Public Transformation of the Bosporus. Facts and Opportunities

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Public spaces are places in which relations beyond the private sphere are established, creating a sense of community. They are among the most important elements of a modern city and they are the places from which urban culture and consciousness emerge.

Historically, urban public spaces are places in which the people's differences and diversities are exposed. As opposed to urban communities and neighborhoods that show categorical, cultural, and ethnical distinctions, urban public areas are spaces in which people from different social and cultural groups are able to meet and interact with each other. Public spaces play a particular role in the formation process of cities (Erdönmez 2005).

In this respect, the research we have conducted aims to make a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of six Bosporus neighborhoods and residential areas which include Ortaköy, Bebek, Rumelihisarı on the European continent, and Beylerbeyi, Kanlıca, and Kandilli on the Asian side. Our research began with a short historical examination of these areas and a land-use analysis of the neighborhoods, investigating their potential for future public use. Land-use analysis data was then used to determine public potential index values which will be explained under the chapter »case study« below. An additional survey, about social expectations of public spaces and their new uses was also conducted. This qualitative data material of the survey was then compared to the public potential index.

Brief history of the area

As the city that connects two continents, Istanbul owes its unique identity to a 30 km long and narrow strip of sea called the »Bosporus«. The urban character along the Bosporus is defined by steep slopes of dense vegetation, interspersed by imperial buildings, commercial docklands and *yalı*.[1] The shoreline was inaccessible to the public, except for boat stations and now-extinct public beaches and sea baths, before the coastal roads of the Bosporus were constructed between 1956-1960. Located in the neighborhoods along the river, defined by their inclining green landscape rising from both shores of the river, are the *yalı* grounds stretching along the coastlines, dwelling areas on the natural terraces behind and above the coasts, and village settlements on the bays, and valleys opened by streams. As the city expanded, new roads were constructed to accommodate the growing population. Making the area accessible, these roads were also an opportunity to transform the shores into a public space, although there were complains that this new establishment had damaged the historical characteristics of the Bosporus and interferes into the relationship of a *yalı* with the sea.

When we examine Istanbul's historical development, we can identify three distinct nuclei which have guided Istanbul's growth over the centuries. These three centers emerged along the waterways that served as trading routes between Asia and Mediterranean hinterland, the Bosporus and the Golden Horn, a natural harbor in which goods traveling between the Balkan and Anatolia passed. The Golden Horn divides so-called »Historical Peninsula« at the southern and, »Galata« located the northern part of the Golden Horn. Since the 5th century, »Galata« functioned as the non-Muslim political and cultural center.

In the Byzantine era, the Bosporus had no organic ties with the city center, the development of which was confined to its city walls, away from the river. During this period people lived inside the city walls in order to guard themselves from continuous threats of attack. Nonetheless, along the shores of the Bosporus small farming and fishing villages developed in addition to monasteries with sacrificial altars and fortifications controlling the Black Sea and the Bosporus. In the 17th century, Istanbul's city borders expanded along the shores of the Bosporus. As a result, villages that had previously been isolated from Istanbul were now connected to the city by the Bosporus. The entire region along the river,

1 Yalıs are prestigious private dwellings in a typical regional wooden villa style, often used as summer residences for upper class Istanbul inhabitants.

defined by the enclosed village clusters, thus became an important summer recreational area for Istanbul's inhabitants.

In the Ottoman period, the settlements along the Bosporus settlement were home to both Muslims and non-Muslims. Roman villages were built in Anadoluhisarı and Kanlıca on the Asian side and in Ortaköy, Arnavutköy and Bebek on the European. On the Asian side, non-Muslims lived in Kuzguncuk and Çengelgöy. In Kanlıca, and also in Anadoluhisarı, Beylerbeyi and Beykoz on the Asian side, there were settlements with a Muslim majority in the 17th century. These villages were organized around fishing and farming activities. In addition, some wealthy people from Istanbul owned summer houses in these villages.

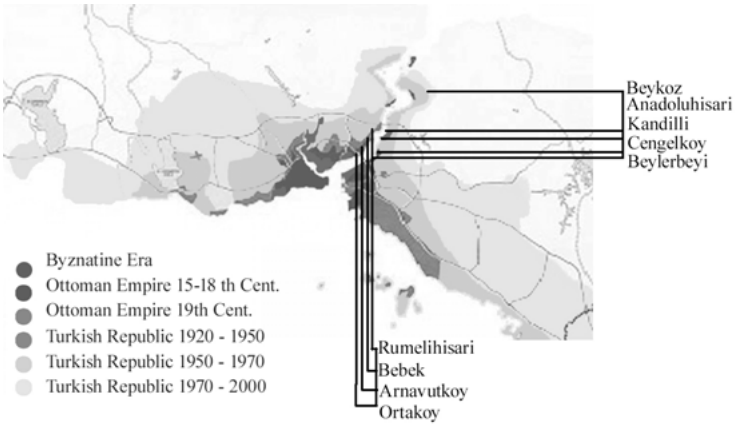

Figure 1: Historical Development of the Bosporus (Geymen/Baz 2008: 455)

The Bosporus gained importance for both the Europeans and the Ottomans in the 18th century. The tendency for settlement in the 18th century was between the actual city and the sea, a location which could integrate the social functions of the city with the economic functions of the Bosporus. During this time, Istanbul's urban density began to increase, while in the second half of the 19th century, with the construction of the Dolmabahçe, Çırağan, and Yıldız Palaces, the administrative core was relocated to the shores of the river.

Today, Istanbul has grown into a full-fledged metropolis. Green areas, which were part of the *yalıs*, were split up as a result of highway construction. Two additional bridges were built over the Bosporus. Parallel to these developments, the construction of roads and the proliferation of industry alongside the shoreline have restricted public use of the

strait. Similarly, as a result of the construction of the first bridge over the Bosporus and its related bypass roads in 1973, and the construction of the second bridge in 1989, land-uses on both sides of the Bosporus have become negatively influenced because of the urban growth alongside the bypass roads of the Bosporus bridge.

Regarding the rapid urbanization process and demographic growth Istanbul is presently experiencing, protection of the cultural and historic aspects of the Bosporus is of great concern. »Bosporus Law No. 2960« [2] was implemented in November 1983 in order to protect the cultural, historical and natural attributes of Istanbul's Bosporus region. The protection of this area was intended to serve public recreational uses, but also to restrict the population growth and increasing urban density across the area affected by the law.

With its growing population, Istanbul's contemporary planning strategies tend to deal with urban problems in technical ways whereas social planning issues, that need to be addressed properly, are frequently overseen.

The traditional Bosporus dwelling: Yalı architecture

Traditional dwellings, that lend the Bosporus region its identity, are known as *yalı*, a large number of which are located along both sides of the Bosporus. These wooden buildings have a unique relationship to the water. *Yalı*, as a basic residential unit, typically contains an inner and an outer garden, which are connected to each other by a bridge built over a road or a tunnel. The garden starts at the edge of the shore and continues upwards, rising as required by the topographical conditions of the landscape. This green area can be on the back or at the side of the *yalı* building itself. *Yalı* grounds usually include terraced gardens, sitting quarters, outdoor sitting areas, and a little kiosk for watching the moon at night. Living and sleeping quarters are situated inside the wooden *yalı*, while the kitchen, the bathroom and other service quarters are situated in a separate building, which is detached from the *yalı* itself. The *yalı* can only be reached from the river by boats, which are docked on private slips. The private nature of this settlement formation does not allow public access to the water.

2 The purpose of this law is to preserve and improve the cultural and historical assets and natural beauty of the Bosporus, taking into consideration the public interest; also, to organize the development regulations to limit the structuring and the increase of the population density in the area.

With the collapse of the Ottoman Empire, and its accompanying social, economic, and cultural restructuring, *yalıs* were no longer considered valuable.

Background

Social aspects of cities have far-reaching and important effects for the cities' inhabitants. Streets, squares, parks and open areas are places in which citizens can meet; they are a stage for spontaneous encounters between strangers; a platform in which citizens can individually and cooperatively express themselves both politically and culturally: urban public spaces are generators of urban culture. Meanings and experiences associated with a city's public space represent significant forms of communication between an individual citizen and the society as a whole (Erdönmez, 2005: 75-82).

Although humans identify themselves as individuals, they are social creatures. Since public spaces are spaces in which people can interact with others, places in which feelings of belonging and a sense of society is generated support this social nature of human beings. Perception and meaning assigned to space by its users play a critical role in the shaping of these spaces. Within this context, the formation process of society begins in open public spaces where the relationship between individuals and society are established and supported by the physical environment (Erdönmez 2006: 67-73).

Society is a concentration of individuals who share common interests and are thus linked to each other by means of their shared commonalities. In case of the urban process, the spatial element of the city represents a shared commonality; in this case, the common spatial elements are public spaces. While the number of people who share public places is unpredictable and subject to change, spaces shared by a definite number of people, such as our homes and office spaces, are private.

Habermas (2001) describes events and occasions as »public« when they are accessible to all, in contrast to closed and exclusive affairs. A »public building«, however, does not generally refer to public accessibility, a public building may even be closed to general public access; instead, public buildings are called public because they house state institutions or public authorities representing public interest and acting on behalf of the common good.

Today, public areas are frequently evaluated by researchers concerned about socio-cultural functions and uses of the spaces. Given and Leckie state that:

»[…] it seems rather futile to attempt to define public space by a characteristic, such as ownership, or a physical attribute, such as openness. Contemporary public spaces perhaps can be more usefully thought of in terms of the activities that take place within them and the socio-cultural functions that these spaces perform.« (Given/Leckie 2003: 367)

Zukin defines public domain as an ever changing condition, defined by its users and their public and private demands (Zukin 1995: 10-11). Zukin focuses on concepts like »public culture« and »public domain«, stating that public culture and public domain are socially configured. Public culture and public domain are produced by the social correspondences of everyday life that take place in shops, parks and streets. The right to use those spaces, and the investment made in these spaces by individuals generate a sense of ownership, yielding an ever-changing sense of public culture (Erdönmez 2006: 67-68).

One of the most important functions of public urban spaces is to create social life in the city. The interaction of strangers in these open public spaces generates a mutual identity important for the social and cultural formation of society. This social texture includes playing children, celebrations, conversations, collective actions and passive communication (Gehl, 2001:23-29), seeing and hearing.

In Istanbul a social texture has grown over two continents. The Bosporus, cutting through the center of the city, is a space with great potential for the formation of public spaces. Like streets and parks, the banks of the Bosporus can provide places in which it is possible to encounter people who dress and speak differently, where different opinions can be expressed and where people engaged in a diversity of recreation activities can been seen. Currently, people tend to use the narrow coastal sidewalks as places of gathering and for various recreation activities.

Methodology

The above description shows the specific importance of the Bosporus for Istanbul: geographically, it divides the city on two continents. It is an historic site of urban development and it has an important aspect for transportation. However, urban culture, like the planning of this growing city, is a permanent process, but the contemporary attempts by the city's public authorities to rearrange the urban landscape seem not to focus on the needs of the people.

Open public area activities, which are influenced profoundly by the physical environment (Gehl 2001: 13-15), can be distinguished into nec-

essary activities, optional activities and social activities. Necessary activities, which most people participate in, include transportation to school or work. Optional activities depend on the availability of space and how much individuals wish to participate. Examples of optional activities include taking a walk, relaxing in the park, or sunbathing. Activities like these can only take place according to the suitable outdoor conditions, and only when the space is available and in the desired quality.

Fields of research: Ortaköy, Bebek, Rumelihisarı, Beylerbeyi, Çengelköy and Kandilli

Our case study includes a brief morphological analysis of six selected Bosporus settlements: Ortaköy, Bebek, Rumelihisarı, Beylerbeyi, Çengelköy and Kandilli. These neighborhoods are located next to another on either sides of the Bosporus.

As stated above, these neighborhoods are characterized by *yalıs* in which privileged state officers, capital holders or traders lived during the Ottoman Empire. Some of the *yalı* also served as summer house embassies of different countries. The coastal transportation line, which began operation in 1956, along with its negative externalities, brought in new perspectives for the public use of those settlements.

The traffic route has different effects on the land formation on each side of the Istanbul Strait. On the European side, starting from Ortaköy, the southernmost village of the Bosporus, and until the northernmost settlements of Tarabya, there are few possibilities for the construction of buildings. The existence of pedestrian strips however, which partially extend towards the strait, offers potential for public access, and therefore contact with the sea/river. Apart from Kuleli and some sections of Beykoz, the coastal road and the adjacent sea are continually interrupted by private buildings, restricting the formation of open public spaces on the Asian side.

Ortaköy, our first case study, is inserted between the coastal transportation line and the Istanbul strait. Among other things, the neighborhood accommodates recreational and commercial spaces like cafes, brasseries, small art galleries and gift shops. The main open public space is organized around the ferry port and Mecidiye Mosque, onto which narrow streets open. Apart from the mosque, Ortaköy also accommodates the Etz Ahayim synagogue and the Surp Asdvadzadzin Ermenian church, both service congregations of substantial scale.

Figure 2: View from Ortaköy[3]

The second case study is Bebek. Bebek is a wealthy neighborhood in which well-to-do people live. A ferry port with public service connects the community to the inner city. On the edge of the neighborhood, there is a green city park. A small mosque designed by Kemalettin Bey in the beginning of the 20th century, a good example of the first national architectural style, is located at the other end of the park. The park also houses two cafes, one of which is rather luxurious. A walkway, which is commonly used by the locals for jogging and walking, provides access to the water for fishing.

Figure 3: View from Bebek

Rumelihisarı, on the European side, is characterized by an old castle bastion and walls that lend the neighborhood its name. A steep ridge, which extends along the strait, restricts the formation of vast open public spaces, although places with sociopetal functions, such as cafés or restaurants, could expand along a narrow strip of green along both sides of the coastal transportation line.

3 All photos in this article are taken by the authors

Figure 4: View from Rumelihisarı

On the Asian side, Beylerbeyi is our first research case. The settlement was named after the Palace of Beylerbeyi, which was a popular summer destination during the 19th century. The Bosporus bridge connects Ortaköy and Beylerbeyi. The settlement has grown around a mosque built in the last quarter of 18th century, designed in Ottoman baroque style. There is a ferry port for intercity maritime lines. A small breakwater is encircled by fish restaurants and taverns; it also provides possibilities for fishing.

Figure 5: View from Beylerbeyi

Çengelköy, the next settlement chosen as a case study, accommodates one of the oldest and finest examples of *yalı* architecture, the Sadullah Paşa yalısı; a palace, that was built in the last quarter of 18th century. Another important architectural element in this area is the Kuleli military building. Çengelköy also hosts an active ferry port and small piers for boats.

Figure 6: View from Çengelköy

Kandilli is most famous for its observatory building, which sets the Turkish time. The village is located at a broader part of the Bosporus and there is a panoramic view over the river and its shores.

Figure 7: View from Kandilli

Case study

Aerial views and photometric maps provided by the Istanbul Metropolitan Municipality are the basis of the land use readings made for this study. Furthermore, field data was collected from various parts of the city, including interviews that were conducted with a number of people from Istanbul.

Land-use readings from the photometric maps of the settlements provided data for the »developed« areas - areas in which buildings, roads, green areas, and open public spaces are located. The photometric maps also provided information about the dimensions of the public spaces that

lie on the coast of the Bosporus. In order to compare different settlements with each other, land –use indexes were generated. For example, to compare the building density of each settlement, the ratio of the built area to the total amount of land is required. Square meter dimensions of different types of land use (building areas, green areas, public areas and road areas) in different settlements have been divided by the total land areas of each settlement to determine their land-use indexes and can therefore be compared to each other. Likewise, public areas – such as the public coast line index, were derived by dividing the coastal length of a particular settlement by the average value of coastal length of all of the selected settlements.

Finally, all the indexical values are combined to form a hypothetical equation, which presumed to calculate the public potential of an open space. This hypothetical equation aims to distinguish two important factors concerning the public character of Bosporus settlements in determining the strength and weakness of the related open public areas. The first factor is the public saturation value, which is determined by the proportion of the public area index (P_a) to the building area index (B), which basically gives the proportion of public area to building area, i.e. P_a:B. A ratio of 1:1 would indicate that the selected settlement has the same amount of building and public areas.

The second factor determines the public potential of selected settlements, which is defined by the ratio of the public area index (P_a), the public coast line index (P_c) , and the green area index (G) to the total built area index, which is defined by the sum of building areas (B) and road area (R) indexes. This formulation assumes that public open areas are contiguous with one another and the sea is an attractive factor for people to use those public places. Also, green areas are presumed to be of great potential for these public areas, extending positive behavioral effect on people attracted to those areas. Therefore, green areas are formulated to be directly proportional to »public potential«.

The index of the total built (sum of building area and road area indexes) is assumed to be a restrictive behavioral factor and inversely proportional to the hypothetical equation of public potential (Table 1). Indexed data gathered from land-use readings have been utilized to determine the strength and weaknesses of the public potential of the selected settlements. This reading provides additional information on issues like:

Indicator	Significance	Strength/ Weakness	Opportunity /Threat
Building area index (B) (building areas/total land area)	Negative impact on environmental perception, detract public use	■	
Road areas index (R) (road areas/total land area)	Negative impact on environmental perception, detract public use	■	
Green area index (G) (green areas/total land area)	Positive impact environmental perception, provides potential for public area, attracts people	■	
Public area index (P_a) (public areas/total land area)	Public potential indicator	■	■
Public coast line index (P_c) Public coastline length/average length of public coast lines	Public potential indicator	■	■
public saturation index (P_s) building area index / public area index P_s= B / P_a /	Public potential indicator	■	■
index of public potential (P_p) P_p= (Pa X P_c X G) / (B+R)*	Public potential indicator	■	■

Table 1: The indicator and signification of the main issues in the land use readings

A public survey about people's use and perception of the open public determined the opportunities and threats to the public potential, in addition to the strengths and weaknesses of the settlements. The main issues included in the surveyed were:

indicator	signification	strength/ weakness	opportunity/ threat
Frequency and duration of visits (how many times a year/for how long each time)	Indicates character of the public area as to whether it is recognized to be socio-petal or socio-fugal (its degree of public recognition)	■	
Nature of visit (optional /obligatory)	Optional presence enhances public potential when combined with physical environmental input		■
Associated activities	Indicates which activities people perform in public open spaces; which positive concepts are associated with the public open areas in the selected settlements	■	
Spatial capacity, functional equipments	Sufficiency/inadequacy of the open public spaces, direction of public area transformation		■

Table 2: The indicator and signification of the main issues in the survey

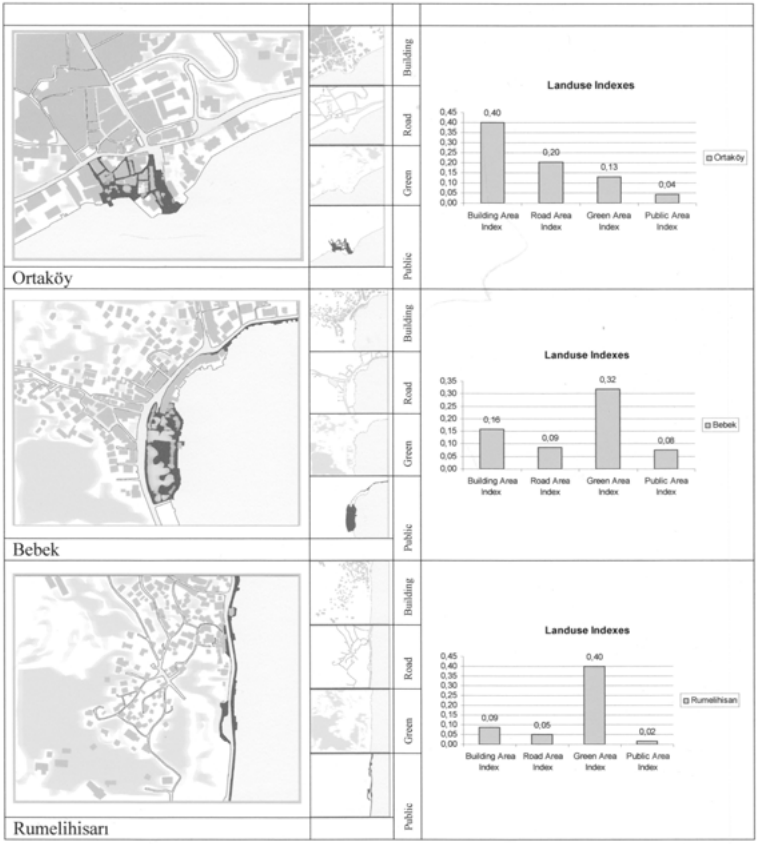

Table 3: Land use analysis of selected Settings on the European side: Ortaköy, Bebek and Rumelihisar

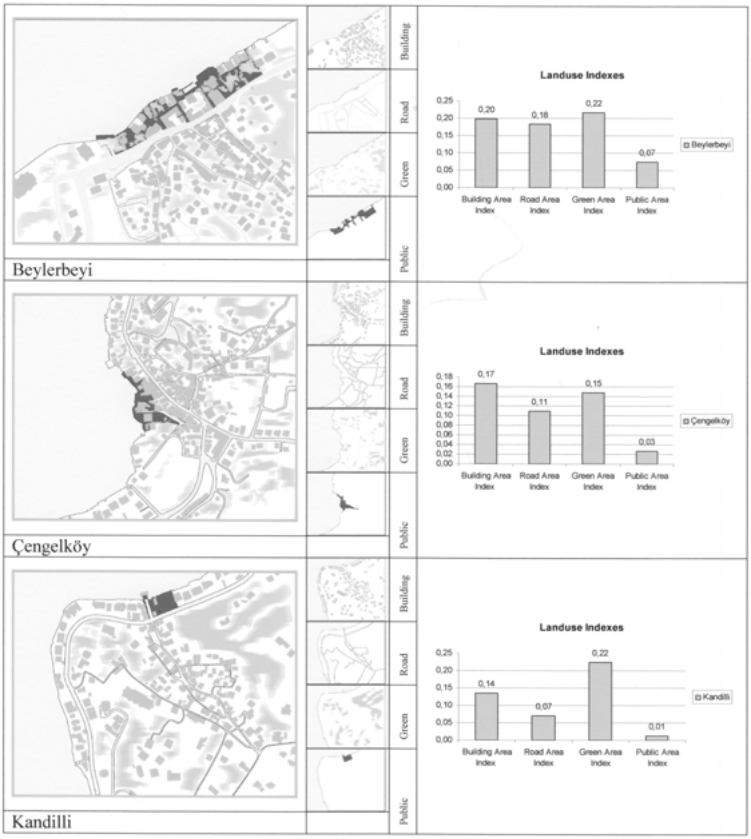

Table 4: Land use analysis of selected settings on the Asian side: Beylerbeyi, Çengelköy and Kandilli

Table 3 and 4 show the land uses of the selected settlements. Amongst them, Ortaköy seems to be the most dense, while Bebek seems to have the most amount and Kandilli the least amount of open public areas. The figure below shows the public sea line index values of the settlements, relating to the length of each public open area adjacent to the sea.

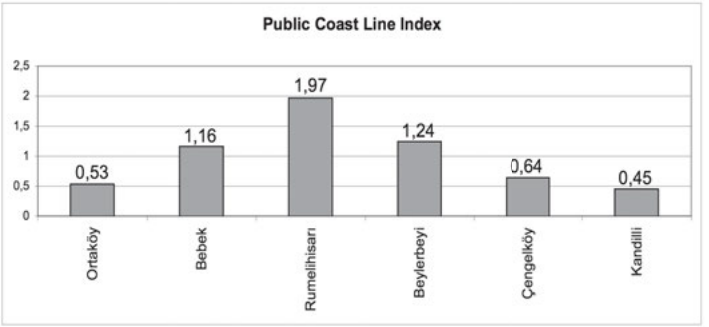

Table 5: Public area – sea adjacency of the settings

Table 5 shows that existing open public spaces in Ortaköy, Çengelköy, and Kandilli are more saturated than the other settlements. Ortaköy has the highest urban density, while Kandilli has the least amount of public open area. The graph indicates that Ortaköy and Kandilli also have the lowest public potential. Index potential values in Bebek, Rumelihisarı and Beylerbeyi are higher than their public saturation values, indicating that those settlements are more likely to need no additional areas for public purposes. Furthermore, when these areas are equipped with adequate and convenient functions and facilities and provide better physical environmental conditions, they are better equipped to serve public functions.

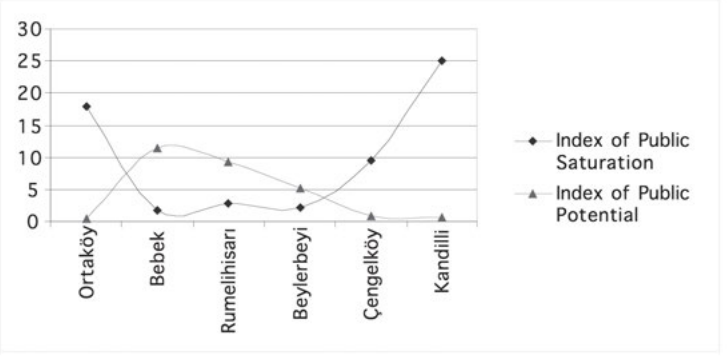

Table 6: Public use and potential of selected settings.

The survey

Twenty-six people from upper-middle and middle income groups were surveyed, 70 percent of whom were between the ages of 21and 30 at the time of the survey. Eighty-nine percent of the participants were university-educated. Data derived from the survey indicates that the frequency of visits to public areas on the European side of the Bosporus is higher than the frequency of visits to the Asian side. Survey data also shows that Ortaköy has greatest public potential in terms of both frequency and duration of visit.

Next, survey participants were asked to indicate what attributes they associate with public spaces. Those qualities include some positive aspects we assume an open public space should include. Figure eight shows, which qualities participants associate with public spaces in the selected settlements. All the public spaces in the selected settlements show in the graph that they lack safety, quietness, green, transportation access, and cultural activities. Contrasting to the results from the land-use survey in the previous section, the sea and interaction with the sea was perceived to be the strongest aspect of all the public spaces in the selected Bosporus settlements. Participants also indicated that public spaces adjacent to the sea offer a good view of the Bosporus, strengthening the quality of the public spaces.

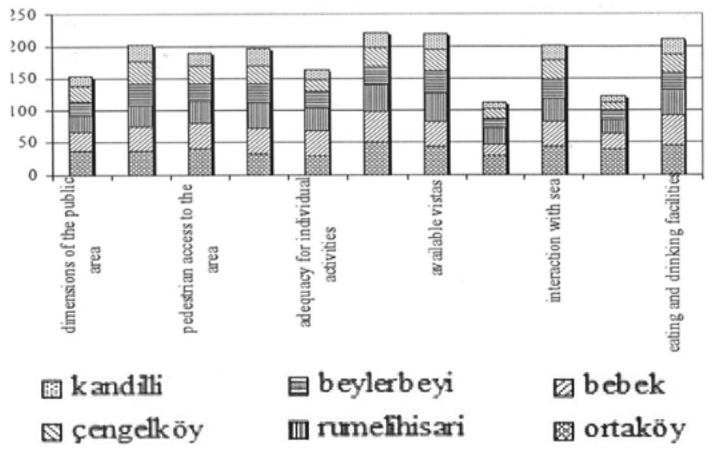

Table 7: Opportunities/Threats: The perceived conditions of public spaces in the selected Bosporus settlements

To determine which opportunities and threats apply to the future development of these public spaces, participants were asked to evaluate the conditions shown in the table above on a scale from one to three, one indicating poor condition of space in need of enhancement; three indicating that participants found the existing condition of the public space satisfactory. According to table 7, derived from the response of participants, Kandilli was lacking appropriate spatial quality and services in almost each category.

Conclusion

In this research, data gathered from the physical environment and behavioral responses of users have been compared with each other in the form of a SWOT analysis. In brief, depending on the saturation and potential comparison of the public spaces shown in table 6, Ortaköy, Beylerbeyi, Çengelköy, and Kandilli show limited public potential; the size and quality of the public spaces in these areas as well as the public access to the shore need to be addressed. The data in this study show that the perception of these areas differs greatly from their true qualities and nature. People continue to believe that the settlements in question provide good opportunities for their interaction with the sea. This perception is important to ferry operators, since they provide a pleasant alternative for public transportation. Apart from Ortaköy's mediocre transport perception data (see table 7), all the other settlements are evaluated as »weak«.

Furthermore, experiencing other people in public spaces represents a particularly colorful and attractive opportunity. In addition to the perception of buildings and other inanimate objects, experiencing people, who communicate and move about, offers a wealth of sensual variation. »At sidewalk cafés, as well, the life on the sidewalk in front of the café is the prime attraction. Almost without exception, café chairs throughout the world are oriented toward the most nearby active area«.

As the physical quality of open public spaces increases, ways in which these spaces are used also expand with the needs and expectations of their users. Many activities enable public spaces of better quality.

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