results, Zone 2 has more bicycle parking spaces than the other two zones with 61%. But the main problem with pedestrian access also applies to bicycle access. The lack of a network of bicycle lanes and the fact that it remains only a single road along the coastline is an important problem for Atakum Coastal Promenade in terms of bicycle access. The lack of bicycle circulation network and the limited accessibility between the coastal road and the inner parts of the city are the most common bicycle access problems identified with the Atakum Coastal Promenade.

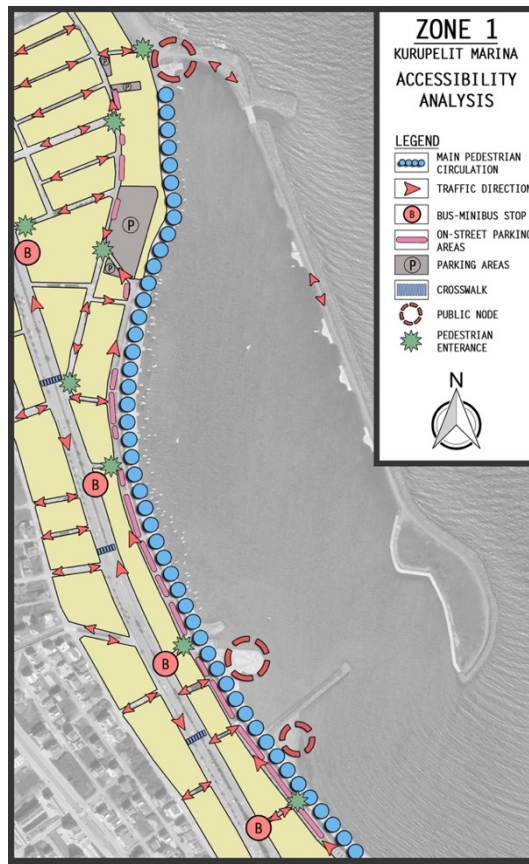


Figure 6.13. Accessibility analysis for Zone 1 (Prepared by V. ER)

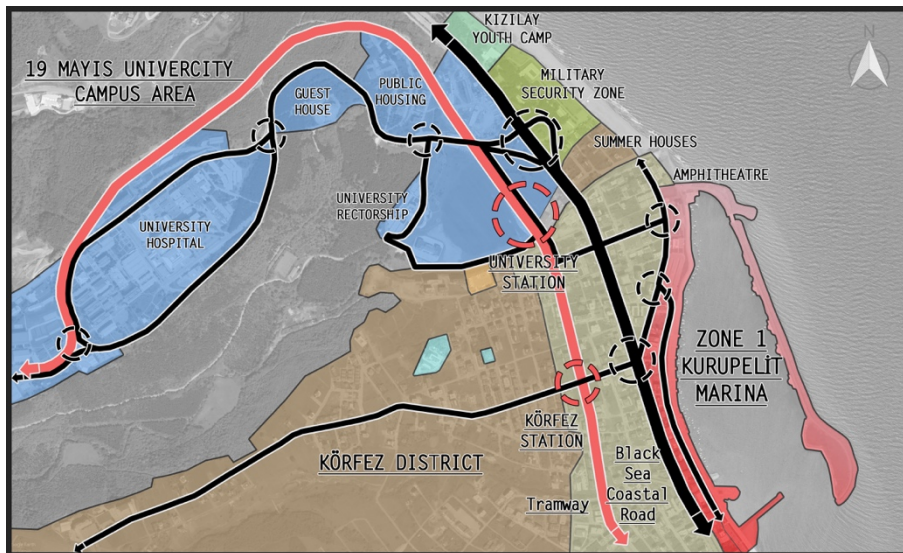


Figure 6.14. Main transportation arteries, tram stops and vehicle road nodes in Zone 1 (Prepared by V. ER)



Figure 6.15. Accessibility analysis for Zone 2 (Prepared by V. ER)



Figure 6.16. Main transportation arteries, tram stops and vehicle road nodes in Zone 2 (Prepared by V. ER)



Figure 6.17. Accessibility analysis for Zone 3 (Prepared by V. ER)

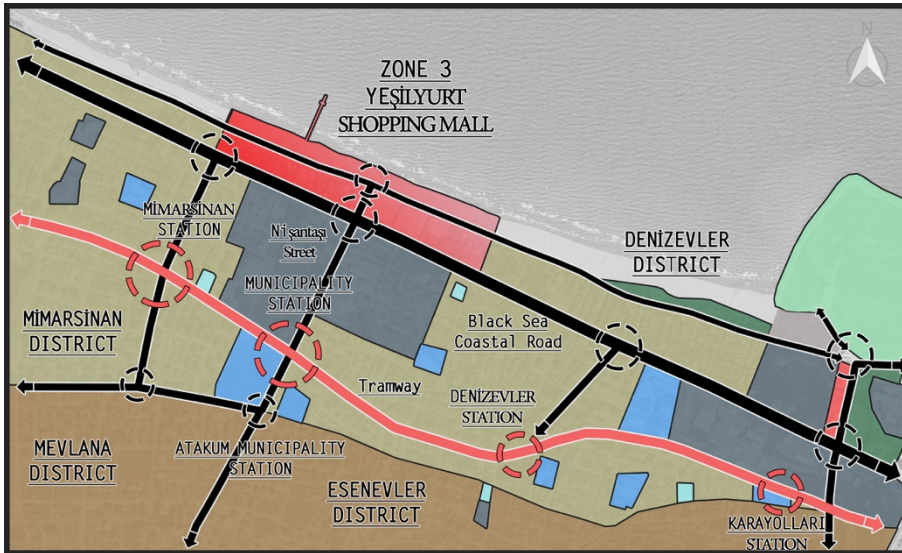


Figure 6.18. Main transportation arteries, tram stops and vehicle road nodes in Zone 3 (Prepared by V. ER)

Overall Evaluations

Public transport routes and stops are an important means of accessibility in analysing the publicity of public spaces. Survey results and direct observations show that all three regions have no problems with public transport in general, but Zone 2 and Zone 3 have more access than Zone 1. Concerning the application of the result data to the model, the result evaluation obtained from all qualitative and quantitative evaluations and the issue of public access is examined as 0 value for Zone 1, 1 value for Zone 2 and Zone 3.

Car access is another variables of accessibility and the survey and direct observations reveal that all regions have sufficient car access because of dominated by single main traffic road along the east-west axis which is Black Sea Coastal Road. This problem is clearly seen from the cognitive mapping study conducted with the students of the Faculty of Architecture in Figure 6.19. Moreover, car parking areas is not sufficient for Zone 2 and Zone 3 due to a great majority of activities but Zone 1 seems to be sufficient in terms of the number of car parking. In fact, it is not enough. As this region is a new region, urban facilities do not fully serve. That's why, it does not attract many people. Therefore, the results of the survey were sufficient. As a result of qualitative and quantitative observations, the vehicle access variable is set to 1 value because it is almost strong in all three regions in order to integrate into the model.

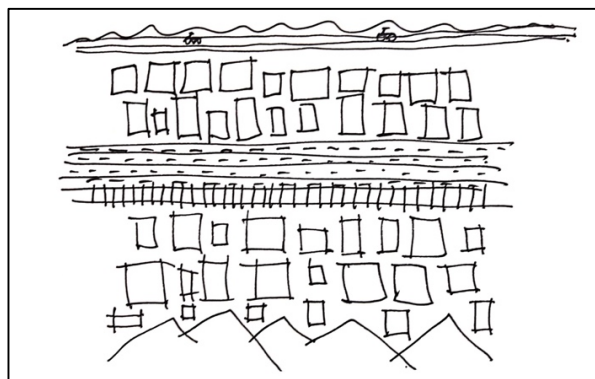


Figure 6.19. An example of the cognitive maps drawn to the survey participant: the problem of inability to integrate the inner parts and the coast due to the fact that Atatürk Boulevard, tramway and coastal roads are parallel to each other

Moreover, pedestrian access plays important role for accessibility of public spaces. Direct observation and survey show that all study regions have high pedestrian access. The number of pedestrian ways and footbridges are also sufficient for these three zones. Furthermore, inner street greatly strengthen access to the all regions. In addition to inner streets, dead-end streets in Zone 2 and Zone 3 make access to the regions to the area difficult excluding Zone 1. Also, vehicle density in the all regions does not prevent pedestrians access much. To integrate all evaluations into the model, the strength level of pedestrian access variable is 1 value for three character zones due to having high level of pedestrian accessibility.

Final variables of accessibility is bicycle access. It is as significant as pedestrian access in order to investigate publicness of public spaces as a morphological feature. The survey results demonstrate that bicycle access, paths and parking areas are sufficient for all regions but according to direct observation in larger scale by exceeding the coastal region, there is huge lack of bicycle path continuity. There is no path networks system to the inner development. There is just one single bicycle path throughout coastal region. Despite this upper scale problem, bicycle access is considered to be 1 value because it is strong in three regions.

Table 6.2. The outcome evaluation of three sample zones with respect to accessibility

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
ACCESSIBILITY	Public Transportation (e.g. Bus, Tramway)	1 Strong 0 Weak	0-3	0	1	1
	Private Transportation (e.g. Car)	1 Strong 0 Weak		1	1	1
	Pedestrian and Bicycle Access	1 Strong 0 Weak		1	1	1
	Overall Evaluation			2	3	3

In brief, accessibility dimension of urban morphology is based on public, car, pedestrian and bicycle access analysis. These four investigation variables help to define accessibility in three public spaces. The survey findings, direct observations and analysis maps show that Zone 2 and Zone 3 are the really more accessible spaces in terms of accessibility by public transportation modes than Zone 1. In fact, the integration of Zone 1 into public transport routes and stops is lower than these two regions. Therefore, a value of 0 for Zone 1, but 1 for Zone 2 and Zone 3 are considered appropriate according to several different kinds of observations. Car, pedestrian and bicycle accessibility of all three-character zone are similar urban character and sufficient in terms of public space accessibility. Because of this similarity, it is considered that all zones have 1 value in because of having strong accessibility according to these three variables of dimension. As a result of all this information, analysis and findings, qualitative and quantitative observations, expert and user information, it is clear that Zone 2 (3 level) and Zone 3 (3 level) are more accessible public space rather than Zone 1 (2 level). They show a strong publicness of public space in terms of accessibility by the help of summing the values of all variables (Table 6.2).

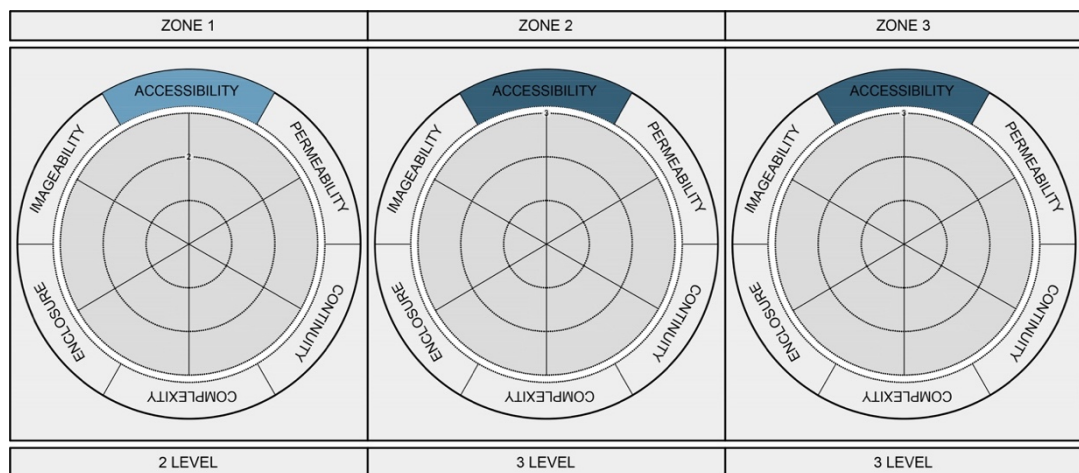


Figure 6.20. Accessibility level of three character zones by polygon model (Prepared by V. ER)

6.2. Permeability

Permeability indicator is considered to need more professional information instead of asking sample group. Therefore, the interviews carried out with academicians of the Architecture Faculty of 19 Mayıs University, Associate Professor Hakan Sağlam and Faculty Member Dr. Cem Ayık rather than including related questions about permeability in questionnaire. In this principle, expert knowledge is given more value than user knowledge and researches about this principle have been carried out with this perspective. Accordingly, the interviews carried out with both academics by asking nine main questions about permeability. These questions are show in Table 6.2.

Table 6.3: *Interview questions about permeability*

QUESTIONS FOR THREE STUDY ZONES
Does the location and orientation of building structures facing the beach increase the permeability of the area?
Do you find the street pattern regular?
When it comes to the permeability of the coastal road to the inner parts, do you find the width of the main and side streets sufficient?
Does the existence of some dead-end streets jeopardize the permeability of the
Do you think that the coastal construction is under intense construction that will leave the coastal road under the pressure of rent?
Do you think that the important urban gaps (park, sports area, garden, etc.) in the region are sufficient to ensure that the coastal road is not disconnected from the
Does the scale and design of the structures in the region increase the permeability of the region?
Do you think that the coastal relationship with the inner part of the city, which has a strong development parallel to the sea with the Black Sea coastal road and tram
What are the future dangers for the permeability of the Atakum coastal road?

6.2.1. The Outcome Evaluation of Permeability in Sample Zones

Quantitative Evaluations

Quantitative observations are not applied to investigate permeability dimension. The main research sources of this dimension are interviews with experts and qualitative analysis maps with direct observations.

Qualitative Evaluations

With reference to the interviews done with academicians, it can be said that the building orientation and location choices increase the permeability in the region. It is clear that all three study areas show similar characteristics in this context. To begin with the street pattern, according to Hakan Sağlam, the texture of the side streets increases this permeability. These three regions, which have regular and simple street texture, do not constitute much problem in this respect. However, according to Cem Ayık, this is not the case. He stated that the incompatibility of the side streets with the main street endangers this variable (Sağlam, H. and Ayık, C., personal communication, May 13, 2019). As shown in the both street pattern and length analysis between two streets leading to the sea analysis maps prepared for the three research regions in Figure 6.21, 6.22 and 6.23, the fact that the Zone 2 region has more streets than the other two regions is an important proof that this region offers more people options in terms of pedestrian movements. This is important not only for physical permeability, but also for perceived permeability. Besides, the results obtained from the analysis of the distance between the streets also support this situation. The integration of many streets with the coastal road over 50 meters in length leads to the development of the permeability variable in this region. However, as a result of these spatial analyses and interviews conducted with academicians, Zone 1 and Zone 2 can be said to have less permeability than Zone 1.

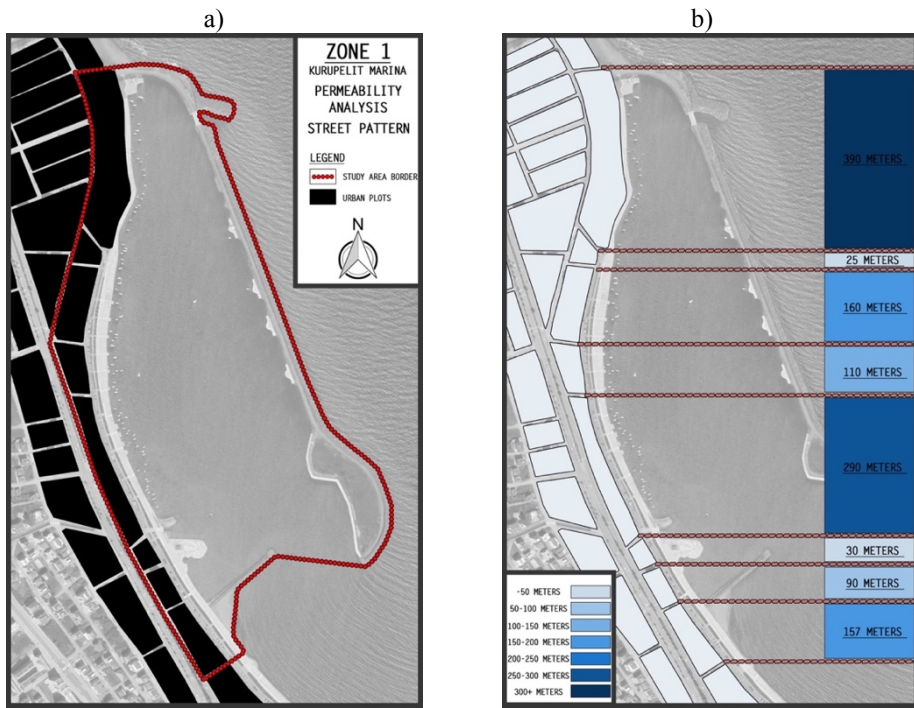


Figure 6.21. a) Street pattern analysis for Zone 1 b) Length analysis between two streets leading to the sea in Zone 1 (Prepared by V. ER)

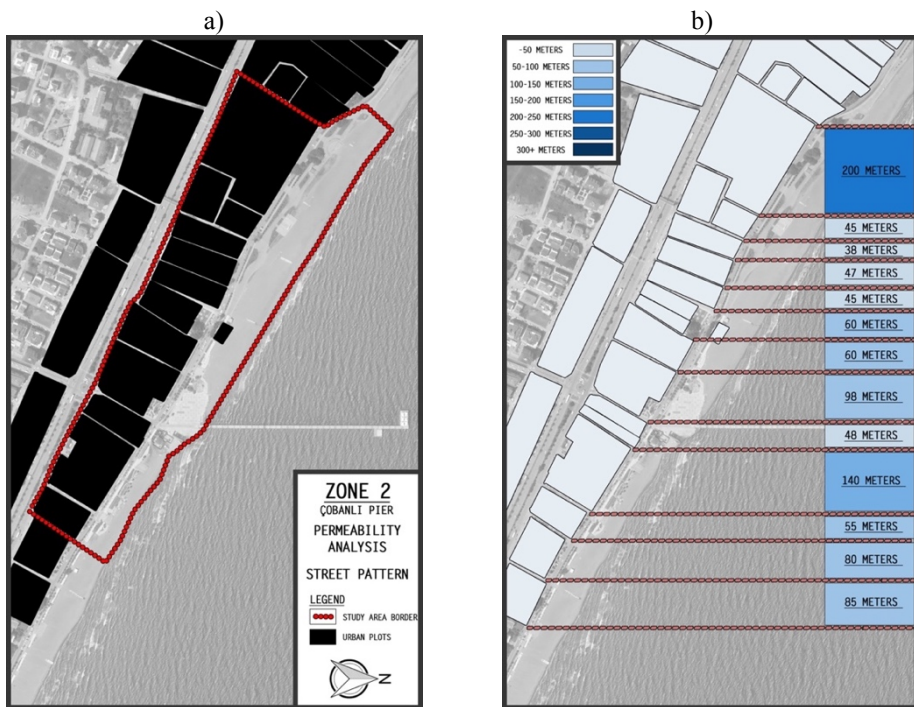


Figure 6.22. a) Street pattern analysis for Zone 2 b) Length analysis between two streets leading to the sea in Zone 2 (Prepared by V. ER)

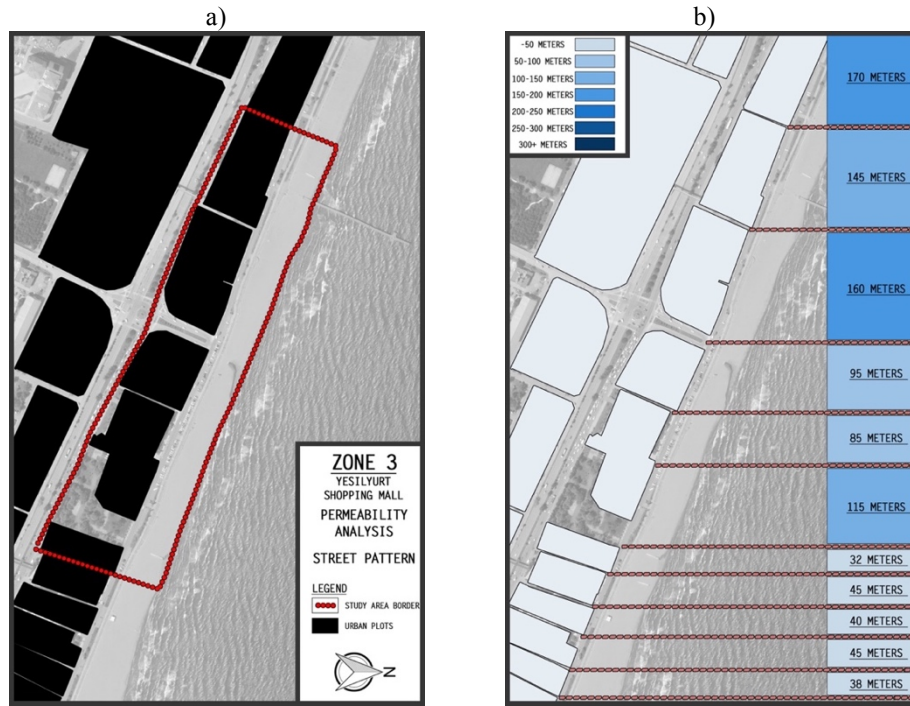


Figure 6.23. a) Street pattern analysis for Zone 3 b) Length analysis between two streets leading to the sea in Zone 3 (Prepared by V. ER)

Furthermore, while the width of the main and intermediate roads is partially sufficient in Zone 1, but Zone 2 and Zone 3 are not sufficient. However, according to Cem Ayık, street widths were found to be sufficient for three regions in general. In almost three regions, there are rarely dead-end streets. Both Hakan Sağlam and Cem Ayık stated that this situation jeopardizes the permeability in the regions and significantly weakened its relationship with the interior urban space (Sağlam, H. and Ayık, C., personal communication, May 13, 2019).

Addition to width of streets and dead-end streets, both of them agreed on that the coastal road is in great danger of rapid urban growth. The rent pressure has accelerated the constructions in the regions and gradually lost its permeability in previous years. Therefore, there are not enough urban gaps on the Atakum Coastal Promenade. For this reason, the permeability of the coast with the inner parts is quite low (Sağlam, H. and Ayık, C., personal communication, May 13, 2019)

Another negative result of this problem is that the scale and design of the buildings reduce the permeability of the space in the region. Both Hakan Sağlam and Cem Ayık stated that especially the dense texture formed by the new high-rise buildings in Zone 1 reduces the publicity of public space. Zone 2 and Zone 3 are slightly less affected by rapid urbanization and construction (Sağlam, H. and Ayık, C., personal communication, May 13, 2019).

The urban block and visual permeability analyses maps as shown in Figure 6.24, Figure 6.25 and Figure 6.26 clearly show that the presence of many structures in the Zone 2 region especially prevents visual permeability. However, this evaluation is conducted by examining the street network which is viewed from 2 dimensional analysis method rather than three-dimensional spatial analysis. Zone 1 and Zone 3 provide greater visual permeability. The existence of unstructured urban spaces in Zone 1 and the presence of mass structures such as Yeşilyurt Shopping Mall, Atakum Art Center etc. in Zone 3 bring this situation. The urban area in Zone 2, especially providing visual permeability, is the site of the General Directorate of Meteorology. It provides significant support with its large green areas and low-rise housing.

However, when the urban structures and building heights of all three regions are taken into consideration, it is determined that Zone 2 offers more movement with having more streets than the other regions. This zone provides not only more choices of routes for people but also is a public space where the visual integrity of the coastal road with the main urban fabric is ensured rather than other two zones. Unlike Zone 2, in Zone 1 and Zone 3, the high-rise construction and the inadequacy of the streets make the publicness in these urban areas inadequate regarding permeability.

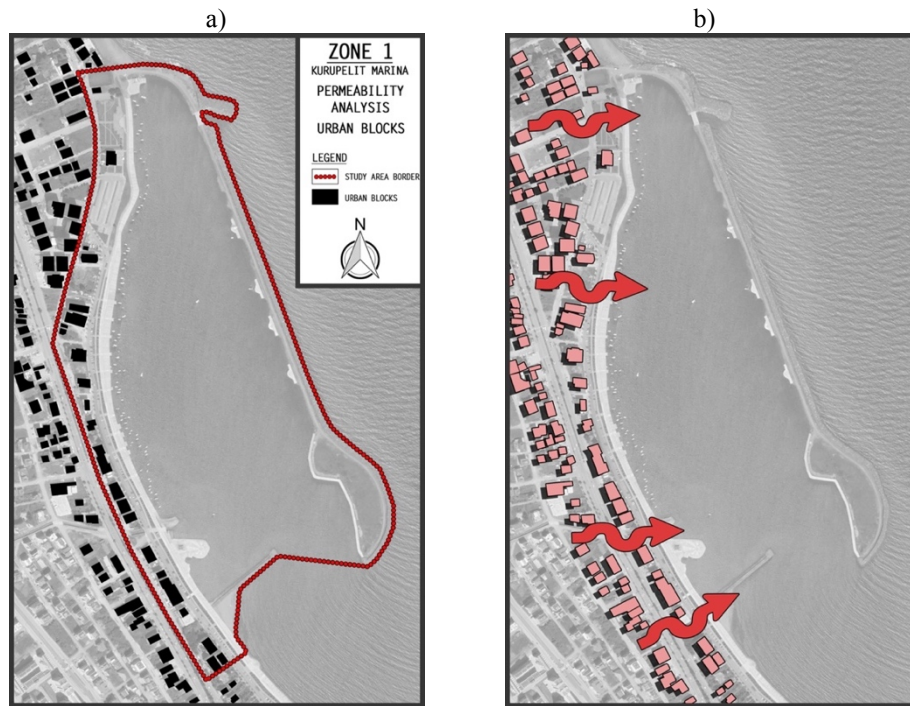


Figure 6.24. a) Urban block analysis for Zone 1 b) Visual permeability corridors in Zone 1 (Prepared by V. ER)



Figure 6.25. a) Urban block analysis for Zone 2 b) Visual permeability corridors in Zone 2 (Prepared by V. ER)



Figure 6.26. a) Urban block analysis for Zone 1 b) Visual permeability corridors in Zone 1 (Prepared by V. ER)

Moreover, Hakan Sağlam stated that the main reason why the connection of the coastal road with the inner parts could not be established is that the city has an urbanization parallel to the sea in the direction of the tramway and the Black Sea Coast Road axes extending on the east-west axis. This is one of the biggest urban development problems of the city of Atakum. However, Cem Ayık claimed that this situation is not very problematic and all three regions have at least some permeability considering the Atakum in urban scale (Sağlam, H. and Ayık, C., personal communication, May 13, 2019).

Both of them specified that with the urban growth expected to increase further in the coming years, the coast will be under the pressure of high-rise housing texture starting from the inner parts and developing towards the coast. This inevitable result may even lose its morphological space feature in the future. The concept of public spaces

developing with intensive construction can be inevitable (Sağlam, H. and Ayık, C., personal communication, May 13, 2019).

Overall Evaluations

Permeability dimension of urban morphology is based on street pattern and urban block analysis. These two investigation method help to define permeability in three public spaces The survey findings, direct observations and analysis maps show that Zone 2 is the really strong in terms of street pattern and urban block than other two regions. The fact that there are many side streets and the blocks are well defined for the coastal road make the Zone 2 having the ideal publicness in terms of permeability. Therefore, a value of 0 for Zone 1, 1 for Zone 2 and 0 for Zone 3 are considered appropriate after quantitative observations. Conversely, Zone 1 and Zone 3 do not reach the level of permeability due to their large urban blocks, the lack of side streets and the structures not being able to define the coast. In addition to street pattern and urban block pattern, visual permeability is examined for three character zones and included in the model as a possible outcome values. Interviews and analysis maps clearly show that Zone 1 and Zone 3 have more visual permeability than Zone 1.

By the help of both quantitative evaluations, the variable inputs of the polygonal model are determined for permeability dimension. Regarding street patterns of three sample zones, it is evaluated as a 0 value for Zone 1 and Zone 3, and 1 value for Zone 2 in order to adapt the findings to the model. Later, Zone 2 is set to 1 value, but Zone 2 and Zone 3 are set to 0 value in terms of urban block pattern. Lastly, the value of visual permeability variable is evaluated as 1 for Zone 1 and Zone 3, but 0 for Zone 2. Considering the values given to all these separate variables, while Zone 2 has 2 value, Zone 1 and Zone 3 have 1 values in total. This means that while Zone 2 shows 2 level publicness of public space in terms of permeability dimension, but Zone 1 and Zone 3 show 1 level permeability (Table 6.4).

Table 6.4. The outcome evaluation of three sample zones with respect to permeability

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
PERMEABILITY	Street Pattern	1 Strong 0 Weak	0-3	0	1	0
	Urban Block Pattern	1 Strong 0 Weak		0	1	0
	Visual Permeability	1 Strong 0 Weak		1	0	1
	Overall Evaluation			1	2	1

In conclusion, as a result of all source of evidence like spatial analysis maps, findings and qualitative observations, it is clear that Zone 2 has more permeability than other two zones by having 2 level. On the other hand, Zone 1 and Zone 3 have 1 level in permeability and all final evaluation are represented in the model (Figure 6.17).

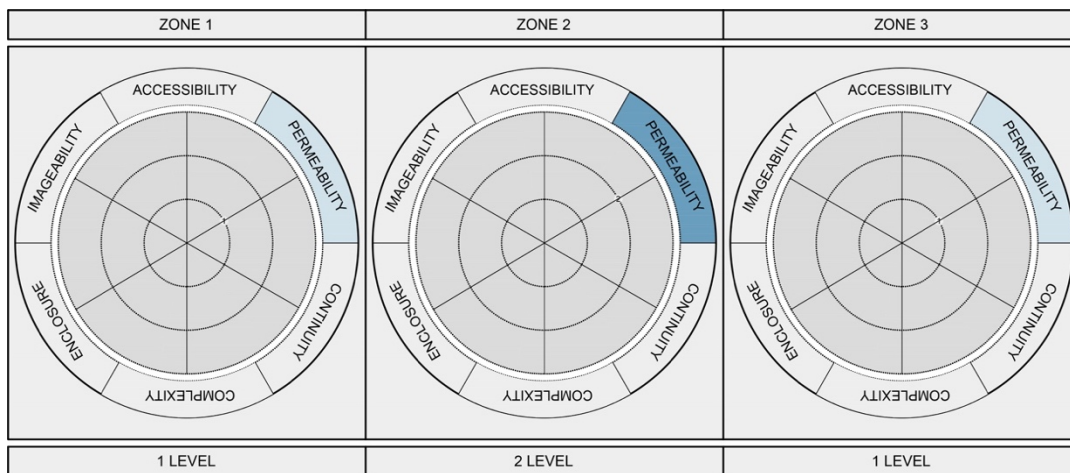


Figure 6.27. Permeability level of three character zones by polygon model (Prepared by V. ER)

6.3. Continuity

Continuity is another important morphological character used to analyse the publicness of public spaces. It plays an important role in understanding and evaluating the integration of public spaces. This indicator has four main variables to investigate continuity in advance with respect to quality of path, facade continuity, landscape elements and urban sign elements. The quantitative and qualitative findings are two main sources of research to analyse the variables of continuity for three study zones.

6.3.1. Quality of Path

Quality of path is the first significant variable of continuity in order to analyse the how path quality create continuity in the related region. For this purpose, one question related to variable were asked to public space' users. This question is “whether the quality of the pedestrian paths is high”. Regarding this question, path quality in Zone 1 is much higher than Zone 2 and Zone 3 because it is new urban settlements area and thus has larger clean open space than other two zones. Zone 2 and Zone 3 generally have same characteristic for this term and are much older spaces than Zone 1.

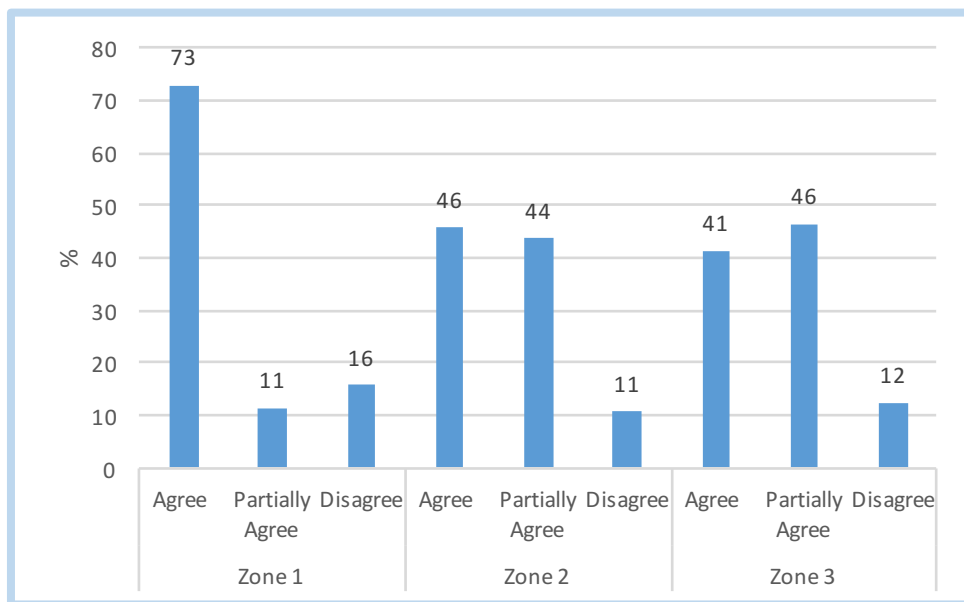


Figure 6.28. The result of “whether the quality of the pedestrian paths is high” according to sub-zones

6.3.2. Facade Continuity

In addition to path quality, facade continuity is another significant variable of continuity dimension. Building facade can play important role for creating integrated path networks. People can walk in a continuous way by the help of the facade design manner. For this reason, all building facades for three study zones are taken into consideration by investigating by taking photographs and preparing analysis maps.

When we consider building facades in all three zones, it can be said that Zone 2 have much more continuity than other two zones because the relationship between the facade among buildings and the floor height of the structures is compatible with each other. In detail, the structures in Zone 1 are very different from each other. There are different structures with different heights. The continuity of the facade could not be achieved with the empty parcels between the buildings. Similarly, Zone 3 have different building types with different use. For example, structures of Yeşilyurt Shopping Mall and Atakum Art Center are totally different with each other. This prevent the creating facade continuity for Zone 3. However, the structures in Zone 2 are almost the same height and the facade designs are compatible with each other. This common language among buildings provided the continuity by clearly define the edge of the that public space. Furthermore, there are almost no empty parcels or land between the buildings. This also bring about the formation of facade continuity.



Figure 6.29. Photograph related with facade continuity in Zone 1 (Author's Personal Archive)



Figure 6.30. Photograph related with facade continuity in Zone 2 (Author's Personal Archive)



Figure 6.31. Photographs related with facade continuity in Zone 3 (Author's Personal Archive)

Besides, the integrity of the facades of the buildings facilitates pedestrian movement in public spaces. In defined context, one question was asked to pedestrians and it is of “whether the integrity of the facades of the buildings facilitates pedestrian movement in the region”. According to survey result for this question, a great majority of pedestrians in these public spaces partially agreed that there is integrity of the facades of buildings in these three study zones.

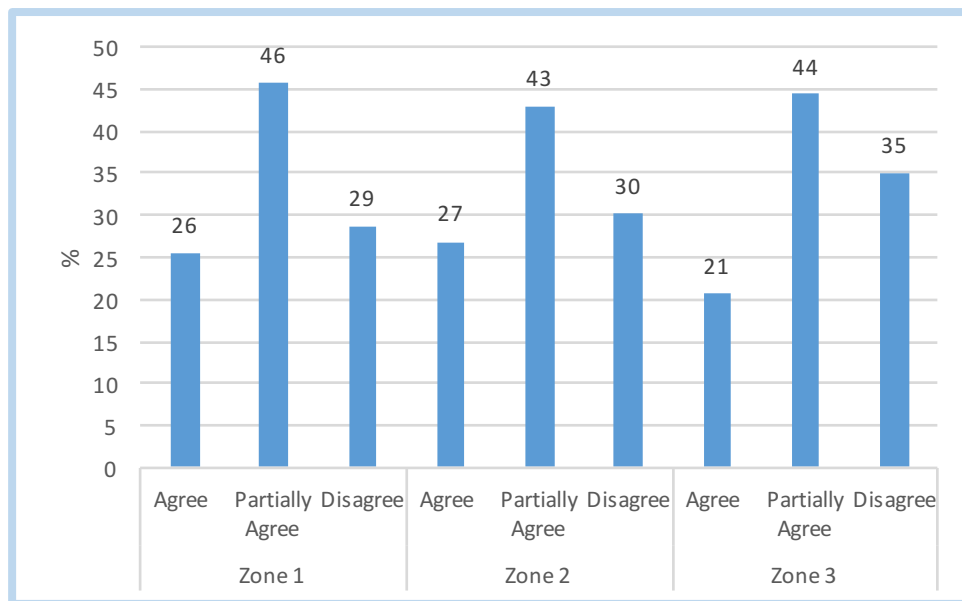


Figure 6.32. The result of “whether the integrity of the facades of the buildings facilitates pedestrian movement in the region” according to sub-zones

6.3.3. Landscape Elements

Landscape elements can not only define spaces but also provides variety, interest and contrast. Hence, it is crucial for the investigating publicness of public spaces. In the study area, especially green area usage and urban landscape elements were examined. It has been investigated what kind of wealth they bring to the public sphere and how much they have gained in human perception. One important related question was asked to public space ‘users. The question is “whether landscape elements (green spaces and trees) increase pedestrian continuity” and participants partially claimed that landscape elements bring about continuity for all study zones (Figure 6.33).

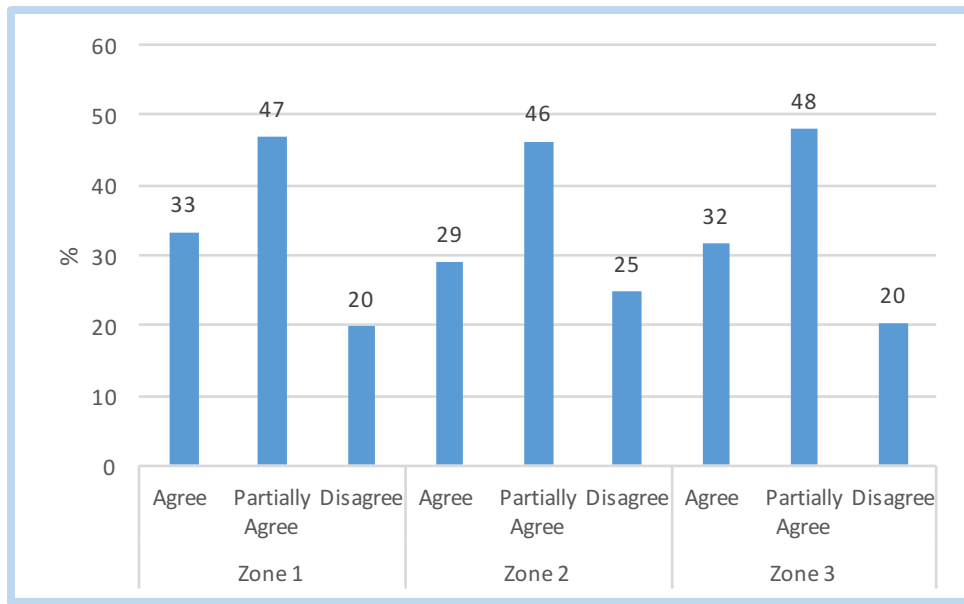


Figure 6.33. The result of “whether landscape elements (green spaces and trees) increase pedestrian continuity” according to sub-zones

6.3.4. Urban Sign Elements

Urban signs are turning points in a city and they are crucial elements that help a observer acquire access to spaces that could not be easily found. Urban sign elements should be uniqueness and clarity and these features are really important. They provide stability in urban spaces and advance people’s memory by giving identity and thus they advance urban legibility.

Regarding the question of “whether urban sign elements (sculpture, monument, historical fountain, etc.) help to direct pedestrians to public spaces in the region”, most participants partially agreed that urban sign elements help to direct pedestrians to the public spaces. In detail, Zone 1 have higher rate than other two zones and Zone 2 and Zone 3 have almost same level in terms of urban sign elements.

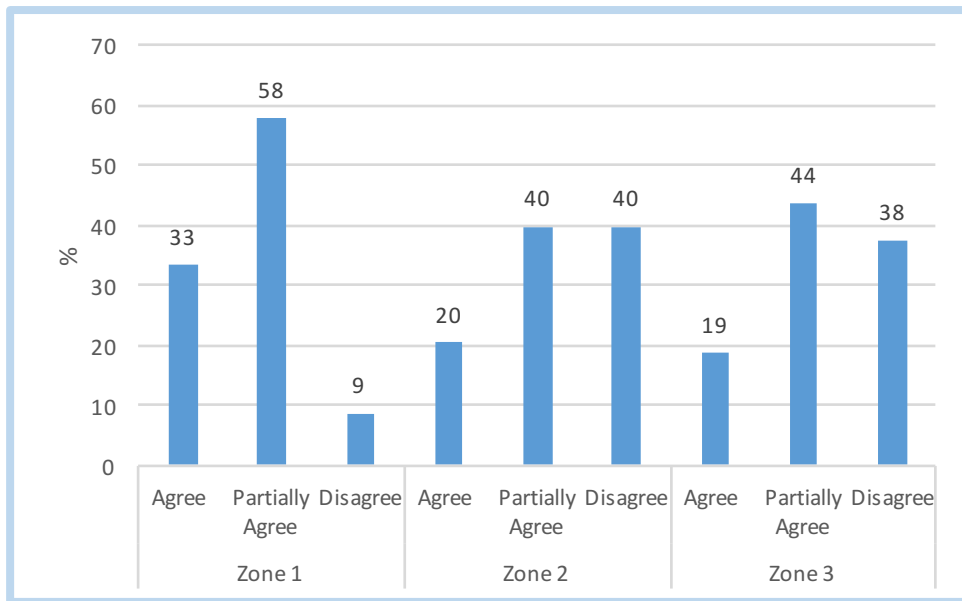


Figure 6.34. The result of “whether urban sign elements (sculpture, monument, historical fountain, etc.) help to direct pedestrians to public spaces in the region” according to sub-zones

6.3.5. The Outcome Evaluation of Continuity in Sample Zones

This part discusses the continuity dimension on the basis of morphological aspects of three case study zones such as Zone 1, Zone 2 and Zone 3 with a simple scale from 1 to 3. Each variable of continuity is demonstrated with an initial; quality of path as C1, facade continuity as C2, landscape elements as C3 and urban sign elements as C4. Three zones of study areas are analysed according to the evaluation of the survey results and direct observations.

Quantitative Evaluations

Surveys on the quality of pedestrian pathways show that Zone 1 is a public area of higher quality, more defined with green elements and more supported by urban furniture with the really high rate by having 73% than other two zones. Supporting pedestrian roads with urban furniture and transforming green spaces into better quality spaces significantly increases the integration of pedestrian cycling in such spaces. The main reason for this increment in pedestrian mobility is the continuity between

pedestrian ways. As a result of the researches, the quality of the pedestrian roads is high in the whole coastal road and this is an important result for this urban public space.

In addition to path quality, the facade continuity in the three regions is evaluated to have similar character as a result of the answers given by the participants. They partially agreed on Zone 1, Zone 2 and Zone 3 by 46, 43 and 44 percent respectively. The similarity of the floor heights and architectural forms of the buildings means that There can exist a common language among buildings and this can define the edges of the public space better. This situation causes the continuity of public space with this defined edge of space.

Moreover, the use of landscape elements is similar for the three areas according to the participants' answers just like facade continuity. In fact, Atakum Coastal Promenade generally has similar landscaping practices in every section. Urban landscape practices regulate different movements in spaces and describe the ideal public space for pedestrians without interfering with each other's circulation. The fact that all three regions are good in this regard shows that Atakum Coastal Promenade is good urban space on this variable basis in terms of continuity principle.

Table 6.5. *The evaluation of survey results in three sample zones with respect to continuity*

	QUESTIONS/STATEMENTS	Z1	Z2	Z3
C1	The quality of the pedestrian paths is high.	Agree (%73)	Agree (%46)	Partially Agree (%46)
C2	The integrity of the facades of the buildings facilitates pedestrian movement in the region.	Partially Agree (%46)	Partially Agree (%43)	Partially Agree (%44)
C3	Landscape elements (green spaces and trees) increase pedestrian continuity.	Partially Agree (%47)	Partially Agree (%46)	Partially Agree (%48)

Table 6.5. *Continued*

	QUESTIONS/STATEMENTS	Z1	Z2	Z3
C4	Urban sign elements (sculpture, monument, historical fountain, etc.) help to direct pedestrians to public spaces in the region	Partially Agree (%58)	Partially Agree/Disagree (%40)	Partially Agree (%44)

Qualitative Evaluations

Direct observations and analysis maps show that all three regions have similar characteristics in terms of pedestrian and bicycle access. In general, pedestrian and bicycle circulations take place only through public spaces along the coastal road. In fact, there is no an alternative pedestrian path outside the coastal area. Pavements and motorways are used as alternative pedestrian roads in the inner parts of Atakum city.

To begin with Zone 1, it has the observation platforms on the sea and this is an important application that improves the pedestrian quality of this region. There is also a beach focal point which is actively used during the summer. There are three pedestrian crossings on Atatürk Boulevard. These three pedestrian crossings are sufficient as this region does not have many visitors compared to other regions. Moreover, the use of green space and arrangements trees can be considered as sufficient in this region as in Zone 2. The arrangement of trees by separating the pedestrian path and the vehicle path and the ending of the pedestrian path with the parking area are important urban components for this public space (Figure 6.35).

The most important feature of Zone 2 is that it distinguishes from other regions in terms of having many green urban focuses. Green spaces and trees are integrated with recreation areas, playgrounds and sports fields, creating a valuable urban texture. The beaches, cafes and piers together have important urban focal points. All these urban focal points contribute to advance the continuity dimension because they make

significant contributions to pedestrian movements and increase the publicity of this public space. Another important spatial feature of this area is that it has many small urban focal points, enabling pedestrians to be present in this space for different alternative purposes. Furthermore, Zone 2 also has four pedestrian crossings and one footbridge on Atatürk Boulevard. A public space mentioned above with two important urban features should not have such limited access channels. There should be more channels to integrate the coast into the inner part of the city through that boulevard. (Figure 6.36).

Finally, in terms of the quality of pedestrian roads and green areas, Zone 3 is less quality than the other two zones. Due to this high urban density, this area, where commercial and public activities are concentrated, does not respond to this need by using existing green areas and pedestrian paths. This issue is an important urban problem and some measures need to be taken to increase the publicness of the public space in this region. There are three pedestrian crossings and two footbridges on Atatürk Boulevard. These transitional areas are the access channels to the inner parts of the city beyond Atatürk Boulevard on the coastal road. These access channels are also necessary interventions in order to contribute to the continuity of public spaces in terms of pedestrian movements of the Atakum Coast Road. In fact, given the intensity of pedestrian mobility in this region, there should be much more similar practices in this region. (Figure 6.37).



Figure 6.35. Continuity analysis for Zone 1(Prepared by V. ER)



Figure 6.36. Continuity analysis for Zone 2 (Prepared by V. ER)

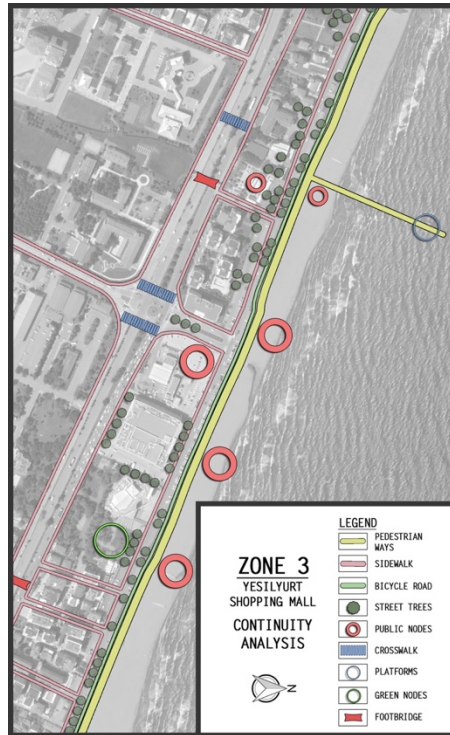


Figure 6.37. Continuity analysis for Zone 3(Prepared by V. ER)

Overall Evaluations

As seen in Table 6.6, quality of path in Zone 1 and Zone 2 are much better than Zone 3 due to the number of trees, quality of floor covering, wide and clean pedestrian ways, existence of green areas. Therefore, a value of 1 for Zone 1 and Zone 2 but a value of 0 for Zone 3 is given to integrate into the model.

Moreover, facade continuity can be said to be better in only Zone 2. In Zone 1 and Zone 3 there is almost no continuity of the facade. The main reasons for such a result are the fact that there are very different forms of structures and the heights of the floors are very different from each other. As a result of qualitative and quantitative evaluations, a value of 1 for Zone 2 and a value of 0 for Zone 1 are considered.

In addition to facade continuity, landscape and urban sign elements help to increase continuity in three zones at the same way because these urban applications have been proposed equally in almost every urban area of Atakum Coastal Promenade. In other

words, urban landscape practices and sign elements are suggested and applied homogeneously to every region along the coastal road by Atakum Municipality. Therefore, the values of these variables in the polygon model are evaluated as 1.

In brief the variable inputs of the polygonal model are determined. Regarding the quality of paths, it is evaluated as a 1 value for both Zone 1 and Zone 2, but 0 value for Zone 3. Then, Zone 2 is set to 1 value, Zone 1 and Zone 3 are set to 0 value regarding facade continuity. Finally, the value of diversity of landscape and urban sign elements is evaluated as 1 for all three zones. In total, while Zone 3 has 1 value, Zone 1 and Zone 2 have 2 values. This means that while Zone 3 shows 1 level publicness of public space in terms of continuity dimension, Zone 1 and Zone 2 show 2 level publicness (Table 6.6).

Table 6.6. *The outcome evaluation of three sample zones with respect to continuity*

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
CONTINUITY	Quality of Paths	1 Good 0 Poor	0-3	1	1	0
	Facade Continuity	1 Strong 0 Weak		0	1	0
	Landscape and Urban Sign Elements	1 Sufficient 0 Insufficient		1	1	1
	Overall Evaluation				2	2

To sum up, when all results are taken into consideration, it is obvious that Zone 1 (Kurupelit Marina) and Zone 2 (Çobanlı Pier) are better public space than Zone 3 (Yeşilyur Shopping Mall) with respect to the continuity indicator having three important variables, and thus have better publicness of public space as regards morphological aspect.

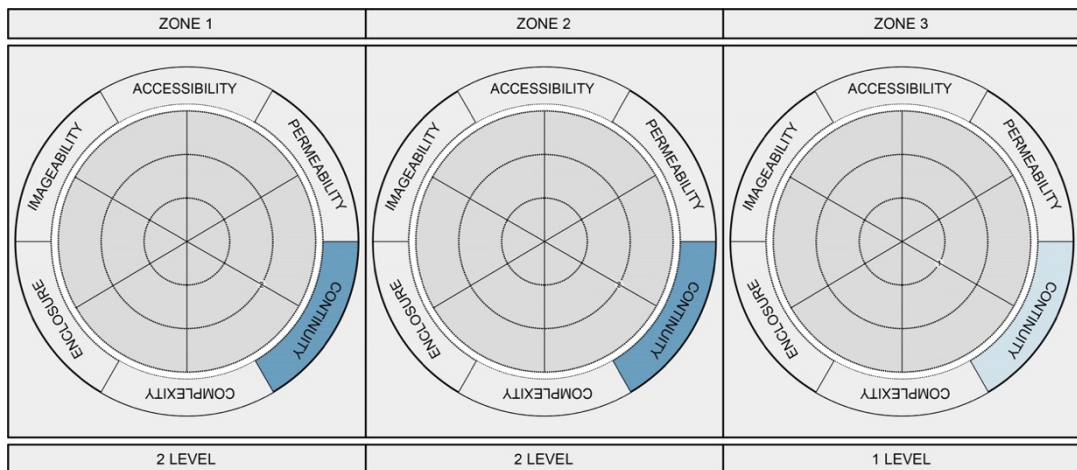


Figure 6.38. Continuity level of three character zones by polygon model (Prepared by V. ER)

6.4. Complexity

Complexity is basically the source of the richness of the space. The complexity of the urban elements in the public spaces result in increasing the attraction and interest of the related region. There are many variables of complexity and this section discusses four main variables in terms of variety of building types, variety of activities, diversity of landscape elements and different types of floor coverings.

6.4.1. Variety of Building Type

The presence of different structures can stimulate human perception and enable people to walk around in places with different structures. It is much more difficult for people to walk around in a simple and monotonous place. Many different types of structures can increase these human movements and allow them to enjoy more while navigating the space. Thus, the publicity of public spaces is increased. For these reasons, direct observations and surveys were conducted in three main regions in the field.

For the evaluating the variety of the building types, two questions were asked to participants to investigate what they think about this term. The first question is “whether the surrounding structures increase diversity to the area in terms of aesthetics” (Figure 6.39). According to this statement in questionnaire, most

participants claimed building type do not increase diversity and so complexity in the Zone 1 and Zone 3 but they partially agreed with the Zone 2 in spite of significantly high rate of the disagreement. The second question regarding variety of building type is “whether there are different and important architectural structures” (Figure 6.40). The great majority of respondents partially thought that there are some significant and interesting buildings in three zones. In fact, when we look at the percentage of those who agree, there are not many architecturally interesting buildings in these three study regions.

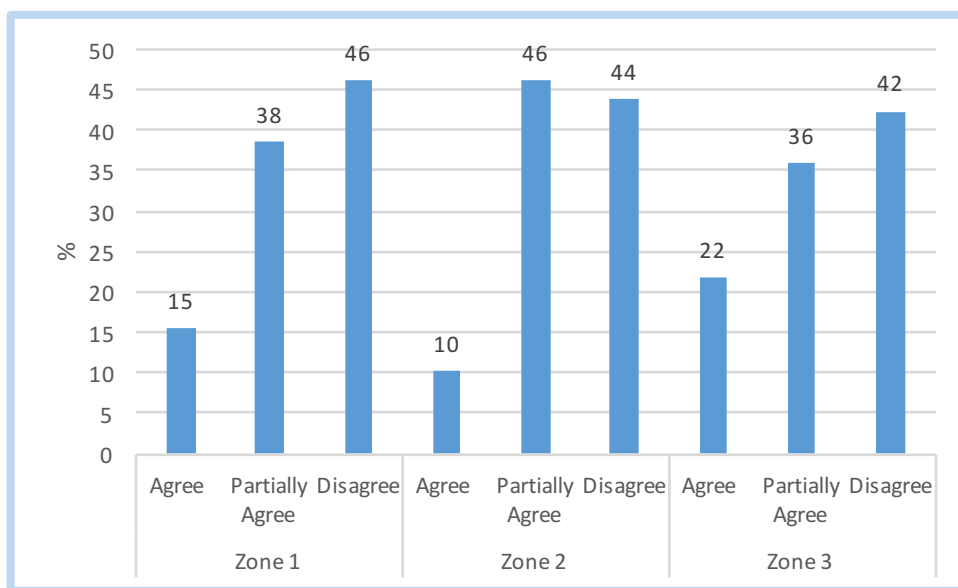


Figure 6.39. The outcome of “whether the surrounding structures increase diversity to the area in terms of aesthetics” according to sub-zones

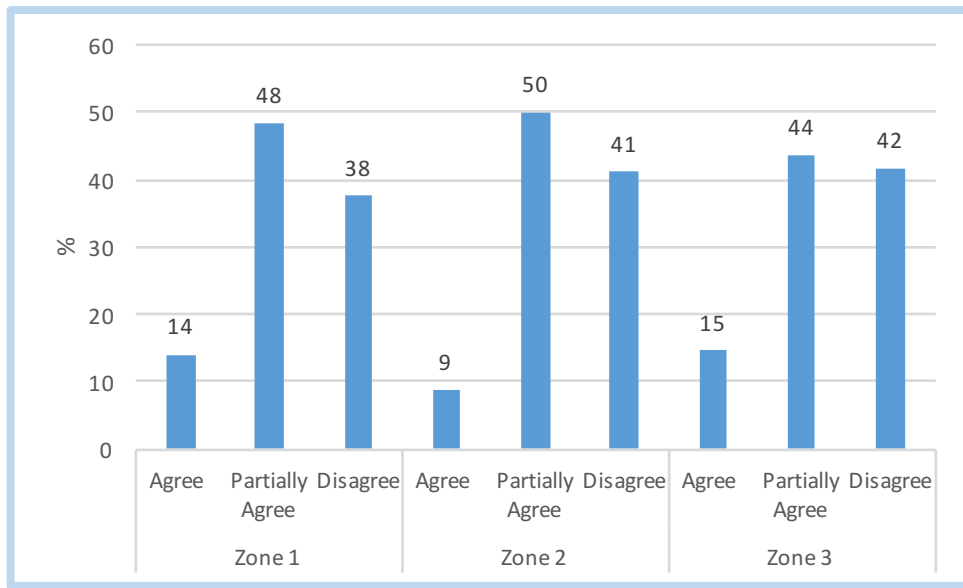


Figure 6.40. The outcome of “whether there are different and important architectural structures.” according to sub-zones





Figure 6.41. a) Different cafes in Zone 1 b) New different buildings in Zone 1 c) Palmiye Cafe in Zone 2 d) Chicken restaurant in Zone 2 e) Atakum wedding hall in Zone 3 f) Atakum Art Center in Zone 3 (Author's Personal Archive)

6.4.2. Variety of Activities

The diversity and number of activities in public spaces is another important factor affecting the publicity of that region. The more various urban reinforcement areas are available, the more it becomes a public space. For this reason, activities were determined in three regions and the results were evaluated with the help of surveys and direct observations.

There is one question in survey regarding the variety of activities in order to investigate complexity of public space. This statement is of “whether the number of activities in the region is sufficient with different urban areas (cafes, bars, markets, buffets, etc.)” (Figure 6.42). According to respondents, most of them claimed that Zone 2 and Zone 3 have different urban activities and the number of them is sufficient for these zones. However, Zone 1 do not have many urban activities and so publicness of that space is quite low compared to Zone 2 and Zone 3. The main reason for such a result is that urban uses in Zone 1 are not yet fully operational because many buildings are under construction and some are undergoing renovation. Few are now serving people. Therefore, according to the results of the surveys, the number of urban activities in this region was low.

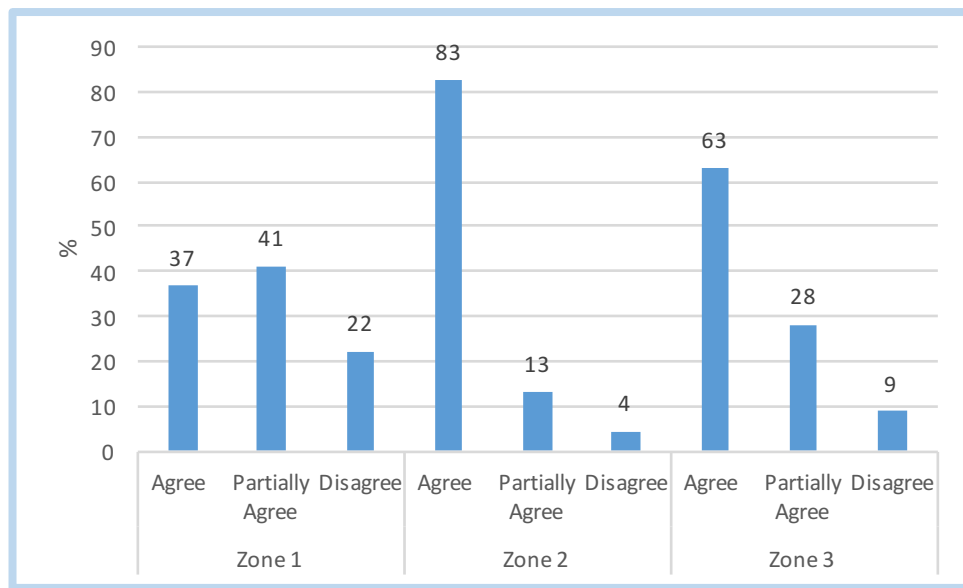


Figure 6.42. The outcome of “whether the number of activities in the region is sufficient with different urban areas (cafes, bars, markets, buffets, etc.)” according to sub-zones

According to direct observation, the basic land uses in Zone 1 consist of entrance floor trade and upper floors housing, single-storey cafes and multi-storey residences. There is also a sports field and a parking area with amphitheatre. In general, there is simple land use and the number of urban activities is not very high. However, Zone 2 is the region with the highest number of activities. It has been determined that especially cafes and restaurants are concentrated in this region. In addition, sports areas, green areas and recreation areas are concentrated in this region. Although there are some public buildings, the general characteristic is entrance floor trade and upper floors housing. Zone 3, on the other hand, is rich in terms of variety of activities compared to other regions. Unlike other regions, there are many public buildings such as Regional Directorate of State Hydraulic Works (DSİ) and General Directorate of Highways (KGM). In addition, the largest dormitory building to serve this region is an important urban land use that increases the publicity of this public space.

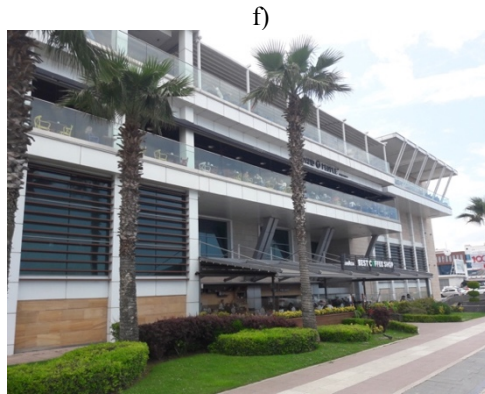
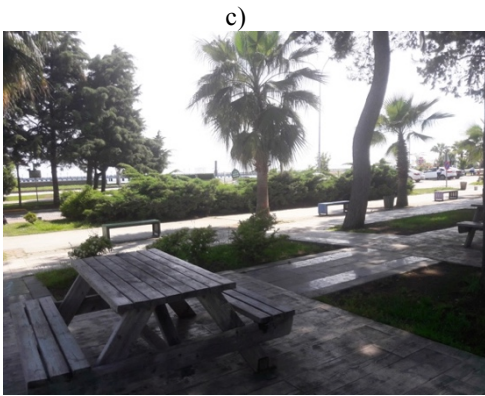
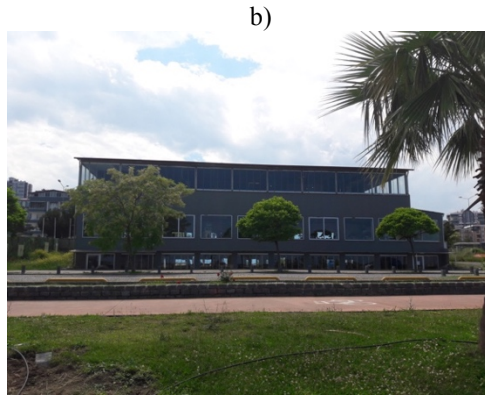


Figure 6.43. a) Friends Burger Cafe in Zone 1 b) Gym center in Zone 1 c) Green area in Zone 2 d) Basketball court area in Zone 2 e) Amusement park in Zone 3 f) Yeşilyurt Shopping Mall in Zone 3 (Author's Personal Archive)

6.4.3. Diversity of Landscape Elements

Landscape elements are as important as diversity of activities and richness of buildings. They are able to regulate and control pedestrian movements and ensure a healthy circulation of pedestrians on a convenient route. In particular, the use of green elements can be used to define footpaths. It can regulate the access of public spaces and increase their publicity. For this purpose, landscape elements analysis was carried out in these three regions. The diversity and number of these elements were confirmed by surveys and observations and the results were evaluated.

Regarding the diversity of landscape elements, one question was asked to public space' users. It is "whether the richness of urban landscape elements supports diversity in the region" and a great majority of participants partially agreed that there are many different urban landscape elements in Zone 1 and Zone 2, which increase diversity of urban elements and result in complexity of the public space (Figure 6.44). However, Zone 3 do not have many landscape elements because large urban areas such as shopping centers dormitory campus (KYK) and some public buildings dominate the area in terms of land use. Landscape elements are not given enough importance and this is almost lost between the intensive construction. However, there should be more landscape elements in that urban space where such densely used buildings are located.

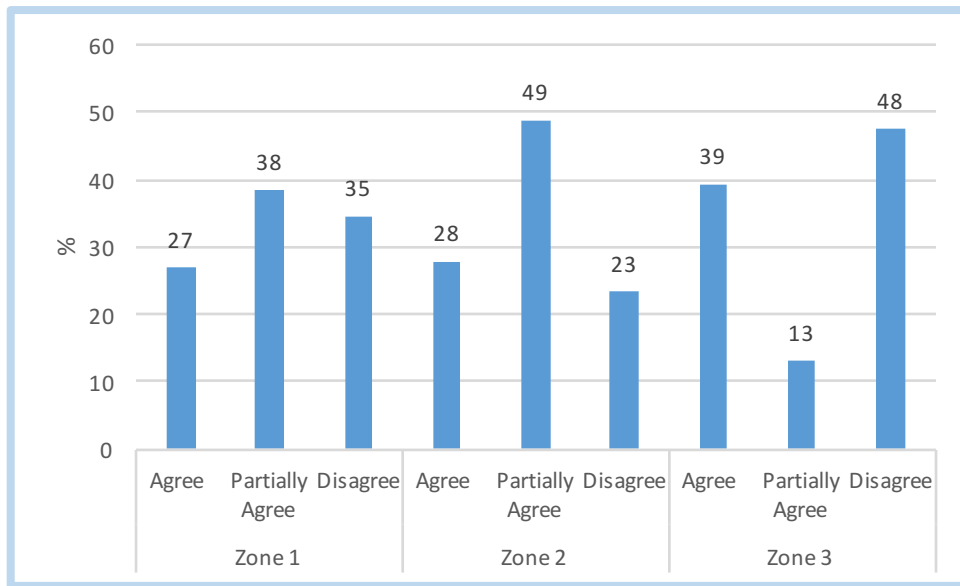


Figure 6.44. The result of “whether the richness of urban landscape elements supports diversity in the region” according to sub-zones





Figure 6.45. a) Green area in Zone 1 b) Path, bicycle road, green surface and tree c) Path, sitting area and tree in Zone 2 d) Sitting area, floor covering, path and tree e) Art center open space, green park and tree in Zone 3 f) Atakum coastal road, car parking area and tree (Author's Personal Archive)

6.4.4. Different Types of Floor Coverings

Floor covering is another factor that can increase the diversity and richness of the space because the diversity of the floor coverings breaks the monotony of pedestrian movement and makes people move in different emotions. In addition, different floor coverings can define the routes of different movements and thus create a public space where movement is fast and smooth. For example, when the bike path, the pedestrian path and the open squares are defined by different floor coverings, these three different movements can be run smoothly without interfering with each other. The floor coverings used to describe these different uses were analysed in the framework of this study with surveys and observations for these three regions and the results were prepared as graphs and tables.

For the assessment of different types of floor coverings, public space users were only asked the question of is “whether the diversity of open spaces with distinctive floor coverings is evident” and most of them partially agreed that all zones have sufficient different floor covering (Figure 6.46).

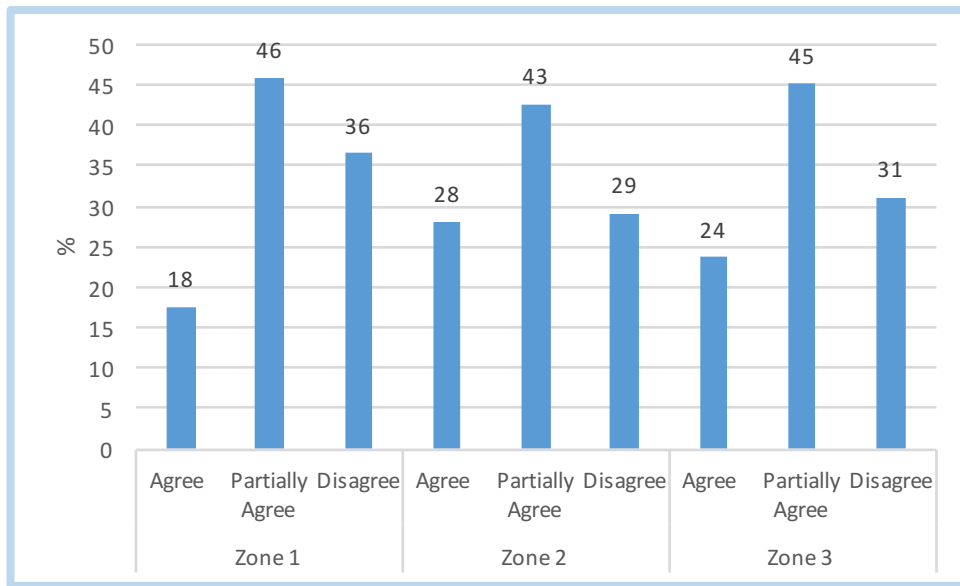


Figure 6.46. The result of “whether the diversity of open spaces with distinctive floor coverings is evident” according to sub-zones





Figure 6.47. a) Bikeway, green surface and tree in Zone 1 b) Main open space and circulation path in Zone 1 c) Open space, bikeway and car road in Zone 2 d) Car road and car parking areas in Zone 2 e) Beach, path and bikeway in Zone 3 f) Sitting area, tree, path and bikeway in Zone 3 (Author's Personal Archive)

6.4.5. The Outcome Evaluation of Complexity in Sample Zones

Quantitative Evaluations

Complexity is an indicator of the richness and diversity of public space. The existence of different architectural structures, the large number of urban activities, the richness of landscape elements and the use of floor coverings in the definition of space are important factors that determine the publicity of a space. In Table 6.7, each variable of complexity is expressed with an initial; variety of buildings as CO1 and CO2, variety of activities as CO3, diversity of landscape elements as CO4 and different types of floor covering as CO5.

Table 6.7. The evaluation of survey results in three sample zones with respect to complexity

	QUESTIONS/STATEMENTS	Z1	Z2	Z3
CO1	The surrounding structures increase diversity to the area in terms of aesthetics	Disagree (%46)	Partially Agree (%46)	Disagree (%42)
CO2	There are different and important architectural structures.	Partially Agree (%48)	Partially Agree (%50)	Partially Agree (%44)
CO3	The number of activities in the region is sufficient with different urban areas (cafes, bars, markets, buffets, etc.).	Partially Agree (%41)	Agree (%83)	Agree (%63)
CO4	The richness of urban landscape elements supports diversity in the region.	Partially Agree (%38)	Partially Agree (%49)	Disagree (%48)
CO5	The diversity of open spaces with distinctive floor coverings is evident.	Partially Agree (%46)	Partially Agree (%43)	Partially Agree (%45)

The results of the survey questions about the diversity of building diversity in the space show that participants partially agree with the 46% for Zone 2, but disagree with Zone 1 and Zone 3. Although most of them partially agreed that there are some aesthetic buildings in terms of architecture, they stated that this is not sufficient to increase the diversity of public space.

In terms of variety of urban activities, Zone 2 is very rich public spaces and has the highest agreement rate by the participants. Likewise, this issue is found to be highly variable in the activity diversity in Zone 3.

According to the survey results about urban landscape applications, Zone 2 is the richest urban area. In fact, even though the Zone 1 region has received some positive results as a result of the responses of the participants, it is not as diverse as Zone 2 by considering the rate of votes (38%).

Finally, quantitative observations on the variety and application of floor coverings show that floor coverings are considered to be at the same level in the three regions at by consensus of the participants with a vote rate of about 40-50%.

In short, in terms of building diversity and number of activities, Z2 has a better public space than other regions. In terms of landscape elements, it was found that all regions show similar characteristics. Finally, in terms of the quality and use principle of floor coverings, the Z1 and Z2 regions are more diverse than the Z3 region.

Qualitative Evaluations

With qualitative researches on the subject of building diversity, Zone 3 has more types of structure than the other two zones. There are different architectural styles such as Yesilyurt Shopping Center, Atakum Art Center and Atakum Youth Center in Zone 1. The richness of the architectural structures provided by these structures affects people's perceptions and does not exist in a homogeneous and monotonous place, but rather a sense of being in a more diverse public space. Zone 1 also has a variety of structures, but not as much as Zone 3. The presence of high-rise buildings attracts attention in that place. However, it is not sense to evaluate this difference as the richness of the structure. On the contrary, this is evidence of distorted urbanization. Finally, although Zone 2 has a wealth of urban activity, it does not have a wealth in this regard when we consider buildings as architectural aesthetics. Almost all of the buildings are found to have 2 or 3 floors and all are very similar in architectural diversity.

Regarding the richness of urban activity, Zone 2 and Zone 3 have more diversity than Zone 1. The fact that the Zone 2 area is not only has many cafes and restaurants, but also green and sports areas proves this situation. In the same way, Zone 3 has many different public structures and offers many opportunities to people along with the shopping mall factor. However, Zone 1 stands out in the back compared to the other two regions because it has very few urban activity areas. This is the case now because many new urban activities are expected to become operational in the coming years.

Finally, the assessments on the diversity of landscape elements and the richness of floor coverings show that Zone 1 and Zone 2 have an important diversity in these issues. In fact, there are similar applications for Zone 3, but given the density of people and structures of the Zone 3, landscape applications and floor coverings are insufficient.

Overall Evaluations

With the help of qualitative and quantitative evaluations, the variable inputs of the polygonal model are determined. Concerning the variety of building types, it is evaluated as a 1 value for Zone 3, 0 value for both Zone 2 and Zone 1. Moreover, Zone 1 is set to 0 value, Zone 2 and Zone 3 are set to 1 value in terms of variety of activities. Finally, the value of diversity of landscape elements and floor coverings variable is evaluated as 1 for both Zone 1 and Zone 2, but 0 for Zone 3.

In total, Zone 1 has 1 value, Zone 2 and Zone 3 have 2 values. This means that while Zone 1 shows 1 level publicness of public space in terms of complexity dimension, Zone 2 and Zone 2 show 2 level publicness (Table 6.8).

Table 6.8. *The outcome evaluation of three sample zones with respect to complexity*

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
COMPLEXITY	Variety of Building Types	1 Varied 0 Monotone	0-3	0	0	1
	Variety of Activities	1 Varied 0 Monotone		0	1	1
	Diversity of Landscape Elements and Floor Coverings	1 Varied 0 Monotone		1	1	0
	Overall Evaluation				1	2

In conclusion, if all outcome evaluations are taken into consideration, it is obvious that Zone 2 (Çobanlı Pier) and Zone 3 (Yeşilyur Shopping Mall) are better public space than Zone 1 (Kurupelit Marina) with respect to the complexity indicator having three important variables, and thus have better publicness of public space as regards morphological aspect.

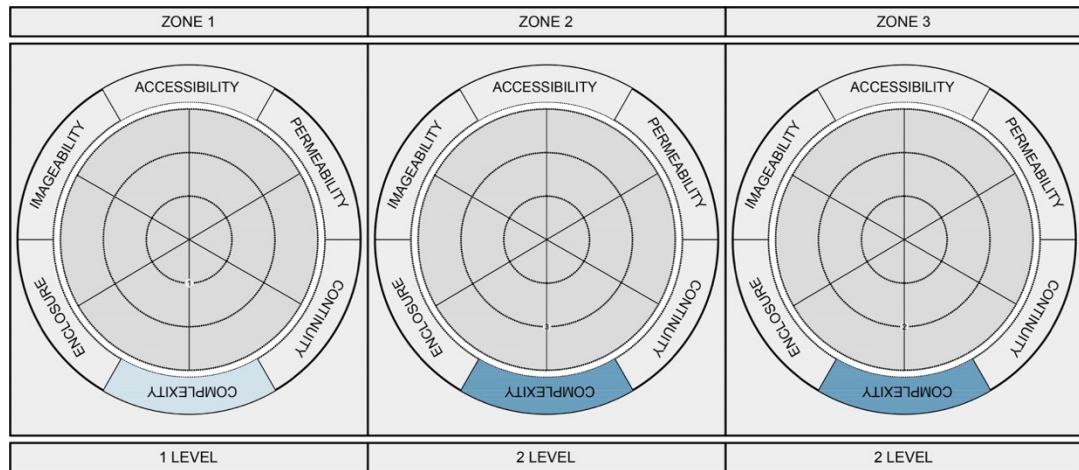


Figure 6.48. Complexity level of three character zones by polygon model (Prepared by V. ER)

6.5. Enclosure

Enclosure is an important morphological dimension for examining the publicness of public spaces. The main objective of this principle is to understand what is pedestrian enclosure. It is a crucial factor to clarify safety in terms of physically and perceptually. There are three main elements that influence pedestrian enclosure with respect to human scale, building orientation and street furniture.

6.5.1. Human Scale

Human scale in a well-enclosed street means that convenient width of sidewalk can provide effective pedestrian circulation and increase pedestrian movement activities. The main objective of this principle feature of this study is to describe whether some sections of the coastal road are sufficient or not.

As a result of the observations made in the study area, it was determined that Zone 1 has large walking paths. Although the walking areas in Zone 2 are generally sufficient, the footpath width in Zone 3 is very insufficient. As a result of the counts made in these three study areas, Zone 1 is the least used and visited, although the largest open areas are in this region. Strangely enough, Zone 3, which most users visit, has the narrowest footpaths. It has been found that many people even occupy vehicle lanes and bicycle lanes for movement.

6.5.2. Urban Furniture

The second factor that creates the pedestrian enclosure is urban furniture. Not only street furniture but also street trees play crucial role of differentiation between pedestrians and vehicles and this it provides people with safety from disadvantages of traffic like noise and pollution.

The location of the green spaces and the positioning of the trees play a very important role in defining the space. Well enclosed street or poor enclosed street can be determined regarding these land use activities. The use of green can arrange different types of movements. As seen in Figure 6.49, by separating pedestrian movements and vehicle flow from each other, both transports can be provided in a safe environment for pedestrians.

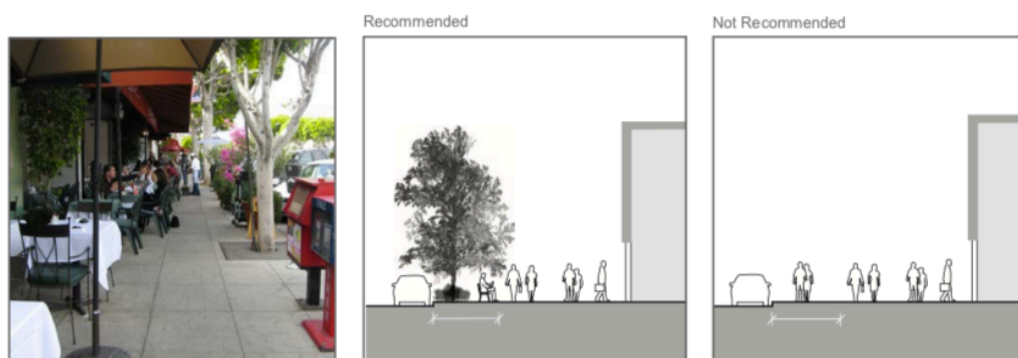


Figure 6.49. Arrangement of tree create safety public space by buffering between pedestrian movements and car traffic (LA-Walkability, 2008)

Moreover, street furniture not only allows pedestrians to move in a safer environment, but also helps create a more pleasant feeling of space. According to Figure 6.50, trees allow the streets to be perceived narrower and thus street users can perceptually feel safe. Also, the use of trees significantly increases the walkability of spaces and therefore contributes greatly to the publicity of public spaces.

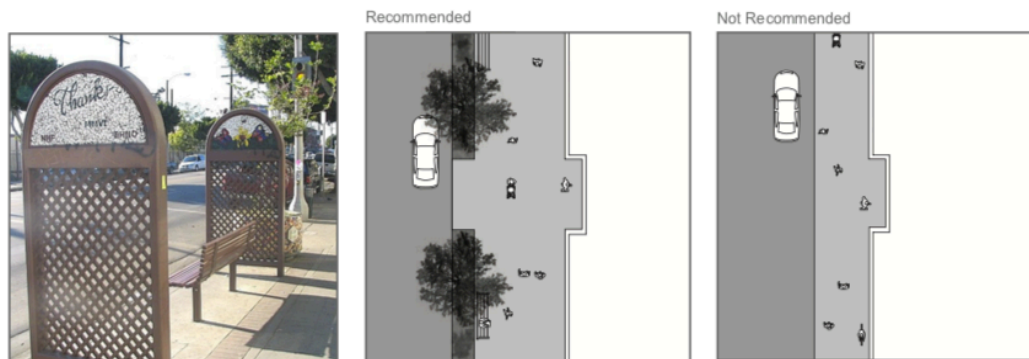


Figure 6.50. Street furniture can create stable rhythm (LA-Walkability, 2008)

To investigate this issue, two related questions were asked of the pedestrians to learn about their views of the green spaces in the area to describe the public space. The first question is “whether the presence of green spaces and trees in the region defines the public space”. Regarding the statement, a great majority of the pedestrians partially agreed that green areas and the arrangement of trees can define the public space for all three character zones (Figure 6.51).

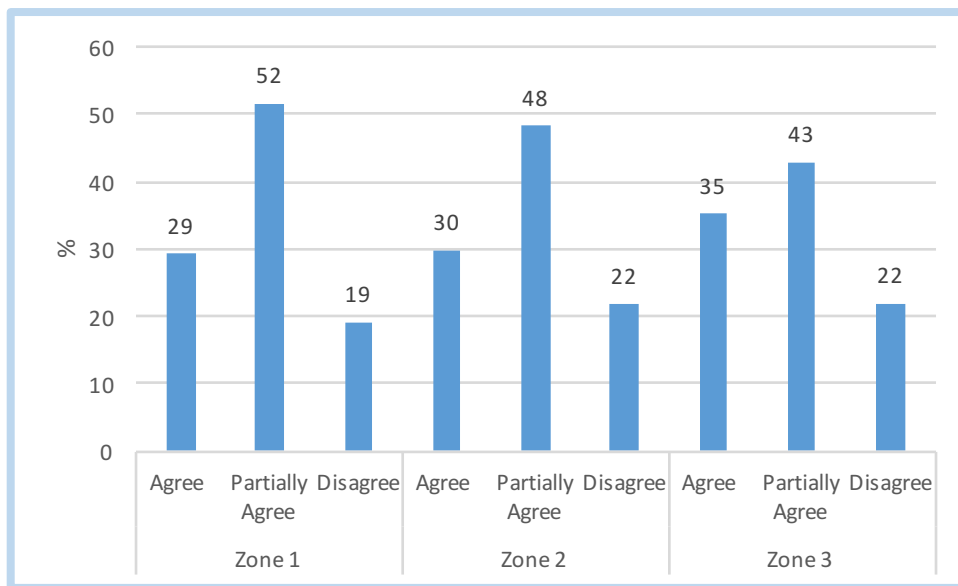


Figure 6.51. The result of “whether the presence of green spaces and trees in the region defines the public space” according to sub-zones

The second question is “whether street furniture facilitates pedestrian and vehicle movement” (Figure 6.52). Regarding this statement, the majority of the participants agreed that street furniture generally regulates vehicles and pedestrian roads for these three regions. However, the street furniture in Zone 3 is inadequate. This is probably due to the fact that the function of street furniture cannot respond to the intensive use of pedestrians especially with Yesilyurt Shopping Mall, public facilities and private dormitories.

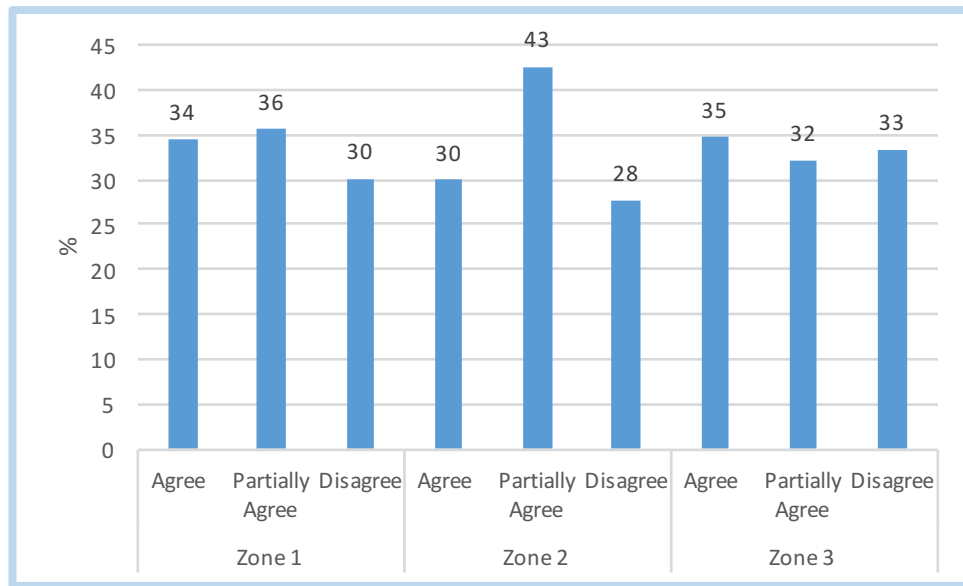


Figure 6.52. The result of “whether street furniture facilitates pedestrian and vehicle movement” according to sub-zones

However, as a result of the direct observations, it is clear that street furniture will be insufficient for these three areas, even if it is partly sufficient now, with the increasing population in the future and with the pressure of increasing construction. Finally, Zone 1 is a new urban area, although street furniture seems to be sufficient to describe the public space, it is determined that the future investments will be insufficient in terms of street furniture in this area with the new investments to be made and the investments currently under construction.



Figure 6.53. a) Path, car parking area and tree in Zone 1 b) Open space in Zone 1 c) Car road, trees, bikeway and path in Zone 2 d) Green area with street furniture in Zone 2 e) Open space and green space in Zone 3 f) Car parking area, trees, bikeway and path in Zone 3 (Author's Personal Archive)

6.5.3. Building Orientation

The building orientation is dealt with as to whether the structures describe the coastal path sufficiently. The building heights and the position of the buildings are important in this respect. It is tried to explain whether the structures have common language in order to clearly define the coastal road. The most important issue here is whether the structures define the edges or borders of the public space. If structures define boundaries, public space enclosure is achieved, and pedestrian enclosure is also successfully achieved.

Two related questions were asked to public space users in the research study area. The first question is “whether the setback distances of the buildings facing the beach are similar and define the coastal road” (Figure 6.54). Concerning this statements, building orientation and their setback distance in Zone 3 could define the coastal promenade in contrast with Zone 2 and Zone 1. However, considering the results of the surveys for three regions, the building setback for each region actually describes public spaces and increases their publicity.

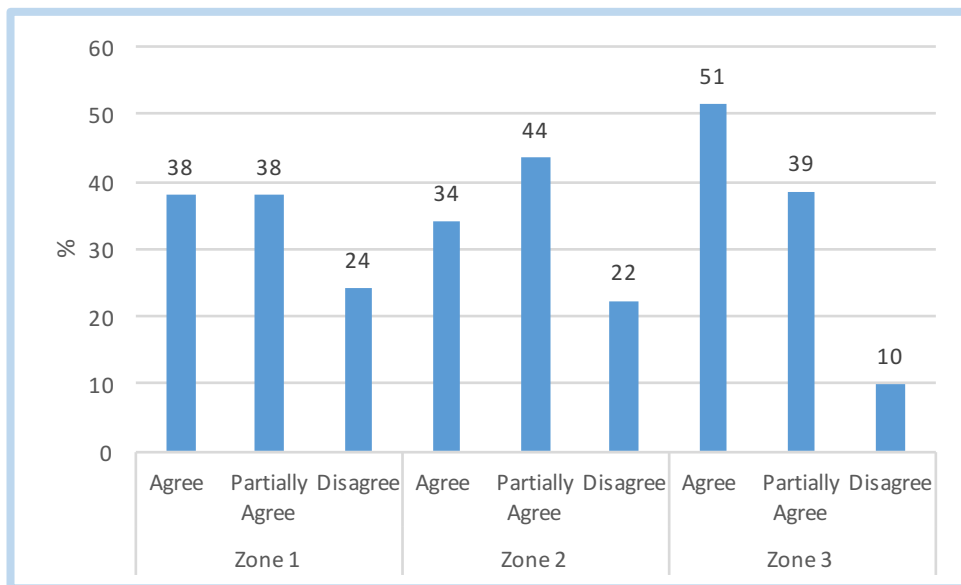


Figure 6.54. The result of “whether the setback distances of the buildings facing the beach are similar and define the coastal promenade” according to sub-zones

The second question is “whether the orientations and sessions of the structures on the beach clearly define the coastal path and a great majority of participants claimed that the building orientation is suitable in order to describe Atakum Coastal Promenade and it is not serious problem to investigate publicness of public space in three zones (Figure 6.55)

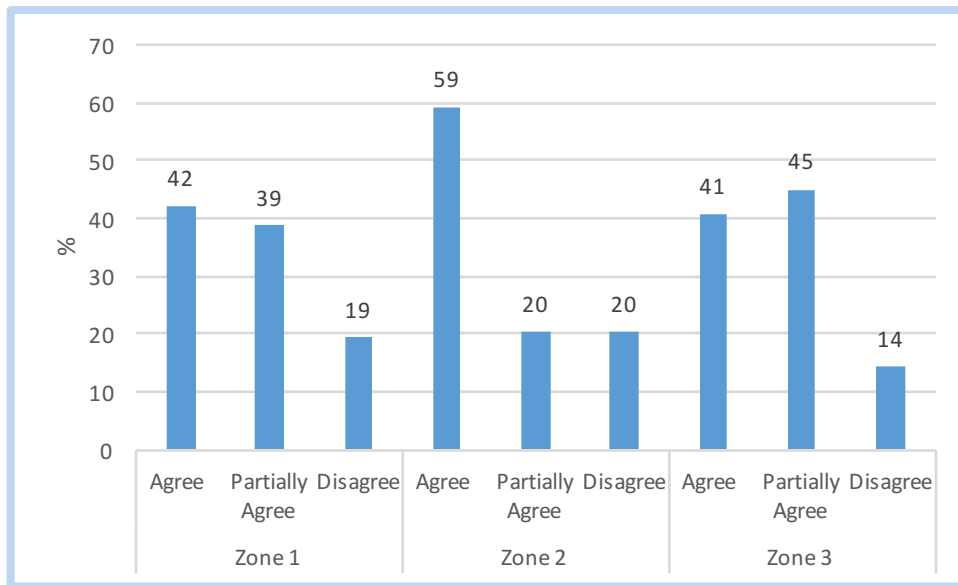


Figure 6.55. The result of “whether the orientations and sessions of the structures on the beach clearly define the coastal path” according to sub-zones

6.5.4. The Outcome Evaluation of Enclosure in Sample Zones

Quantitative Evaluations

The questionnaire results are shown in Table 6.12 and all three different zones are introduced into columns and each related questions/statements of survey are grouped within each indicator and introduced along rows. There are some initiations used to define indicators in this table and these are; E1 and E2; stand for “Urban Furniture”, and E3 and E4 stand for “Building Orientation”.

Table 6.9. The evaluation of survey results in three sample zones with respect to enclosure

	STATEMENTS	Z1	Z2	Z3
E1	The presence of green spaces and trees in the region defines the public space.	Partially Agree (%52)	Partially Agree (%48)	Partially Agree (%43)
E2	Street furniture facilitates pedestrian and vehicle movement.	Partially Agree (%36)	Partially Agree (%43)	Agree (%35)
E3	The front towing distances of the buildings facing the beach are similar and define the coastal road.	Agree / Partially Agree (%38)	Partially Agree (%44)	Agree (%51)
E4	The orientations and sessions of the structures on the beach clearly define the coastal path.	Agree (%42)	Agree (%59)	Partially Agree (%45)

The majority of the participants partially agree that all study areas are good in terms of green space uses and tree arrangement with 52%, 48% and 43% respectively. Since Zone 1 is a new development area, recent green area applications have caused this region to be higher in the survey results compared to other regions.

Also, they partially and fully agreed on all these spaces have sufficient street furniture facilitates with a slightly lower percentage. Zone 2 is better than other regions at 43 percent, and shows a better public space with a slight difference in value with especially its strong green texture.

According to the results of the survey, respondents both partially or fully agreed that the three zones have similar characteristics with respect to building towing distances. The main reason why Zone 3 and Zone 2 are higher than Zone 1 is that the structures in these regions are more compatible with each other and define the public space a little better.

Like front towing distance, the orientations and sessions of the structures of these three show similar characteristics. Participant agreed that buildings in Zone 1 and Zone 2

define each other more and make it perceived as a straight line on the coastline. In the same way, Zone 3 is considered to be an important public space in this regard, although some participants partially agreed on this issue.

Qualitative Evaluations

The principle of enclosure actually applies more to the streets. In other words, it is a valid academic literature for streets defined by structures on both sides. However, Atakum Coastal Promenade is defined by structures on one side and by the sea on the other side. Therefore, in this thesis, this principle is based on not only to investigate how surrounded buildings lying along the single facade of the coastal road create enclosure but also to obtain analysis findings by focusing on a more pedestrian enclosure.

The arrangement of parks, recreation areas, sports fields and trees are generally, similar in the Atakum Coastal Promenade. However, these applications are inadequate due to intensive use in Zone 3. Therefore, Zone 1 and Zone 2 have much more applications in terms of green system elements.

When it comes to building frontal distances and orientation of buildings, as seen in Figure 6.56, 6.57 and 6.58, Zone 2 and Zone 3 have more features as public spaces have a stronger enclosure. The fact that the buildings in this region are located regularly between the two streets is the most important reason that these places show more publicness in terms of enclosure. However, it is found that many structures in Zone 1 are still under construction, and are therefore inadequate to describe the urban gaps and public space on the shore.

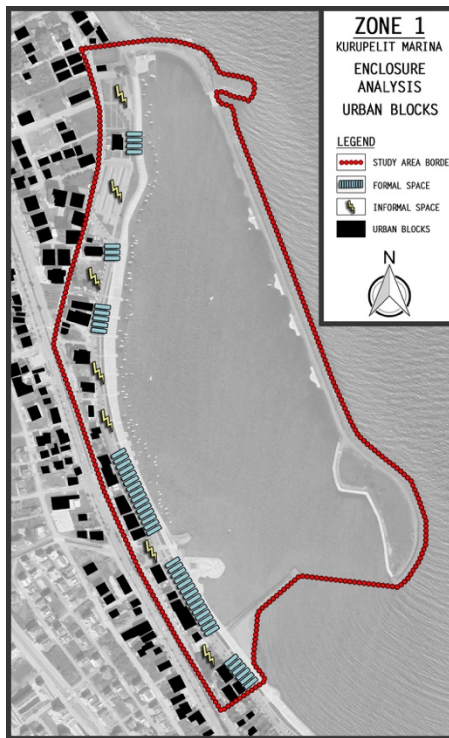


Figure 6.56. Enclosure analysis for Zone 1 (Prepared by V. ER)

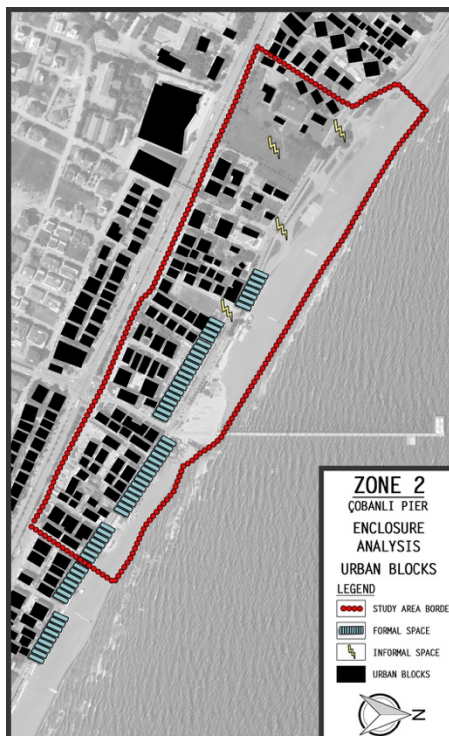


Figure 6.57. Enclosure analysis for Zone 2 (Prepared by V. ER)

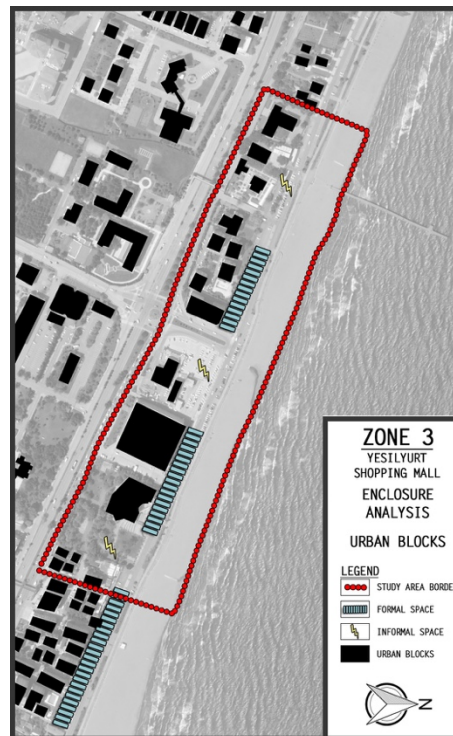


Figure 6.58. Enclosure analysis for Zone 3 (Prepared by V. ER)

Overall Evaluations

Regarding the open green areas and trees, it is evaluated as a 1 value for Zone 1 and Zone 2 and 0 value for Zone 3 in order to adapt the findings to the model. And then, all three-character zone are set to 1 value in terms of street furniture. Finally, the value of urban block orientation variable is evaluated as 0 for Zone 1 and 1 for both Zone 2 and Zone 3. In total, Zone 1 and Zone 3 have 2 value and Zone 2 has 2 values. This means that while Zone 2 shows 3 level publicness of public space in terms of complexity dimension, Zone 1 and Zone 3 show 2 level publicness (Table 6.10).

Table 6.10. The outcome evaluation of three sample zones with respect to enclosure

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
ENCLOSURE	Open Green Areas and Trees	1 Good 0 Poor	0-3	1	1	0
	Street Furniture	1 Strong 0 Weak		1	1	1
	Urban Block Orientation	1 Sufficient 0 Insufficient		0	1	1
	Overall Evaluation			2	3	2

Zone 2 has more enclosure morphological character in terms of human scale compared to the Zone 1 and Zone 3. Moreover, all three zones have same quality in the sense of urban furniture. Lastly, building orientation and setback distance give great advantages to Zone 2 to define border of public space and thus it increases publicness of that space. To sum up, Zone 2 have more pedestrian enclosure, spaces with respect to three main variables of by the help of both qualitative and quantitative research.

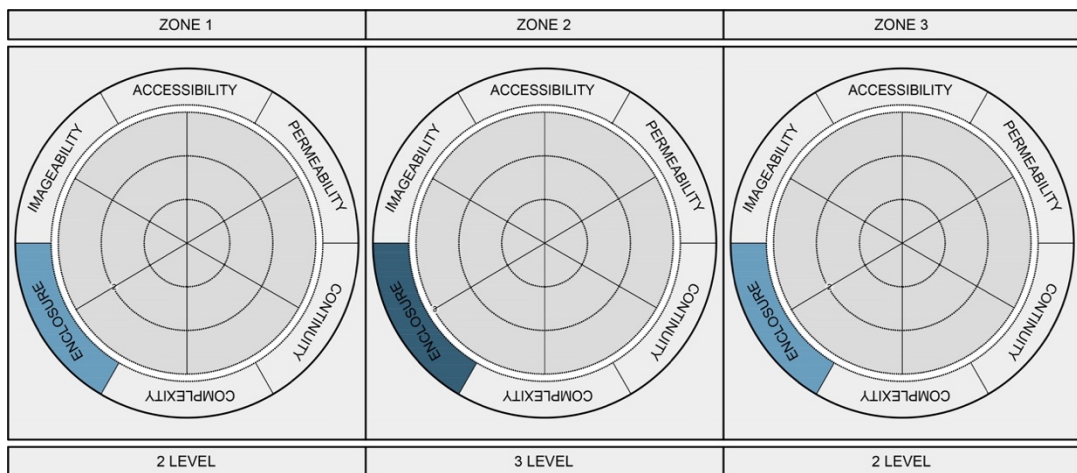


Figure 6.59. Enclosure level of three character zones by polygon model (Prepared by V. ER)

6.6. Imageability

The final morphological indicator to investigate publicness of public space is imageability. To examine this indicator, landmarks, diversity of urban use and sense of way-finding variables are defined and each morphological indicator is examined in the next sections.

6.6.1. Landmarks

Landmarks provide direction in the space; they are the elements that serve to describe, remember, learn and acquire space in the mind. In this concept, the question “whether landmarks (monuments, statues, clock towers, etc.) are at sufficient levels in the open areas of the region” was prepared to be asked public space’ users.

One question was asked to participant to learn whether the number of landmarks is enough for character zones. The question is “whether landmarks (monuments, statues, clock towers, etc.) are at sufficient levels in the open areas of the region” and a great majority of respondents claimed that there is significant lack of landmarks in Atakum Coastal Promenade (Figure 6.60).

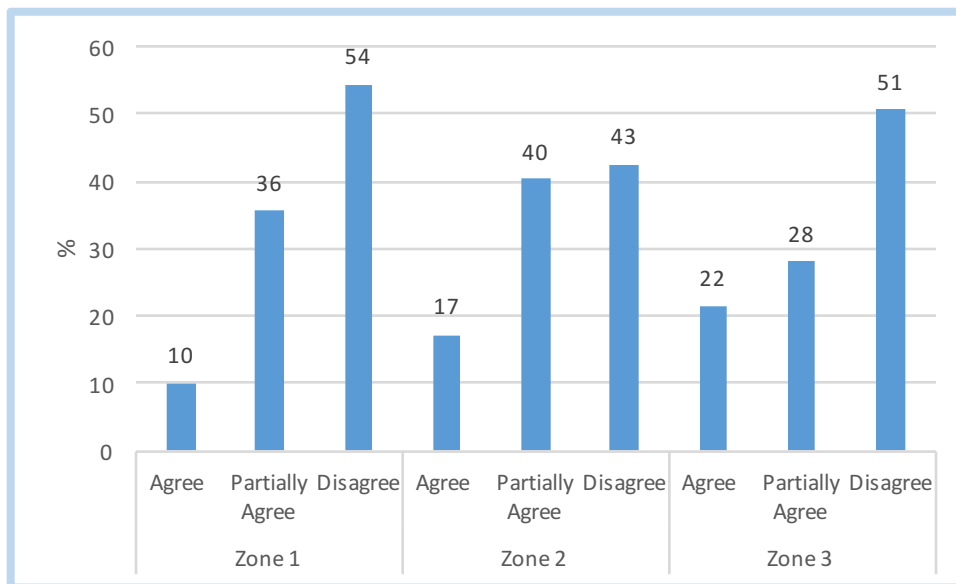


Figure 6.60. The result of “whether landmarks (monuments, statues, clock towers, etc.) are at sufficient levels in the open areas of the region” according to sub-zones

In detail, according to Figure 6.60, It is obvious that the three study regions are insufficient in terms of the number of landmarks, and all participants agreed in this sense. Zone 3 is inadequate in terms of the number of landmarks with a value of 22% but it is the highest value compared to other regions. As a result of the analysis studies in the region, some of the main reasons behind such a conclusion have been identified. The first is that Yesilyurt Shopping Mall can be easily detected remotely by users. The size of the structure contributes to the sense of direction in the space and describes the public space. In addition, the presence of the sculpture in front of the Atakum Art Center and the small pier identified by the Samsun logo at the entrance made the imageability variable in Zone 3 the higher percentage than the other regions. This difference is also evident in the survey results.

a)



b)



c)



d)





Figure 6.61. a) Changing cabins and showers in Zone 1 b) Entrance of Çobanlı Pier in Zone 2 c) Samsun logo in Zone 2 d) Deniz Cafe in Zone 2 e) Samsunspor logo at small pier in Zone 3 f) Women sculpture at Art Center in Zone 3 (Author's Personal Archive)

6.6.2. Diversity of Urban Uses

The existence of different urban uses in a public space increases the publicness and diversity of public space. It can appeal to many audiences by offering users different options. Thus, users can visit public spaces for different purposes. In order to analyse this issue, one question was prepared to be asked to the users of public spaces. This question is “whether different urban uses (cafes, bars, markets, clothing stores, gyms, etc.) are located together in the region”. According to results, participants claimed that Zone 2 and Zone 3 have different urban uses rather than Zone 1. Indeed, according to Figure 6.62, Zone 3 is in the first place with 48%, while Zone 2 is in the second place with 43% and Zone 1 is the last place with 27%.

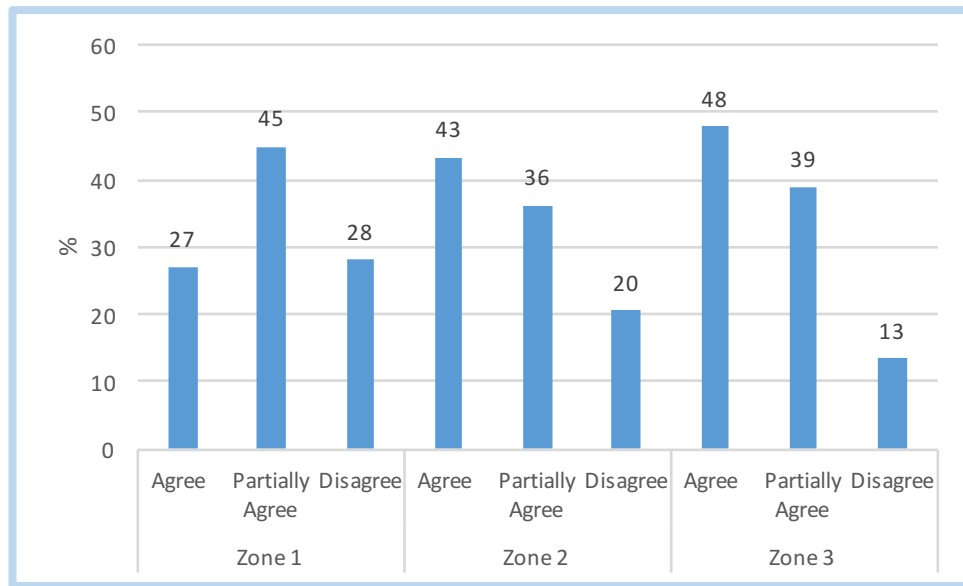


Figure 6.62. The result of “whether different urban uses (cafes, bars, markets, clothing stores, gyms, etc.) are located together in the region” according to sub-zones

6.6.3. Sense of Way Finding

Sense of way-finding is that the user can achieve his or her goal without any worries. While moving in space is an easy and routine process, it can be annoying to lose your way. In order to identify the negativity in locating, it is necessary to evaluate the concept of way-finding in terms of designing. Because as the user moves, observes the space, perceives the elements in the field and establishes relations with the field. Therefore, it becomes clear how important the concept of finding a way is. In the route finding process, users capture visual clues in the space and use sign symbols. Designing a way to find spaces plays an important role.

One question related to variable sense of way-finding was asked to public spaces’ users in this context. Related statement is “whether the sense of way finding is high in the region and the risk of disappearance is very low” (Figure 6.63). According to user’s response in questionnaire, participants claimed that all zones similarly have high sense of way finding and low risk of lost in spaces. In fact, Zone 3 has quite more sense of way finding than other two study zones.

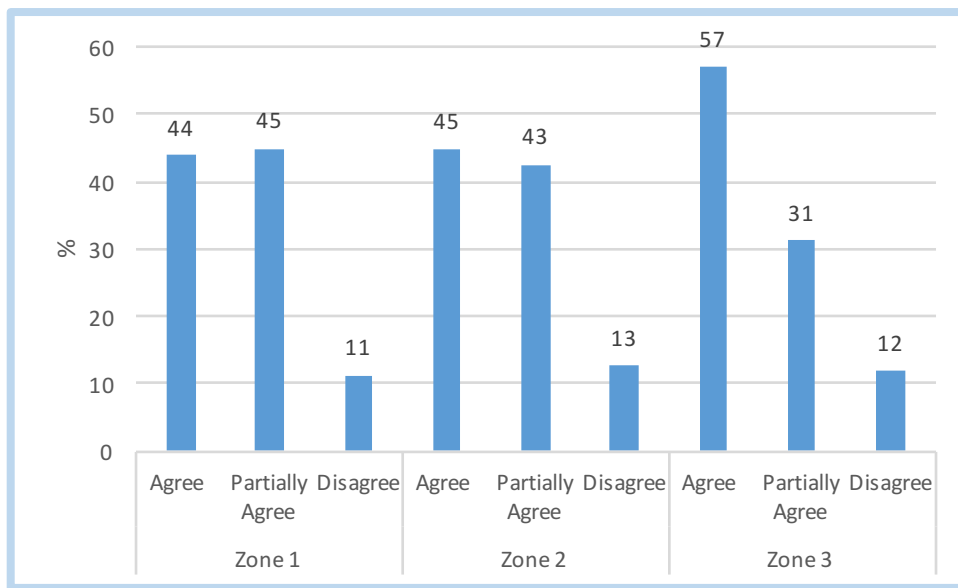


Figure 6.63. The result of “whether the sense of way finding is high in the region and the risk of lost in space is very low” according to sub-zones

6.6.4. The Outcome Evaluation of Imageability in Sample Zones

Quantitative Evaluations

In this stage, user’ perception in this study reassess by the help of visual analysis with taking photographs, direct observations in three zones, preparing spatial analysis maps for variables and desk-based assessments as a consequence of examination based on variables of indicators which were mentioned above. Then, different zones of Atakum Coastal Promenade, which are Zone 1, Zone 2 and Zone 3- are compared each other. In order to make this evaluation, a simple grading system is used according to morphological variables and this system is shown in three different categories as 1 Level, 2 Level and 3 Level. 1 represents the stronger value, 2 represents the average value and 1 represents the weaker value.

Qualitative Evaluations

All survey results are shown in Table 6.12. All three different zones are introduced into columns and each related questions/statements of survey are grouped within each indicator and introduced along rows. There are some initiations used to define indicators in this table. These are; I1; stands for “Landmarks”, I2 stands for “Diversity of Urban Uses” and I3 stands for “Sense of Way-finding”.

Table 6.11. *The evaluation of survey results in three sample zones with respect to imageability*

	STATEMENTS	Z1	Z2	Z3
I1	Signs (monuments, statues, clock towers, etc.) are at sufficient levels in the open areas of the region.	Disagree (%54)	Disagree (%43)	Disagree (%51)
I2	Different urban uses (cafes, bars, markets, clothing stores, gyms, etc.) are located together in the region.	Partially Agree (%45)	Agree (%46)	Agree (%48)
I3	The sense of way finding is high in the region and the risk of lost in space is very low.	Partially Agree (%45)	Agree (%45)	Agree (%57)

When we look at the survey results, it is clear that all three regions are inadequate in terms of landmark. The majority of the participants stated that there is a great lack of Atakum Coastal Promenade related to urban sign elements.

It has been determined that all three regions show similar characteristics in terms of having different urban land uses and having different functional structures together. The different urban focuses and uses in each region are shown in Figure 6.64, 6.65 and 6.66.

According to the survey results, although the urban sign elements are insufficient for all three regions, the sense of disappearance is quite low. The urban texture of all three regions can offer people a strong sense of way-findings. Shopping malls and public buildings, especially in Zone 3, significantly increase this sense of direction because these large structures serve as sign elements and increase the sense of direction of public space users in this area. The presence of commercial structures in Zone 2 and the fact that Zone 1 is generally composed of residential buildings are the main reasons for this low sense of direction.

Qualitative Evaluations

According to the analysis maps in order to determine the urban land use and important focal points, there is no any landmarks that can be defined as a sign element in Zone 1, but only the Starbucks Cafe has been involved in this matter in time and has become a meeting place especially for students. This is the reason why this rate is low in surveys. However, Zone 2 has many different types of landmarks which are demonstrated in Figure 6.61. Samsun logos and sculptures at the entrance and beyond of Çobanlı Pier, half basketball court, Starbucks Cafe, Deniz and Palmiye Cafes are considered as some important urban sign elements in this region. Finally, The Zone 3 area, though not as much as Zone 2, has two important landmarks, the art center statue and the Samsun logo at the entrance to Small Pier.

In addition to landmarks, diversity of urban land uses varies for three regions. According to the results of the survey, although the richness of urban area use of the three regions is similar, Zone 2 and Zone 3 have more variety than Zone 1. Zone 2 generally consists of residential buildings, commercial uses and open green space arrangements. Zone 3 is mostly composed of many public buildings and shopping malls. There are many different uses in Zone 1, but many of them are not active. Therefore, this public space can be regarded as an area of urban collapse, which is proof that this region has less urban usage diversity than other areas.

When it comes to sense of way-finding issue, Zone 2 and Zone 3 have the feature of a public space that guides people more and reduces their risk of disappearance than Zone 1 because they have more landmark and include many urban amenities. On the other hand, it is determined that people do not have much difficulty in finding direction in Zone 1 where the number of landmark is expected to be low due to insufficient number of landmarks and a small portion of urban investments. The main reason for this is that this public space is not used by a lot of people.

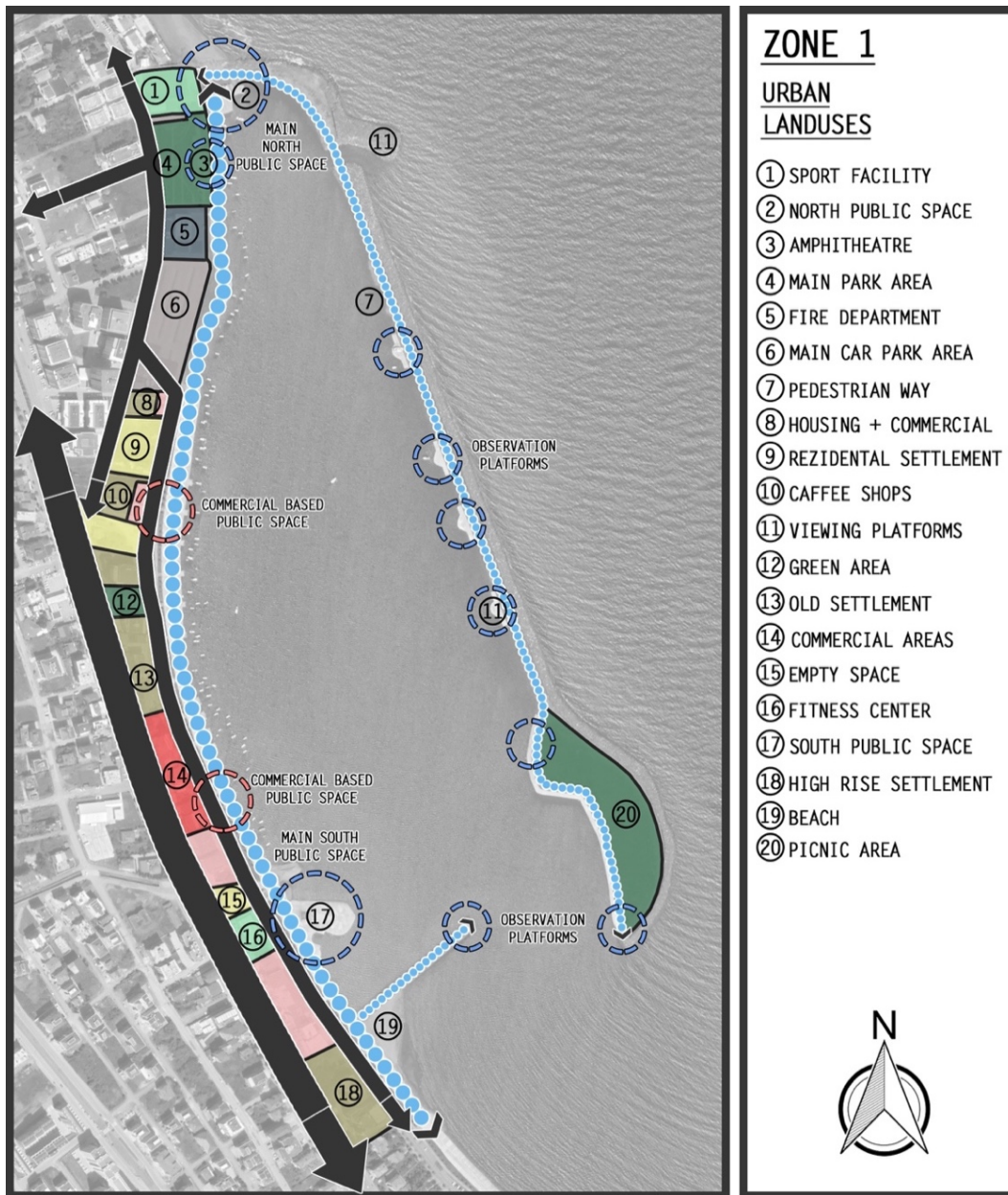


Figure 6.64. Urban focuses and uses of Zone 1 (Prepared by V. ER)

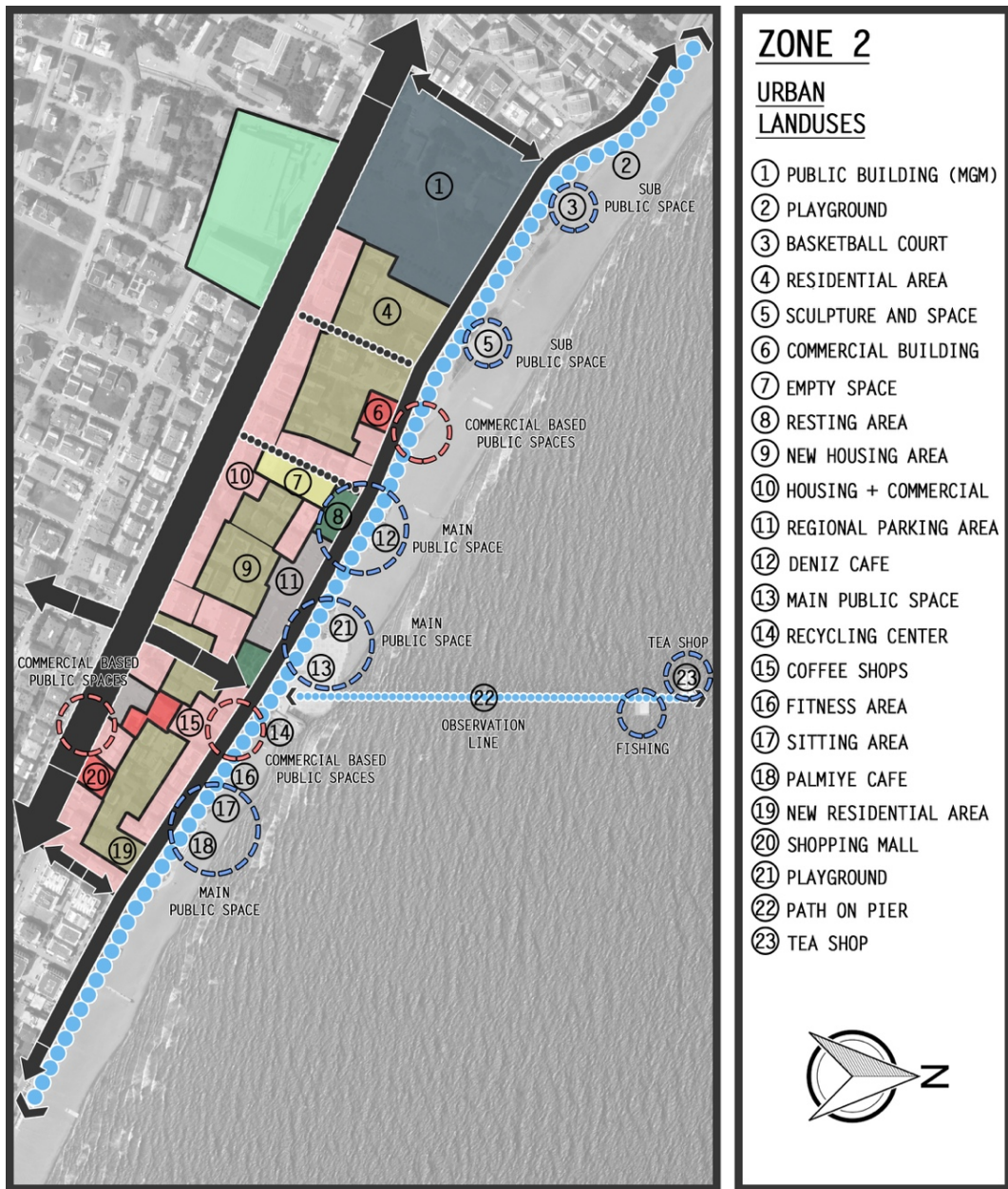


Figure 6.65. Urban focuses and uses of Zone 2 (Prepared by V. ER)

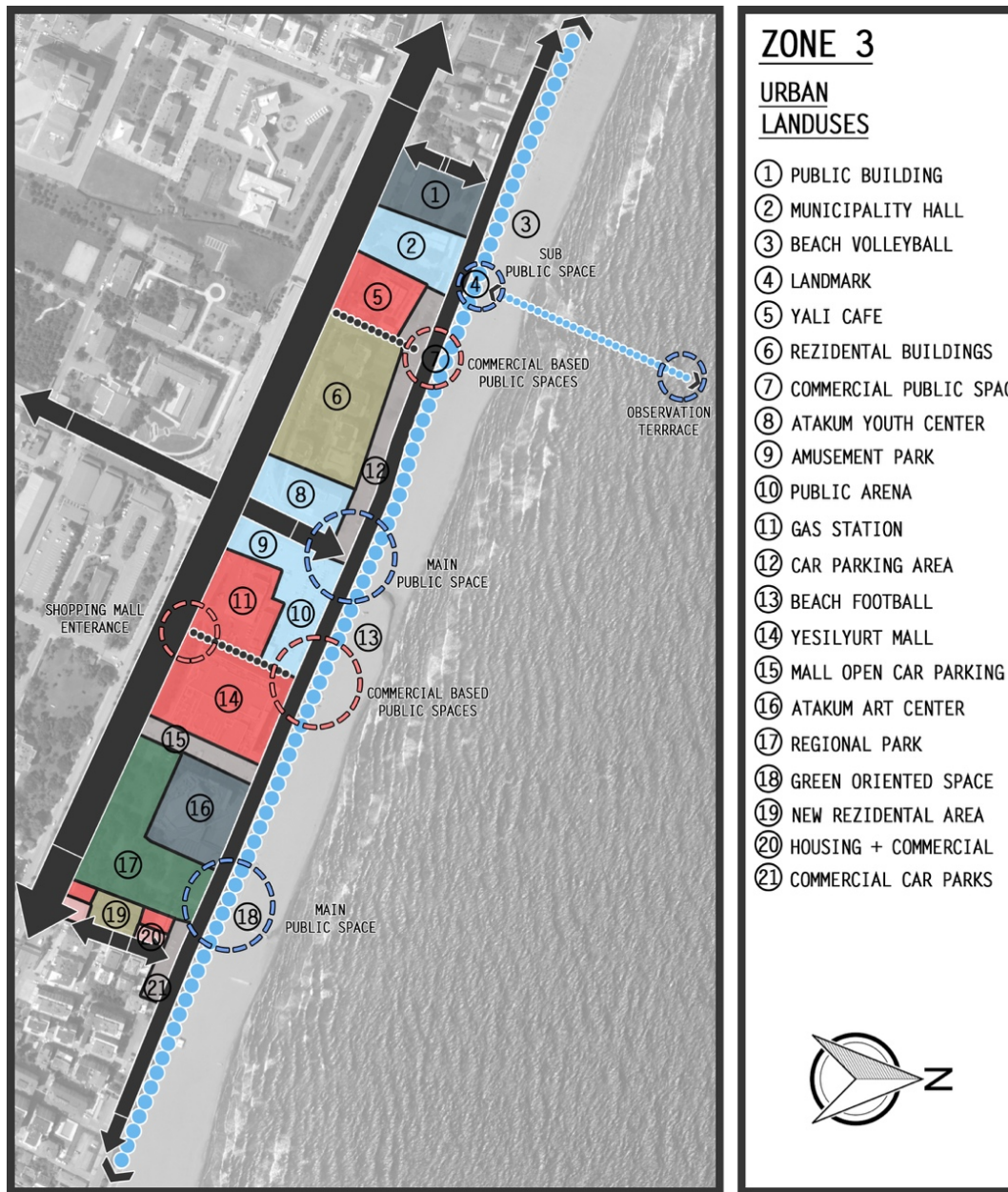


Figure 6.66. Urban focuses and uses of Zone 3 (Prepared by V. ER)

Spatial maps formed in the minds of both the user and the expert about the space for these three regions were obtained with the method of drawing a cognitive map which is very important among the qualitative research resources. For the purpose of investigating of imageability variable for the different character zones of the case study area, public space' users were asked to draw cognitive maps in terms of related

question of “As far as you can remember the Atakum Coastal Promenade, can you draw the surrounding roads, important buildings and public open spaces from the marina to the golf club?”. Cognitive maps drawn by participants are evaluated and the results is showed in Figure 6.67 which show the distribution of several landmarks by participants’ cognitive maps and some of participants’ drawings are seen in Figure 6.68.

According to outcome evaluation of cognitive maps, Yeşilyurt Shopping Mall, Atakum Art Center, Atakum Youth Center and small pier are the most common urban uses in Zone 3. Additionally, Kurupelit Marina and Starbucks Cafe are two main urban texture of Zone 1 and finally Çobanlı Pier, Sasa restaurant and Starbucks Cafe (in that region) are well-known places considered as an urban sign elements of Zone 2.

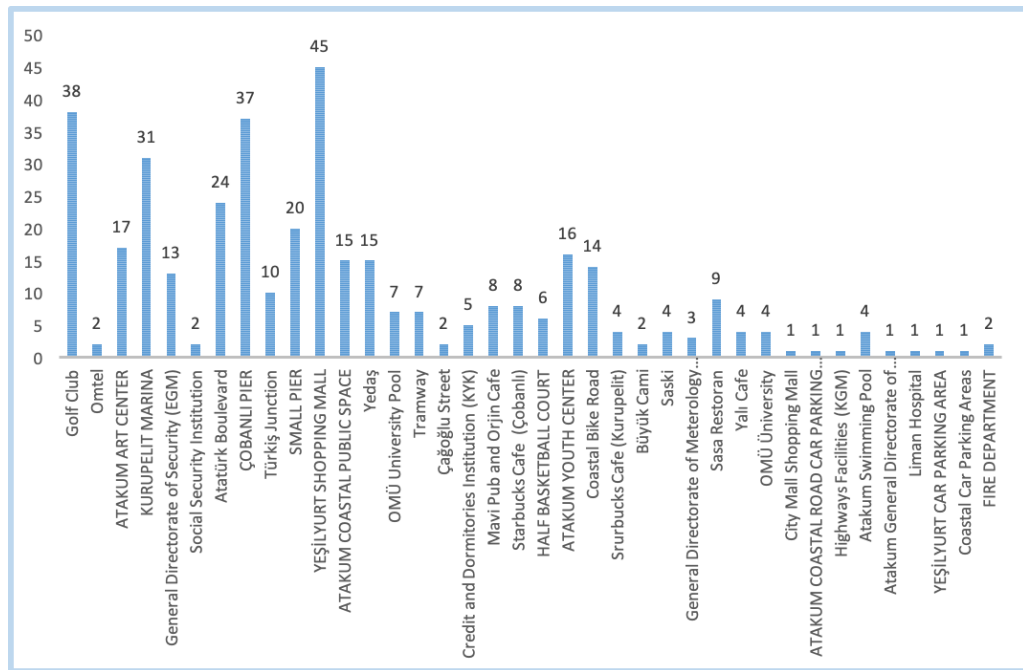


Figure 6.67. The urban areas that are showed by the participants’ cognitive maps for Atakum Coastal Promenade

Overall Evaluation

Considering landmarks, it is evaluated as a 0 value for Zone 1 and 1 value for Zone 2 and Zone 3 in order to adapt the findings to the model, and then Zone 1 is set to 0 value and both Zone 2 and Zone 3 are set to 1 value in terms of diversity of urban uses. Lastly, the value of sense of way finding variable is evaluated as 1 for all three character zones. In general, Zone 2 and Zone 3 have 3 value and Zone 1 has 1 values, which means that while Zone 2 and Zone 3 show 3 level publicness of public space in terms of imageability dimension, Zone 1 shows 2 level publicness (Table 6.12).

Table 6.12. *The outcome evaluation of three sample zones with respect to imageability*

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
IMAGEABILITY	Landmark	1 Good 0 Poor	0-3	0	1	1
	Diversity of Urban Uses	1 Strong 0 Weak		0	1	1
	Sense of way finding	1 Sufficient 0 Insufficient		1	1	1
	Overall Evaluation				1	3

According to all these extensive research results, Zone 2 and Zone 3 have more imageability morphological aspect regarding not only landmark variable but also diversity of urban uses compared to the Zone 1. Finally, all three zone have same quality in terms of sense of way finding. To sum up, Zone 2 and Zone 3 have more related to imageability dimension with respect to three significant variables with many different research and analysis methods.

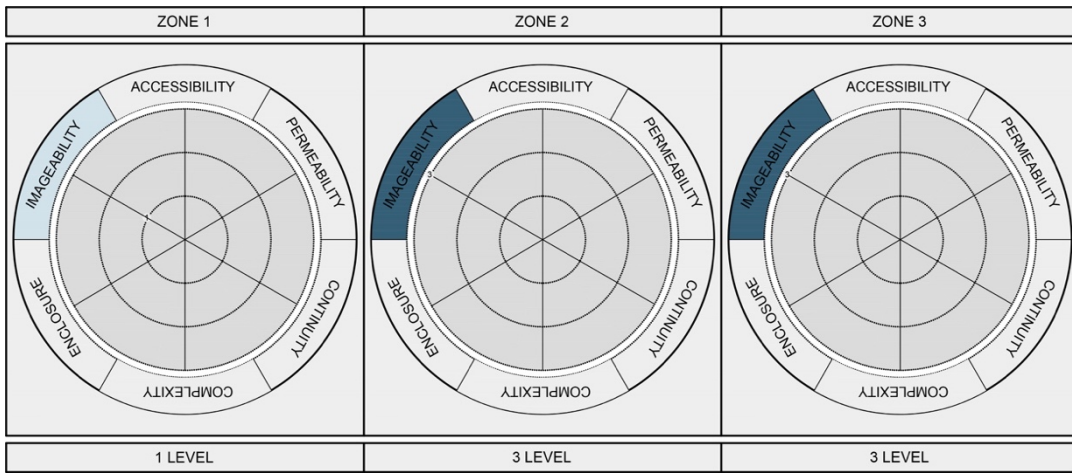


Figure 6.69. Imageability level of three character zones by polygon model (Prepared by V. ER)

CHAPTER 7

CONCLUSION

The concept of publicness is one of the most important fields of study in cities, and thus there are several factors affecting the publicness of public spaces. One of the most important one is urban morphology. Morphological dimensions have many effects and consequences on public spaces. This thesis examines the effect of six basic morphological features of public spaces. This research study investigated the publicness of public space capacity of three main zones of the Atakum Coastal Promenade with respect to Kurupelit Marina as Zone 1, Çobanlı Pier as Zone 2 and Yeşilyurt Shopping Mall as Zone 3.

Morphological dimension in order to investigate publicness of public spaces in Atakum Coastal Promenade was defined based on literature review. The research study area includes different sections and three different case study zones are identified. Extensive survey, literature review, desk-based assessment, direct observation, interview and questionnaires were used as research tools to investigate the publicness of public space of Atakum Coastal Promenade.

The research findings regarding qualitative and quantitative observations for each zones were compared to each other to demonstrate the similarities and differences between the publicness of these zones. Similarly, these findings have shown the strengths and weaknesses of three character zones of Atakum Coastal Promenade with respect to publicness in order to enhance urban design strategies to revitalize west development corridor of Samsun by referring to expert and user information. Thus, publicness of public space and its morphological indicators were examined in the context of urban design elements stating in several researches. Three character zones in the case study area were comparatively evaluated with respect to indicators to get

detailed public space character of Atakum Coastal Promenade. After that, outcome evaluations are developed for the case study area for each feature of publicness.

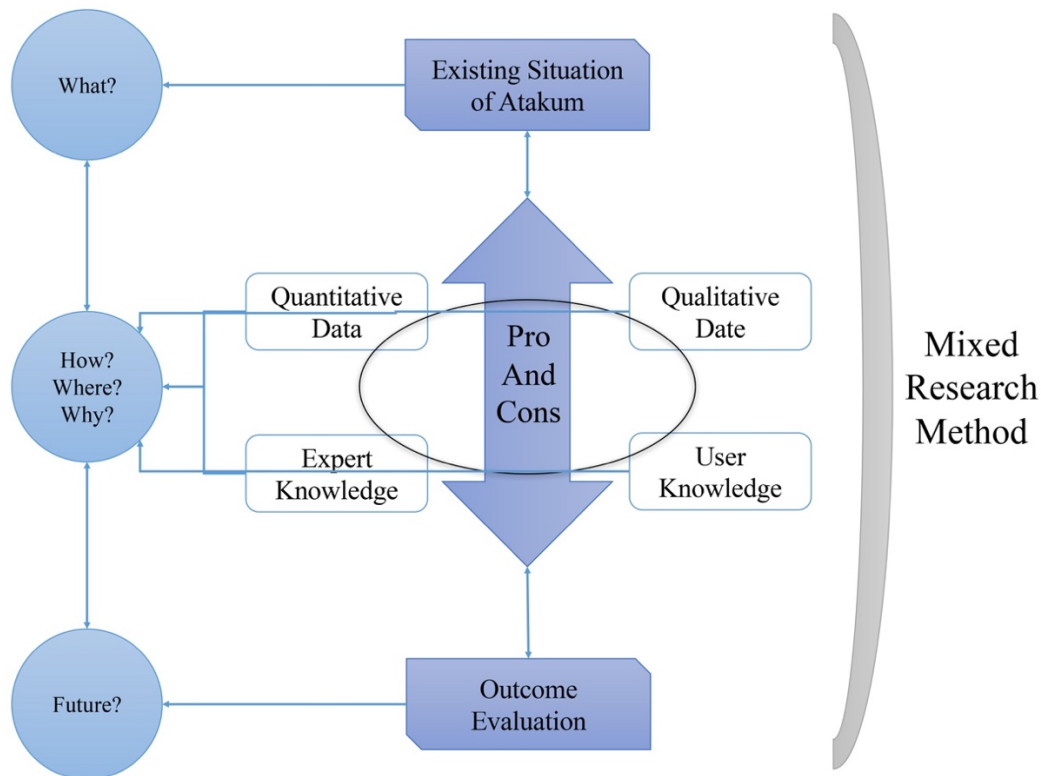


Figure 7.1. Components of mixed research method of thesis (Prepared by V. ER)

There are many indicators to determine publicness of public spaces. The morphological dimension evaluated in especially spatial context and a wide literature is available discussing the components of publicness issue. Moreover, all the morphological aspects of public space were examined in the study. Conversely, general indicators are not adequate to completely discuss the problem. There are some important research limits and difficulties mentioned end of this chapter under the name of research limitations in collecting information.

7.1. Comparative Evaluations of Study Fields

The main aim of the study is to not only find out the strengths and weaknesses but also clarify problems and potentials of the case study area from the point of its morphological aspects of publicness of public space. The major assumption of this study is that integrated public space and having strong public space network can help to create chance of public space oriented development on coastal promenade in spite of rapid linear urbanization. Therefore, there could be chance to develop urban design strategies for the urbanization scheme of Atakum District by revealing pros and cons of public space in terms of urban morphology.

The comparative evaluation of character zones of Atakum Coastal Promenade with respect to each urban morphology is showed Table 7.1, which demonstrate possible outcome values for each variable of six dimensions and overall evaluations values with different values ranging from 1 level to 3 level. With the contribution of the results obtained from these evaluations, the models we have previously defined are prepared separately for the three regions. The models of these different character zones of this public space are demonstrated in Figure 7.1. When we compare three regions, it is understood that Zone 2 is more public with having 13 total value than Zone 2 having 12 total value and Zone 3 having 9 total value. Zone 3 showed the weakest publicness of public among these regions in terms of six morphological characters.

Table 7.1. *The overall evaluation characteristics zones of the case study areas in terms of six morphological dimension and adaptation results to polygon model*

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
ACCESSIBILITY	Public Transportation (e.g. Bus, Tramway)	1 Strong 0 Weak	0-3	0	1	1
	Private Transportation (e.g. Car)	1 Strong 0 Weak		1	1	1

Table 7.1. *Continued*

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
ACCESSIBILITY	Pedestrian and Bicycle Access	1 Strong 0 Weak		1	1	1
	Overall Evaluation			2	3	3
PERMEABILITY	Street Pattern	1 Strong 0 Weak	0-3	0	1	0
	Urban Blok Pattern	1 Strong 0 Weak		0	1	0
	Visual Permeability	1 Strong 0 Weak		1	0	1
	Overall Evaluation			1	2	1
CONTINUITY	Quality of Paths	1 Good 0 Poor	0-3	1	1	0
	Facade Continuity	1 Strong 0 Weak		0	1	0
	Landscape and Urban Sign Elements	1 Sufficient 0 Insufficient		1	1	1
	Overall Evaluation			2	2	1
COMPLEXITY	Variety of Building Types	1 Varied 0 Monotone	0-3	0	0	1
	Variety of Activities	1 Varied 0 Monotone		0	1	1
	Diversity of Landscape Elements and Floor Coverings	1 Varied 0 Monotone		1	1	0
	Overall Evaluation			1	2	2

Table 7.1. *Continued*

	Sub Titles	Options and Values	Possible Outcome Value	Zone 1 Kurupelit Marina	Zone 2 Çobanlı Pier	Zone 3 Yeşilyurt Shopping Mall
ENCLOSURE	Open Green Areas and Trees	1 Strong 0 Weak	0-3	1	1	0
	Street Furniture	1 Strong 0 Weak		1	1	1
	Urban Block Orientation	1 Strong 0 Weak		0	1	1
	Overall Evaluation			2	3	2
IMAGEABILITY	Landmark	1 Enough 0 Inadequate	0-3	0	1	1
	Diversity of Urban Uses	1 Enough 0 Inadequate		0	1	1
	Sense of way finding	1 Strong 0 Weak		1	1	1
	Overall Evaluation			1	3	3
TOTAL VALUE				9	13	12

To begin with accessibility aspect, Zone 1 is less accessible than other regions. The most important reason for such a result is the fact that this public space is a new development area as the most recent result of the growth pressure in the western direction and the transportation system cannot provide service in the full sense compared to other two regions. However, Zone 2 and Zone 3 are more accessible urban spaces. Since these two public spaces are older settlements, the circulation of vehicles and public transport is taken place more effectively. They have alternative ways to allow the movement of motorized and non-motorized vehicles. Furthermore, Atatürk Boulevard, Cağaloğlu Street, Adnan Menderes Boulevard and Tramway with

İsmet İnönü Boulevard parallel to the sea constitute the most important movement channels in the city on the east-west axis. On the other hand, important transportation roads such as Toplu Konut Boulevard, Vatan Street, Ali Gaffar Okan Street, Barış Boulevard and Nişantaşı Street connect the urban settlements on the coast with the inner parts of the city. Atakum Coastal Promenade is generally good in terms of accessibility. The existence of a simple and clear street system is the main reason why all accessibility channels have been successful.

When we consider street network and urban block pattern of all three sample zones, Zone 1 and Zone 3 are less permeable urban spaces than Zone 2 because they have not only less inner streets but also high-rise building blocks. However, Zone 2 has many different inner streets, and thus offers people more movement opportunity. At the same time, the fact that this region is composed of lower storey and fragmentary structures makes this region more permeable than the other two regions. However, while it is a good public space in terms of being a more permeable space in the maintenance of street and building textures, the fact that Zone 2 has more structures than the other two regions and that there is almost no empty urban spaces is proof that this region is a weak public space in terms of visual permeability.

Besides, the use and quality of the pedestrian roads is quite good in Zone 1 and Zone 2. In fact, although it is physically good in Zone 3, it is seen that these roads are insufficient considering the density of people in the region. Therefore, pedestrian continuity is much more successful in Zone 1 and Zone 2, but unfortunately in Zone 3. The continuity of the facade is only observed in the Zone 2 region. The existence of homogeneous and continuous structures supports this situation. Nonetheless, in the other two regions, the structural forms of different uses are so different that it can be hard to talk about the continuity of facade. The contribution of urban landscape implementations and sign elements to the continuity of pedestrians in these public spaces and thus to the continuity of public spaces is similar and sufficient for three different regions.

Complexity, in other words diversity, is investigated as an another morphological aspect of public space. The diversity of structures is evident in Zone 3. Especially with the presence of mass structures, this area has a lot of diversity in this area compared to the other two regions. Zone 3 and Zone 2 are important public spaces regarding diversity of activity, although Zone 2 do not have much variety of structures. Many different urban uses have been made available to people, and with the contribution of the measurements made in the field, the richness of these areas as regards urban use is much higher than that of Zone 1. Urban furniture and green areas are generally concentrated in Zone 2 and Zone 1. In fact, these two urban interventions can give a generalized result to the whole Atakum Coast Road. However, with the increasing urban focus of Zone 3 over time, these practices have been inadequate in this area and cannot satisfy public space users. For this reason, Zone 3 is considered to be get behind the other two regions in terms of urban landscape practices and number of sign elements.

Regarding the enclosure dimension, Zone 1 and Zone 2 are more developed urban spaces with respect to the existence of green spaces and the use of trees in urban public spaces. In fact, green texture is determined much more in these two regions. These regions contain tree applications and many alternative functions of green areas. Although the three districts have similar characteristics in terms of the presence of street furniture as regards where they are located and what mission they have, the building orientations in Zone 2 and Zone 3 allow the spaces to have more enclosure.

In terms of landmark and urban use diversity as a 'imageability dimension' variables, Zone 2 and Zone 3 clearly have sufficient urban areas. As for sense of way finding, all three regions have strong spatial characteristics. Despite the lack of landmark and adequate urban use in Zone 1, it is necessary to explain how Zone 1 turns out to be a good zone for a sense of way finding. The main reason is that compared to the other two regions, this public space is not preferred much by people for visiting purposes. In fact, as it is a new development area, the survey and observation results show that this region has fewer landmarks than other two zones.

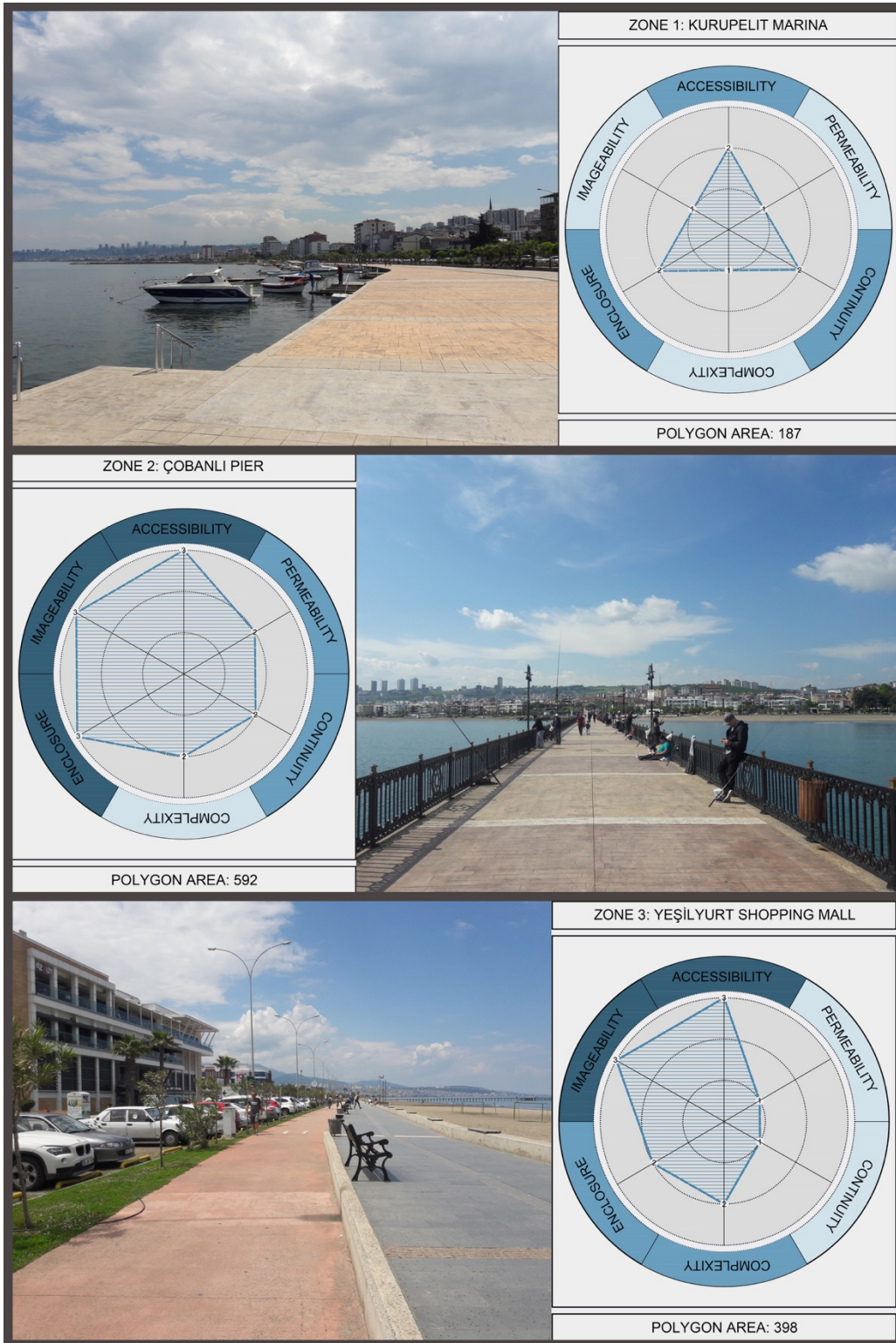


Figure 7.2. Final result of thesis study about publicness of public space in terms of six morphological dimensions in three character zones in Atakum (Prepared by V. ER)

7.2. Future Scenarios About Atakum Coastal Promenade

In spite of the different features at different points in its public space of the coastal road as it is shown in the thesis study, Atakum Coastal Promenade is one of the not only Samsun's but also Turkey's most important urban spaces. But nowadays, it is under the pressure of rapid urbanization and uncontrollable concretion with high-rise buildings. In time, it may lose its low-rise construction features, and the green and open urban space decrease with the effect of recent building constructions.

While the publicness of Atakum Coastal Promenade is sufficient today despite some problems and deficiencies, the current population growth and rapid urbanization, it may be insufficient in terms of public space in the future. This may cause this important urban area to lose its publicness in the long term or even this public space may have a chance to become lost space. Research on the current situation shows that many new structures are seen on the coastline. The fact that these buildings are much higher storey than the previous ones means that this space will be transformed into an urban area with more intensity than its potential.

Another important possibility is that if there are no other public space formations to be integrated into this main public space from inner city development, the city becomes more concrete with the construction of high rise buildings and will gradually concrete this single and only public space. This situation may cause this place to be destroyed by construction and perhaps the destruction of this urban area.

7.3. Recommendations for the Case Study Area

Urban development strategies of a coastal city consist various components as regards physical, social, economic and environmental components. Publicness is one of these constitutes which are regarded within the socio-spatial aspects of development strategies. It is not possible to increase publicness of public places by only considering one aspect of urban development. Therefore, a comprehensive and integrated approach are necessary for a sustainable urban development because this is a multi-dimensional business on city planning. This study is a matrix system consisting of the

relationship of all variables with each other because many variables, many users or many actors can play a role. To illustrate, without comprehensive urban development strategies regarding the whole coastal development, it is not possible to integrate it by improving its publicness of public space. The economic, social and ecological aspects of development are necessary to complete this complex issue. For this reason, there should be integrated sector based strategies for connecting public spaces.

Nevertheless, as this research has examined in-depth the publicness of public spaces based on morphological dimensions to integrate all urban spaces of Atakum Coastal Promenade, it may be possible to develop urban design strategies, and recommendations pertaining to the case study area by specifying research limits and assumptions, after all these detailed analyses.

Accessibility

To begin with recommendations related to accessibility, almost all side streets in Zone 1 need to be arranged. The road quality on the coastal road is sufficient, while the quality of the inner roads is not good. The inner streets in Zone 2 should be integrated more with public transport on the Black Sea Coast Road because this area is the most used public area of the coastal road by the people. Thus, the continuity of the movement of pedestrian roads is ensured although there are many people in public places, especially in the evening. On the other hand, Zone 3 is not a problem as regards side streets since there are not many side streets.

Moreover, these three study areas are similar in terms of public transport accessibility. This result proves that Atakum Coastal Promenade shows similar characteristics in every region in terms of accessibility dimension since public transport routes have only been proposed along the Atatürk Bulvarı and tramway together with İsmet İnönü Bulvarı. For this reason, there is no public transport axis between the interior and the coast. Therefore, some important routes should be identified and the idea of accessing the coastal road from the inner parts only by pedestrian route should be eliminated.

Additionally, car access is mainly provided by a one-way vehicle road on the coastal area, which is called Adnan Menderes Boulevard. Parallel to this road, the Black Sea Coastal Road (Atatürk Boulevard) is also a significant contribution. In addition, some important streets providing access to the inner parts by the contribution of Recep Tayip Erdoğan Boulevard, Vatan Street and that coastal road. The crucial issue here is that there is only vehicle-based access on coastal area. Some crucial pedestrian axes connecting the city to the sea should be designed so that the pedestrianizing issue could not just exist in coastal development. This also applies to cycling routes. While the use of the bicycle path in Atakum district is considered sufficient within the coastal road, it is almost never seen outside the coastal promenade area, which means that the integrity and continuity of bicycle paths is out of the question. Hence, some convenient and important routes linked with Atakum Coastal Promenade should be identified and integrated into the bicycle network on the coastal road.

Permeability

Regarding street pattern, Zone 2 provides more permeability than the other two zones. The presence of many streets causes different pedestrian mobility in this region. Zone 1 and Zone 3 allow pedestrian mobility on certain streets. For example, Zone usually provides access via Mehmet Çakır Street and Zone 3 provides access via Nişantaşı Street, between Yeşilyurt Shopping Mall and Youth Center. Therefore, the integration of alternative streets into the main circulation should be ensured in order to allow different access routes.

In terms of building block, we can say that Zone 2 creates a more defined boundary than Zone 1 and Zone 3. The full vacancy rate in these two regions is higher and more undefined. Therefore, there is no continuity of the facade. However, although there is no strong front continuity in all three regions, they have significant potential for permeability. The presence of some empty spaces has been found to provide visual permeability with the coastline. This is an important result, but these empty spaces are not the result of conscious behaviour. Over time, building blocks might be replaced

and visual permeability might be eliminated. That's why, this should not be neglected and some related precautions should be taken on this issue in order to protect and advance permeability of public space.

Continuity

Furthermore, pedestrian movements are the same in all three regions. Atakum Coastal Promenade contains important design principles in respect of pedestrian movement and continuity. However, unfortunately, the results show a different situation if it is evaluated at district scale. There are no alternative routes to support pedestrian movement vertically. It is provided only between sidewalks and narrow streets. In this respect, pedestrian continuity should be ensured with the internal sections in all three regions and the quality of the pedestrian path should be increased in all areas.

When it comes to facade continuity, continuity in Zone 1 and Zone 2 are more dominant than Zone 3, but it is not enough in all three regions. It is an important issue that ensures pedestrian continuity. Therefore, it is important not only to design the building blocks or to discuss the height of the storey, but also to ensure a harmony between the facades of the buildings in almost all regions of Atakum Coastal Promenade.

Moreover, urban sign elements are mostly found in almost all three study regions, but their number and design quality are unfortunately not enough. Yeşilyurt Shopping Mall and Çobanlı Pier should have more sign elements. On the other hand, there is not even one of them as a sign element in Zone 1. As the survey results, the risk of disappearance in this region is quite high in that zones.

It is important to identify the regions and the main transport lines that provide access to them. Atakum has a homogeneous structure in general. For this reason, it was determined that the three regions showed similar characteristics. Unfortunately, the contribution of tram stops to the region is not clearly seen. Even the bus to the coast has almost no effects. Spatial differentiation of regions is very difficult to perceive as a center, and perhaps has no direct impact on public areas on the coast. Some high-

scale decisions should be revised and related to the coastline in the future for this purpose. Direct spatial relations between public transport stops and the coastal road should be established.

Complexity

The combination of different structures and the diversity of floor coverings are factors that increase publicness of Atakum Coastal Promenade. Zone 2 and Zone 3 have more diversity than the other region. In other words, Çobanlı Pier and Yeşilyurt Shipping Mall have more different urban uses than Kurupelit Marina in terms of basketball court, children's playgrounds, different commercial uses, sports fields, seating units and squares. On the other hand, Zone 1 is only dominated by Starbucks Cafe. Therefore, different urban usage decisions should be made in that region and this space includes different urban uses so that it can offer many alternative purposes to public space users in order to attract more.

Enclosure

The issue of the implementations of green spaces and trees is also an important indicator of publicness of public space. The diversity of green areas and the use of trees in Zone 2 are much better than the other two areas. It has a natural appearance and significantly increases pedestrian mobility. However, Zone 1 and Zone 3 have the appearance of artificial green areas and they do not support pedestrian movement very much. In order to have a more active use of these areas, integration of pedestrian roads in the regions should be ensured.

While the use of street furniture is sufficient for the coastal road in general, the constructions in Zone 1 should be controlled. These independently developed and uncontrolled structures endanger the principle of enclosure in this region. The strong pedestrian enclosure of this public space depends on the future urban fabric of these structures.

Imageability

Although Zone 2 and Zone 3 rarely have landmarks, there is no urban intervention as a sign element in Zone 1. Important urban applications should be made on this subject. It may not be a very crowded public space for the time being, but it will be a public space that affects more people in the coming years and causes many of them to roam, travel and be found in this area. For this reason, taking measures already in this regard can make a significant contribution to make Zone 1 a much better public space in the future as regards having not only many landmarks but also strong sense of way-finding. If we make a general assessment on this issue related to Atakum Coastal Promenade, the urban quality of the current landmark applications should be improved. With different landmark applications, people can be more successful with respect to feeling safe and having strong sense of belonging to the public space.

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APPENDICES

A. Questionnaire Form

Table A1. Survey questions to determine participant's profiles and basic data about Atakum

Volkan ER Orta Doğu Teknik Üniversitesi Mimarlık Fakültesi Şehir ve Bölge Planlama Bölümü		Prof. Dr. Müge AKKAR ERCAN Tez Yöneticisi Orta Doğu Teknik Üniversitesi Mimarlık Fakültesi Şehir ve Bölge Planlama Bölümü	
Anketin Tarihi:/...../2019		Anket No:	
Bölge 1 Kurupelit Yat Limanı ve Çevresindeki Kentsel Kullanımlar	Bölge 2 Atakum Sahil Yolu Meydanı ve Çobanlı İskelesi	Bölge 3 Yeşilyurt AVM ve Çevresi (AVM, Gençlik Merkezi, Sanat Merkezi ve Küçük İskele)	
A. GENEL BİLGİLER			
1. Cinsiyet	Erkek: <input type="checkbox"/>	Kadın: <input type="checkbox"/>	
2. Yaş	16-25 <input type="checkbox"/>	25-45 <input type="checkbox"/>	45-65 <input type="checkbox"/> 65-Üstü <input type="checkbox"/>
3. Eğitim Durumu			
İlkokul <input type="checkbox"/>	Ortaokul <input type="checkbox"/>	Lise <input type="checkbox"/>	Üniversite <input type="checkbox"/> Lisansüstü <input type="checkbox"/>
4. Nerede ikamet ediyorsunuz? (Semt, Mahalle, İlçe ve İl)			
B. ATAKUM SAHİL YOLUNUN KULLANIM ALIŞKANLIKLARI			
6. Atakum Sahil Yolunu ne zamandır kullanıyorsunuz?			
İlk kez <input type="checkbox"/>	0-6 ay <input type="checkbox"/>	1-3 yıl <input type="checkbox"/>	3-7 yıl <input type="checkbox"/> 7-10 yıl <input type="checkbox"/> 10-20 yıl <input type="checkbox"/>

Table A1. *Continued*

7. Atakum Sahil Yolunu ne sıklıkla kullanıyorsunuz?		
Her Gün <input type="checkbox"/>	Hafta İçi Her Gün <input type="checkbox"/>	Her Hafta Sonu <input type="checkbox"/>
Haftada 1-2 Kez <input type="checkbox"/>	Haftada 3-4 Kez <input type="checkbox"/>	Ayda 1 Kere <input type="checkbox"/>
8. Genellikle Atakum Sahil Yolunu hangi amaç ile kullanıyorsunuz?		
Gezme-Dolaşma <input type="checkbox"/>	Arkadaşlar İle Buluşma, Kafe vb. Yerlere Gitme <input type="checkbox"/>	
Günlük Mutfak Alışverişi <input type="checkbox"/>	Yeme-İçme <input type="checkbox"/>	Eve veya Başka Bir Yere Gitmek İçin <input type="checkbox"/>
9. Sahile erişim için genelde hangi ulaşım türünü tercih edersiniz?		
Yürüyerek <input type="checkbox"/>	Bisiklet <input type="checkbox"/>	Otobüs, Dolmuş <input type="checkbox"/> Tramvay <input type="checkbox"/> Taksi <input type="checkbox"/> Özel Araç <input type="checkbox"/>
10. Özel araç ile geliyorsanız, aracınızı nerelere park ediyorsunuz?		
11. 1 ile 5 arasında bir değerlendirme yapmak gerekirse sahile gelirken ne kadar zorlandınız?		
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
12. Neden sahile gelirken zorlandınız?		
Toplu Taşıma Yetersizliği (Otobüs, Dolmuş vb.) <input type="checkbox"/>		Trafik Yoğunluğu <input type="checkbox"/>
Yürümeyi Zorlaştıran Yoğun Araç, Trafığı <input type="checkbox"/>		Diğer <input type="checkbox"/>
13. Atakum Sahil Yolunu bulunduğunuz diğer sahil yollarından farklı kılan unsurları nelerdir?		
Büyüklüğü (Uzunluğu) <input type="checkbox"/>		Etkinlik Sayısı <input type="checkbox"/> Kentsel Mobilyalar <input type="checkbox"/>
Sahil Yolu Düzenlemesi <input type="checkbox"/>		İşaret Ögeleri (Heykel, Anıt) <input type="checkbox"/> Peyzaj Tasarımı <input type="checkbox"/> Diğer <input type="checkbox"/>
14. Atakum Sahil Yolunun hangi bölümü daha kolay erişebiliyorsunuz?		
Bölge 1: Kurupelit Yat Limanı ve Çevresindeki Kentsel Kullanımlar <input type="checkbox"/>	Bölge 2: Atakum Sahil Yolu Meydanı ve Çobanlı İskelesi <input type="checkbox"/>	Bölge 3: Yeşilyurt AVM ve Çevresi (AVM, Gençlik Merkezi, Sanat Merkezi ve Küçük İskele) <input type="checkbox"/>

Table A1. *Continued*

15. Atakum Sahil Yolunun hangi bölümünde daha zor yürüyorsunuz?		
Bölge 1: Kurupelit Yat Limanı ve Çevresindeki Kentsel Kullanımlar <input type="checkbox"/>	Bölge 2: Atakum Sahil Yolu Meydanı ve Çobanlı İskelesi <input type="checkbox"/>	Bölge 3: Yeşilyurt AVM ve Çevresi (AVM, Gençlik Merkezi, Sanat Merkezi ve Küçük İskele) <input type="checkbox"/>
16. Atakum Sahil Yolunun en çok hangi bölümünü kullanıyorsunuz?		
Bölge 1: Kurupelit Yat Limanı ve Çevresindeki Kentsel Kullanımlar <input type="checkbox"/>	Bölge 2: Atakum Sahil Yolu Meydanı ve Çobanlı İskelesi <input type="checkbox"/>	Bölge 3: Yeşilyurt AVM ve Çevresi (AVM, Gençlik Merkezi, Sanat Merkezi ve Küçük İskele) <input type="checkbox"/>
17. Atakum Sahil Yolu denilince aklınıza il hangi bölge geliyor?		
Bölge 1: Kurupelit Yat Limanı ve Çevresindeki Kentsel Kullanımlar <input type="checkbox"/>	Bölge 2: Atakum Sahil Yolu Meydanı ve Çobanlı İskelesi <input type="checkbox"/>	Bölge 3: Yeşilyurt AVM ve Çevresi (AVM, Gençlik Merkezi, Sanat Merkezi ve Küçük İskele) <input type="checkbox"/>
18. Bu bölgeler dışında yeni bir kamusal odak noktası olarak tanımlayabileceğiniz başka bir yer var mı?		

Table A2. Survey questions to investigate the morphological characteristics of public spaces prepared for Atakum Coastal Promenade

	Bölge 1			Bölge 2			Bölge 3		
	Kurupelit Yat Limanı ve Çevresindeki Kentsel Kullanımlar			Atakum Sahil Yolu Meydanı ve Büyük İskele			Yeşilyurt AVM ve Çevresi (AVM, Gençlik Merkezi, Sanat Merkezi ve Küçük İskele)		
C. ERİŞİLEBİLİRLİK DEĞERLENDİRME	<i>Katılıyorum</i>	<i>Kısmen Katılıyorum</i>	<i>Katılmıyorum</i>	<i>Katılıyorum</i>	<i>Kısmen Katılıyorum</i>	<i>Katılmıyorum</i>	<i>Katılıyorum</i>	<i>Kısmen Katılıyorum</i>	<i>Katılmıyorum</i>
19. Taşıt yolları ile bölgeye erişim kolay bir şekilde sağlanmaktadır.									
20. Toplu taşıma durakları bölgeye entegre edilmiştir.									
21. Bölgeye özel araç ile erişimi kolaylıkla sağlanmaktadır.									
22. Bölgedeki araç otopark sayısı yeterlidir.									
23. Bölgedeki yaya erişimi yüksektir.									
24. Yaya ve üst geçiş sayısı bölge için yeterlidir.									
25. Ara sokaklar bölgeye erişimi kuvvetlendirmektedir.									

Table A.2. *Continued*

26. Çıkılmaz sokaklar bölgenin erişimini zorlaştırmaktadır.									
27. Bölgedeki araç yoğunluğu yaya erişimine engel olmamaktadır.									
28. Bölgeye bisiklet ile erişim oldukça yaygındır.									
29. Bisiklet yolları ve park alanları yeteri miktarda bulunmaktadır.									
D. SÜREKLİLİK DEĞERLENDİRME	<i>Katılıyorum</i>	<i>Kısmen Katılıyorum</i>	<i>Katılmıyorum</i>	<i>Katılıyorum</i>	<i>Kısmen Katılıyorum</i>	<i>Katılmıyorum</i>	<i>Katılıyorum</i>	<i>Kısmen Katılıyorum</i>	<i>Katılmıyorum</i>
30. Yaya yolları kalitesi yüksektir.									
31. Yapıların cephelerinin bütünselliği bölgedeki yaya hareketini kolaylaştırmaktadır.									
32. Peyzaj elemanları (yeşil alan düzenlemeleri ve ağaç kullanımları) yaya sürekliliğini desteklemektedir.									

Table A.2. *Continued*

33. Kentsel işaret öğeleri (heykel, anıt, tarihi çeşme vb.) yayaları bölgedeki kamusal alanlara yönlendirmektedir.									
E. ÇEŞİTLİLİK DEĞERLENDİRME	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>
34. Çevredeki yapılar estetik açıdan bölgeye çeşitlilik katmaktadır.									
35. Mimari açıdan birbirinden farklı yapılar bulunmaktadır.									
36. Farklı kentsel kullanımlar (kafe, bar, market, büfe vb.) ile bölgedeki etkinlik sayısı yeterlidir.									
37. Kentsel peyzaj elemanlarının zenginliği bölgedeki çeşitliliği desteklemektedir.									
38. Farklı zemin kaplamaları ile birlikte açık alanların çeşitliliği sağlanmıştır.									

Table A.2. *Continued*

F. ÇEVRELEME DEĞERLENDİRME	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>
39. Bölgedeki yeşil alanların ve ağaçların kullanımı kamusal mekanı tanımlamaktadır.									
40. Sokak mobilyaları yaya ve taşıt hareketini kolaylaştırmaktadır.									
41. Sahile bakan yapıların ön çekme mesafeleri sahil yolunu yeterince tanımlamaktadır.									
42. Sahildeki yapıların yönelimleri ve oturumları sahil yolunu çevrelemektedir.									
G. İMGELEME DEĞERLENDİRME	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>	<i>Katılıyor</i>	<i>Kısmen Katılıyor</i>	<i>Katılmıyor</i>
43. Bölgedeki açık alanlarda işaret öğeleri (anıt, heykel, saat kulesi vb.) yeteri düzeyde bulunmaktadır.									

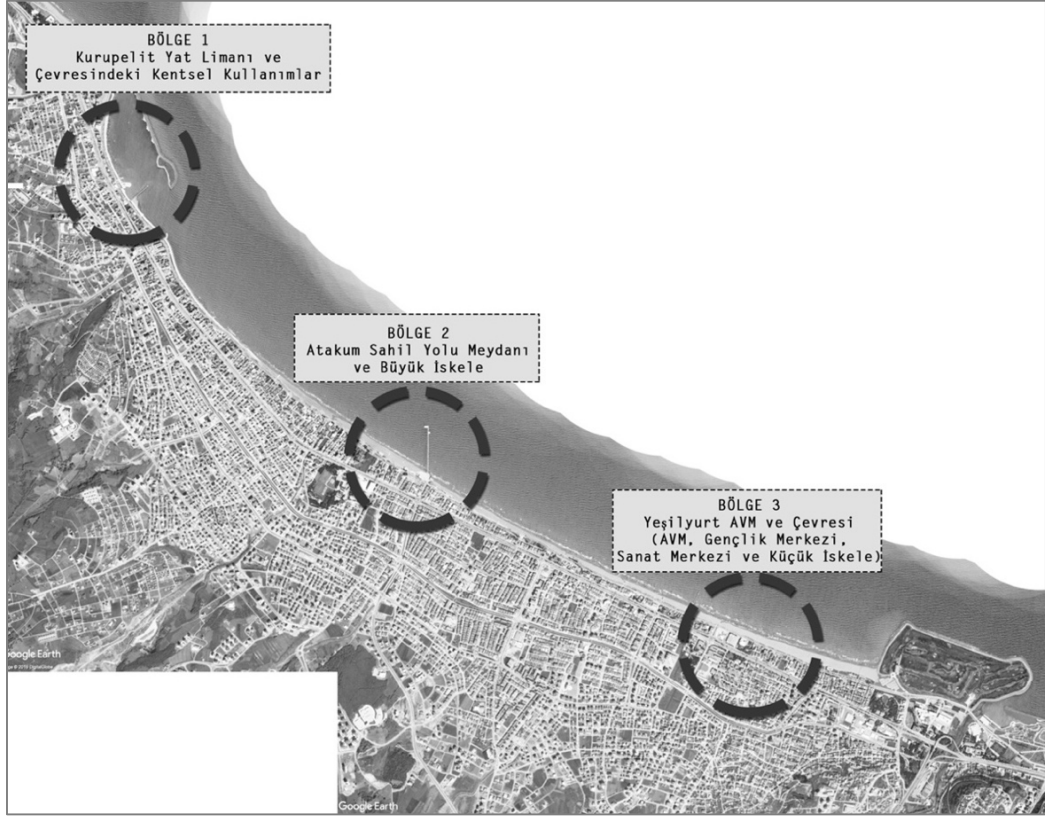


Figure A1. Three research areas where surveys are conducted

B. Cognitive Maps

46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?

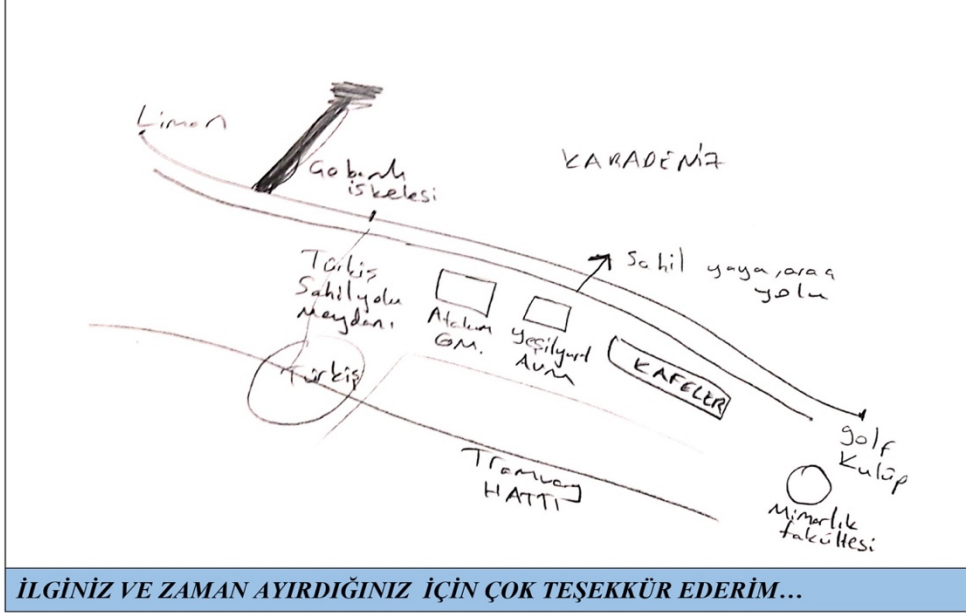


Figure B1. Cognitive map about Çobanlı Pier and Yeşilyurt Shopping Mall

46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?

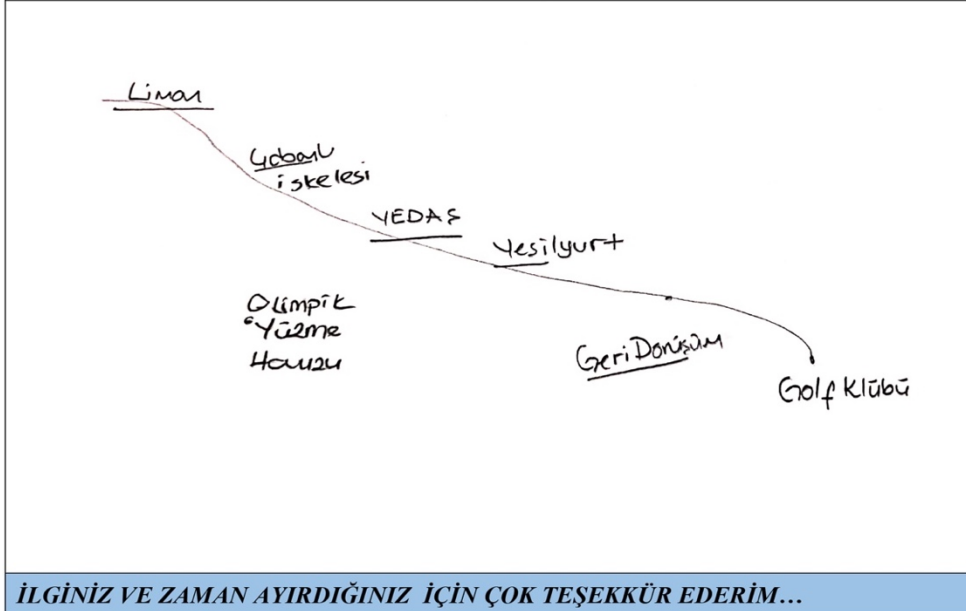


Figure B2. Cognitive map about Kurupelit Marina, Çobanlı Pier and Yeşilyurt Shopping Mall

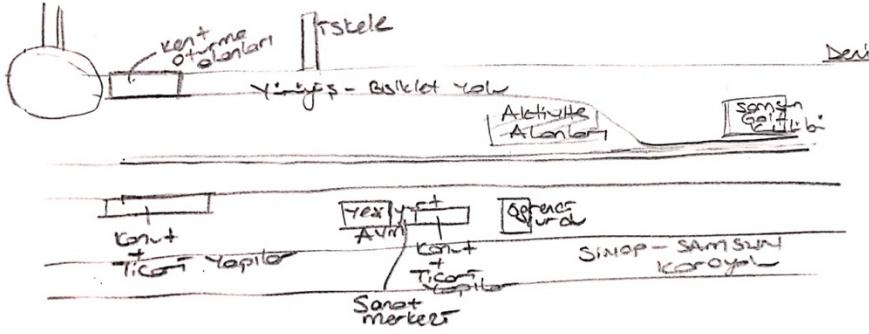
46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?



İLGİNİZ VE ZAMAN AYIRDIĞINIZ İÇİN ÇOK TEŞEKKÜR EDERİM...

Figure B3. Cognitive map about the parallel layered development of the coastal road

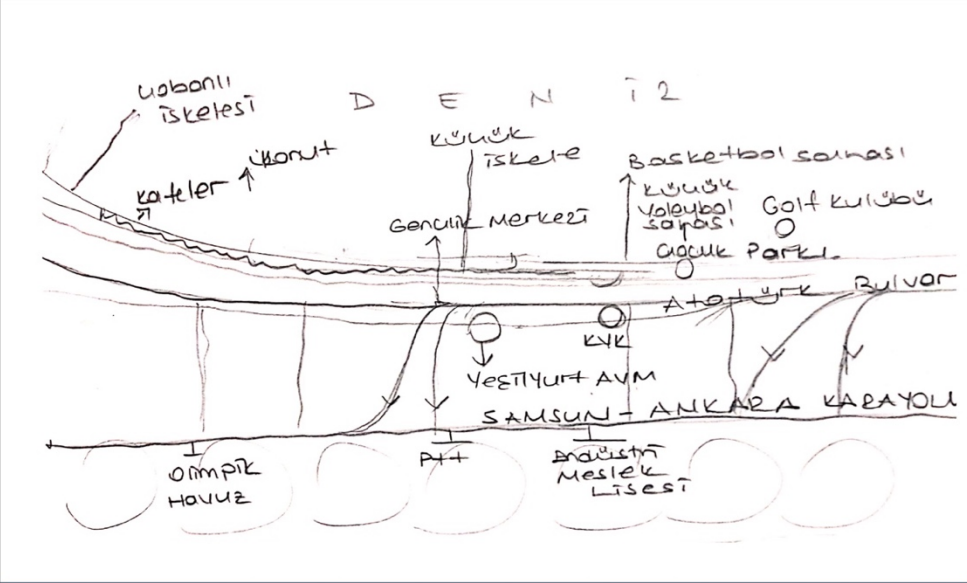
46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?



İLGİNİZ VE ZAMAN AYIRDIĞINIZ İÇİN ÇOK TEŞEKKÜR EDERİM...

Figure B4. Cognitive map about Çobanlı Pier and Black Sea Coastal Road

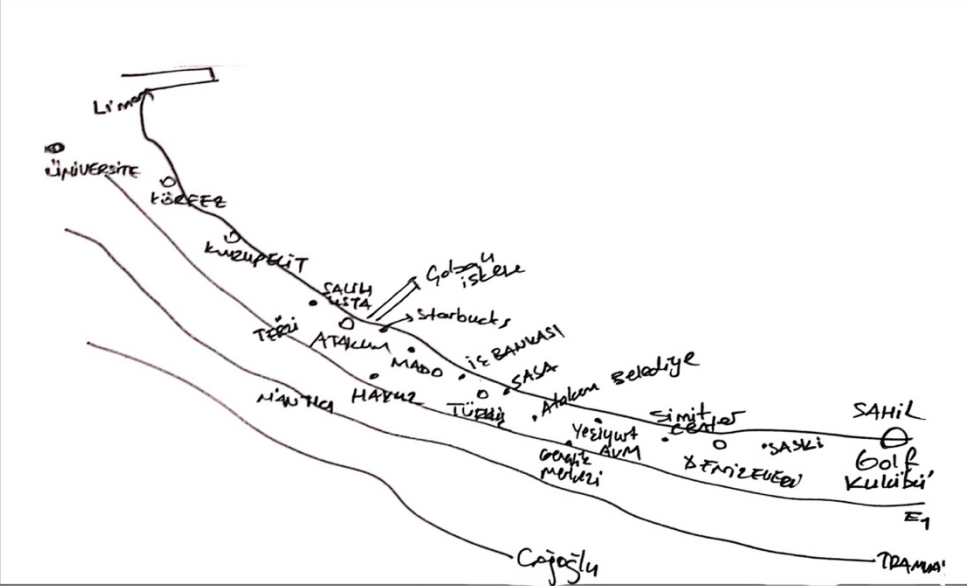
46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?



İLGİNİZ VE ZAMAN AYIRDIĞINIZ İÇİN ÇOK TEŞEKKÜR EDERİM...

Figure B5. Cognitive map about the relationship between important urban uses in Atakum Coastal Promenade and Atatürk Boulevard

46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?



İLGİNİZ VE ZAMAN AYIRDIĞINIZ İÇİN ÇOK TEŞEKKÜR EDERİM...

Figure B6. Cognitive map about Relationship between Atakum Sahil Yolu, Cağaloğlu Street and Atatürk Boulevard

46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?

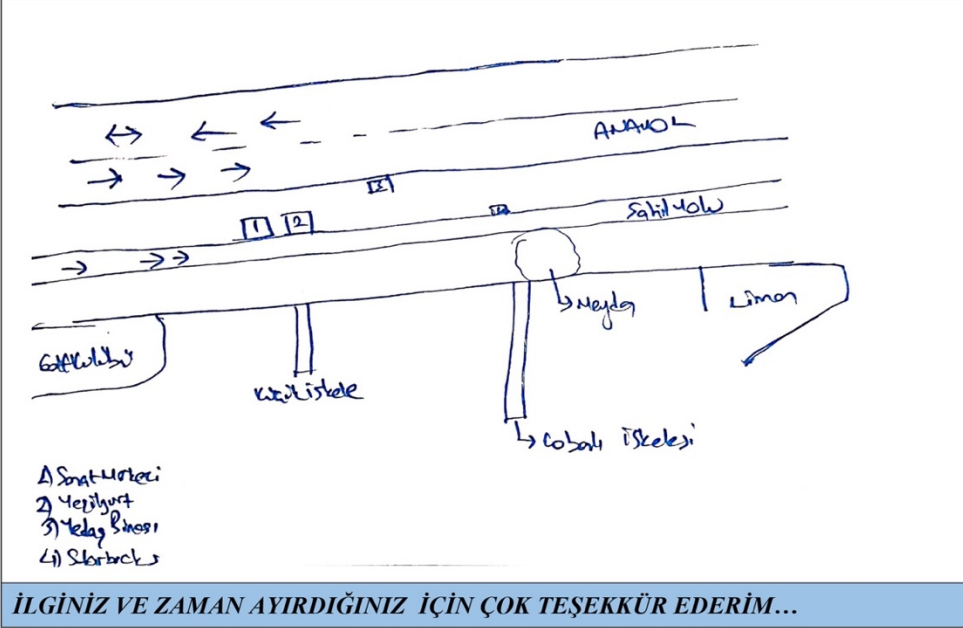


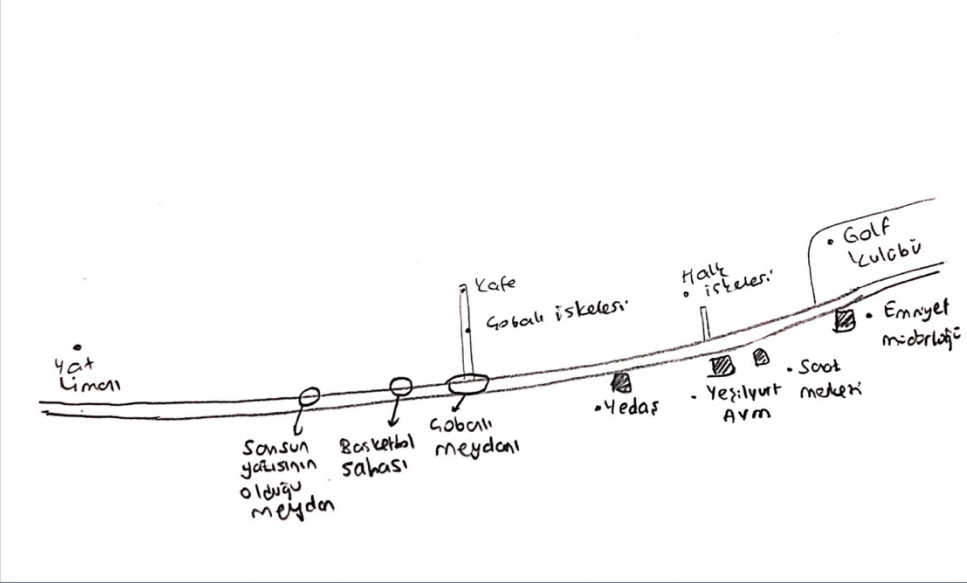
Figure B7. Cognitive map about relationship between coastal urban uses, coastal promenade and main highway

46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?



Figure B8. Cognitive map about relationship between coastal urban uses with the pedestrian and vehicle roads

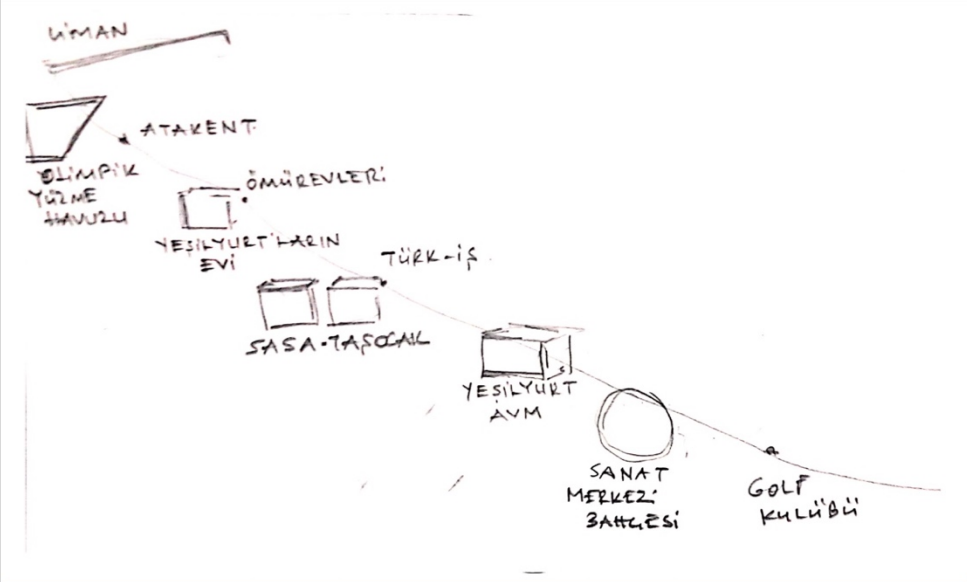
46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?



İLGİNİZ VE ZAMAN AYIRDIĞINIZ İÇİN ÇOK TEŞEKKÜR EDERİM...

Figure B9. Cognitive map about Kurupelit Marina, Çobanlı Pier and Yeşilyurt Shopping Mall

46. Atakum Sahil Yolunu hatırlayabildiğiniz kadarıyla limandan golf kulübüne kadar çevredeki yollar, önemli binalar ve kamusal açık alanları gösterecek şekilde çizebilir misiniz?



İLGİNİZ VE ZAMAN AYIRDIĞINIZ İÇİN ÇOK TEŞEKKÜR EDERİM...

Figure B10. Cognitive map about Kurupelit Marina and Yeşilyurt Shopping Mall