

# USE OF NATURAL RECREATIONAL AREAS IN AND AROUND ISTANBUL

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## ABSTRACT

This research explored peoples' preferences as well as use patterns of and satisfaction with six nature recreational areas in Istanbul. These are the Bosphorus, the Marmara Sea Coast, the Belgrade Forest, the Black Sea Coast, the Princes Islands, and the Historical Peninsula. By applying a paper-pencil survey - to 500 individuals randomly, we found that the Bosphorus was the most visited area, followed by the Marmara Sea Coast. The least visited areas were the Belgrade Forest, the Black Sea Coast, and the Princes Islands. In general, recreational areas within a close distance to the city centre or residential areas, with convenient public transportation, and a variety of amenities to undertake multiple recreational needs are more likely to be used and visited by students and those aged between 25 and 34. The primary criterion to visit their favorite recreational area was its beauty of nature, followed by the closeness to their residents. Most of the respondents were engaged in leisurely walking. The results also indicate a clear correlation between travel time, visit frequency, and duration of visits. More distant recreational areas requiring longer travel times were visited less frequently, but visit duration was also longer. In contrast, recreational areas within a close distance to the city centre and visitors' residences were visited more frequently, for a period of two hours or less, and primarily for leisurely walking. The presented results underscore the need to better understand which characteristics of recreational areas increase quality, quantity, and scope of their usage by appealing to a broad range of age and occupational groups.

**Keywords:** Nature-based recreation, urban green, usability quality, Istanbul

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## Introduction

The demand for recreational activities increased after the Second World War (Knetsch, 1963). Classification of outdoor recreational areas has been of importance for years in terms of managing the areas, understanding their utilization schemes and providing best services for their users. More than half a century ago, in 1962, the Outdoor Recreation Resources Review Commission suggested six classes of the outdoor recreational areas: (1) high density recreation areas, (2) general outdoor areas, (3) natural environment areas, (4) outstanding/unique natural areas, (5) primitive areas, and (6) historic and cultural sites (Commission, 1962). The first three classes are primarily recognized by their distance to an urban setting and degree of development, while the other three categories have their unique characteristics as their labels imply.

Natural area recreation is among the outdoor recreation activities. It is divided into five stages by Clawson and Knetsch (1963) in terms of realizing outdoor recreation. These; planning or anticipation, travel to the recreation site, on site experiences, travel back, recollection. Although these stages are relevant for all recreation area visitors, the characteristic of the area visited determines the structure of the visitors and contributes to the classification as user-oriented, intermediate, and resource-based (Knetsch, 1963). Burdge & Field (1972) presented 6 different perspectives for outdoor recreation studies and they saw outdoor recreation as a practical problem rather than a theoretical problem. For this reason, they suggest that different methodological approaches should be taken into consideration in researches to be conducted (Burdge, 1972). Seeley (1973) used the expression "Outdoor recreational areas are extremely diverse in their nature and scope and generally involve the use of large areas of land or water which are often in short supply" in his book, which deals with all aspects of outdoor recreational areas (Seeley, 1973).

Green space can be defined as "natural or human-modified outdoor areas comprised of vegetation, water, and/or other permeable surfaces... including parks, lakes, and community gardens, as well as unconventional spaces like cemeteries and stormwater ponds" (Wright Wendel 2011). Natural areas and open green spaces in urbanized environments are vital for satisfying various needs of urban dwellers (Artmann et al., 2017; J. Q. Breuste, Salman, 2011; Chiesura, 2004; Kabisch, 2015). They provide an opportunity for human-nature contact and improve the well-being and quality of life of people living in cities (Artmann et al., 2017; Breuste J., 2008 Landscape Ecology; J. Q. Breuste, Salman, 2011; Dzhambov & Dimitrova, 2014; Fuller & Gaston, 2009; Grahn & Stigsdotter, 2003; Kaźmierczak, 2013; Sugiyama, Francis, Middleton, Owen, & Giles-Corti, 2010). For example, exposure to green areas reduces the frustration resulting from city noise (Dzhambov & Dimitrova, 2014) as well as stress levels (Hansmann, Hug, & Seeland, 2007; Moulay, Ujang, & Said, 2017; Tyrväinen et al., 2014; Woo, Tang, Suen, Leung, & Wong, 2009). It provides settings to connect with people, to socialize, and to develop family and social ties (Chiesura, 2004; Moulay et al., 2017; Zwierzchowska et al., 2018), and to do physical activity for leisure purposes (Artmann et al., 2017; Cohen et al., 2007; Jensen & Koch, 2004; Sugiyama et al., 2010).

Human-nature contact of people living in a very big city like Istanbul is more and more reduced by urban development. Different social groups of population suffer more or less by this. Occupation and age were used as two main indicators to differentiate them. Based on this, different utilization characteristics (frequencies of visits, duration of visits, travel time, utilization reasons and activities performed) show the relation and using of six well-known and developed urban recreational areas. This allows to identify preferences of social groups for specific nature areas which can support decision making for an improved nature contact of people by quality improvement of the six areas, by development of new natural recreational areas if needed and by targeted reduction of travel time to connect the natural recreational areas closer to the neighborhoods of the residents.

A descriptive empirical research with targets to get quantitative data on this help to understand better human-nature contacts of urban dwellers. The paper is a descriptive empirical research on a case study of Europe's largest city with the target to get quantitative data on utilization of urban natural recreational areas

### *Activity Participation at Natural Recreational Areas*

Natural area utilization has been studied by many researchers (e.g. (Bedimo-Rung, Mowen, & Cohen, 2005; J. Breuste & Astner, 2017; Kaźmierczak, 2013). Depending on the purpose and location of the studies, several different methods of assessing visiting patterns of green areas have been used in the literature, including the number of visits in a week, month, or year (Cohen et al., 2007; Gobster, 2002; Jensen & Koch, 2004), or adverbs such as: frequently, sometimes, less frequently, etc. A core of activities at recreational areas or green spaces reported in the studies includes picnicking, hiking, walking, exercising, talking, meeting with friends, and sedentary activities such as sitting. Among those, walking is the most common activity (Boll, Von Haaren, & Von Ruschkowski, 2014; J. Breuste & Astner, 2017;

Floyd, 2008). Other frequently reported activities are sitting, enjoying nature, and exercising. Fishing is the activity performed least (Jensen & Koch, 2004). A study conducted in Ankara, Turkey, demonstrates that visitors of green spaces prefer sitting on benches, walking and running, viewing landscape, and enjoying visual elements of nature, the nearness to water, and the peaceful atmosphere (Oguz, 2000).

### ***Factors Influencing the Use of Recreational Areas***

Various features, conditions, and attributes of recreational areas determine whether and how people use them (Bedimo-Rung et al., 2005). Urban green areas with easy access and/or close proximity to the visitors' homes are used more frequently (Bjork et al., 2008; B. Giles-Corti et al., 2005; McCormack, Rock, Toohey, & Hignell, 2010; Schipperijn, Stigsdotter, Randrup, & Troelsen, 2010; Silva, Fermino, Lopes, Alberico, & Reis, 2018; Sugiyama et al., 2010), because people need less time and cost to reach these areas. The availability of amenities such as sports facilities, walking and biking paths, benches, areas for picnicking and grilling, playgrounds, and green spaces increases the use of recreational areas (McCormack et al., 2010; Silva et al., 2018). Recreational areas with good conditions and well-maintained, aesthetically pleasing features, a diverse ecological composition such as trees, plants, water, and animals and naturalness attract more visitors (Boll et al., 2014; B. Giles-Corti, Macintyre, S., Clarkson, J.P., Pikora, T., Donovan, R.J., 2003; McCormack et al., 2010; Sezer & Akova, 2016; Veitch, Ball, Crawford, Abbott, & Salmon, 2012).

In general, research has shown that the distance of the nature recreational area is usually the main criterion determining its use. Urban green areas with easy access and/or close to home are used more frequently (Cohen et al., 2007; Grahn & Stigsdotter, 2003; Schipperijn et al., 2010; Silva et al., 2018; Sugiyama et al., 2010). However, in some cases, people do not preferentially visit recreational areas close to their homes. They may use more than only one criterion (e.g., distance naturalness, facilities). People expect recreational area visits to be a pleasurable experience and a nice social activity (Zwierzchowska et al., 2018). Expected quality and quantity and motives for recreational area visits probably influence which characteristics of recreational areas people consider when selecting one. For example, the nearest parks are preferred when walking is the main activity (Cohen et al., 2007; Gobster, 2002); recreational areas with sports facility are preferred when people want to do sports (Floyd, 2008); and vegetated areas are preferred when people want to do nature observation (Artmann et al., 2017; Shanahan, Lin, Gaston, Bush, & Fuller, 2015)) or when naturalness is their priority (Boll et al., 2014). An Australian study (Shanahan et al., 2015) examined the influence of availability (e.g., distance) and vegetation of the parks on the park visitation rates and found that people give preference to parks closer to home rather than more vegetated parks. However, they found that parks with greater vegetation were visited more frequently by people with greater nature orientation despite the need to travel longer. Zwierzchowska et al. (Zwierzchowska et al., 2018) found that diversified landscape parks are visited more often by people having to travel a longer distance whereas neighbourhood parks are visited more frequently by those living nearby. Studies focused on recreational areas in Istanbul showed that the beauty of nature is the most important reason for people visiting natural recreational areas.

### ***The Present Study***

Characteristics as well as use patterns of and satisfaction with natural recreational areas vary within and across countries (B. Giles-Corti et al., 2005). Nonetheless, as mentioned above, a body of research has focused on how and why urban green spaces and recreational areas, primarily parks, are used, mostly originating from Australia, Europe, and the United States. Limited research has been carried out concerning recreational area usage in Turkey, particularly in Istanbul (e.g. (Aksoy, 2009 ; Sezer & Akova, 2016) ), leaving a gap in the respective literature. Also, research conducted in Istanbul has so far only focused on one or a few provinces or parks. For example, Altıntaş (Altıntaş, 2017) focused on Esenler province, Aksoy, and Ergun (Aksoy, 2009 ) focused on people's interaction with nature in Bakirkoy province; Kart (Kart, 2005) and Sezer and Akova (Sezer & Akova, 2016) focused on the most known parks (Emirgan, Yildiz, and Gülhane). Although studies on the user preferences and utilization of parks in Istanbul have been carried out (e.g., (Kart, 2005; Sezer & Akova, 2016), peripheral recreational areas in a broader context have not received enough attention. To address this gap, this study examined the use of well-known recreational areas located both close to and far from the city centre, and posed the following four research questions: 1) Which natural recreational areas in and around Istanbul are preferred by Istanbul residents in general and which based on gender and occupational status? Considering their favorite one 2) How long, on average, does it take to arrive at the recreational area? 3) What is the frequency and length of the recreational area use? and 4) How and why is each recreational area used?

Descriptive in nature, this research has several contributions to practice. Understanding its accessibility, frequency, duration, and motivations of using recreational areas, as well as types of activities undertaken at the areas could help to improve the qualities and infrastructure of recreational areas (Artmann et al., 2017). It might also increase the use of recreational areas and human-nature contact of people living in Istanbul, which in turn, is expected to increase physical, social, and psychological benefits. It also helps Istanbul municipalities and environmental and regional planners develop more realistic landscape policies and plans shaped according to the identified use patterns.

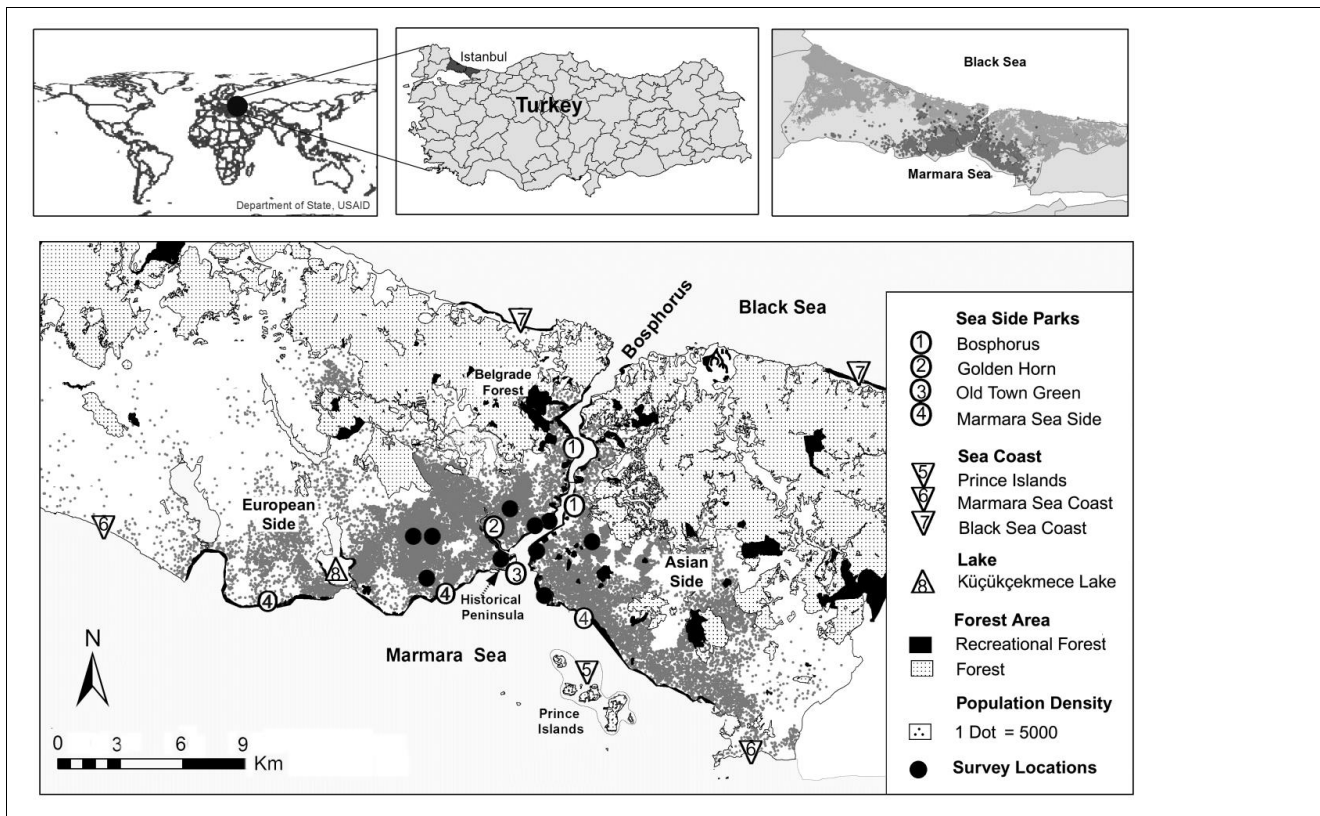
## Method

### Study Site

#### *The city of Istanbul*

Istanbul is located in the Northeastern part of Turkey. It has land both on the Asian and European Continent, with the Bosphorus bridging the two. It lies in an area of about 5,200 km<sup>2</sup>, including approximately 2,600 km<sup>2</sup> forest area. It is a coastal city with sides on the Marmara Sea, Black Sea, Bosphorus, and lakes, with a total of 927 km of coastline (see Figure 1 below). The city has settled through the east-west axis of the Marmara Sea coast and near the Bosphorus. As of 2020 Istanbul hosts over 15.5 million inhabitants, making it the most crowded city in both Turkey and Europe.

Istanbul has many recreational areas in various sizes and features. As of 2008, Istanbul has 2,470 open recreational areas (Kara, Demirci, & Kocaman, 2008), more than 40 of which are well-known (istanbul.ktb.gov.tr, 2019). Due to the size of Istanbul, the study focused on six regions of recreation areas, which were identified based on expert discussions: Bosphorus, Marmara Sea Coast, Belgrade Forest, Black Sea Coast, Princes Islands, and Historical Peninsula. Figures 2A-2D show the location of Istanbul and the location of recreational areas used in this study. These six recreational areas are diverse, varying in vegetation cover, size, quality of the environment, species richness, and availability of public transportation, as well as amenities and services.



**Figure 1.** Location of the Study Area

### *Features of Recreational Area Regions*

**The Bosphorus.** The Bosphorus, connects the Black Sea and the Marmara Sea, like a river flowing between the European and Asian continents. It covers an area of approximately 285 km<sup>2</sup> (Bezmez, 2009). The area along the Bosphorus area includes many historical houses, villas, palaces, and other places, promenades, and natural green areas such as Yıldız Park, Emirgan, Adile Sultan, and Fethi Paşa Groves. The area has many cafés, restaurants, and recreational areas with their views over the Bosphorus and walking paths by its coast. It has convenient public transportation such as buses, subways, and ferries.

**Marmara Sea coast.** It is the coastal area by the Marmara Sea with approximately 150 km length, between Silivri and Eminönü on the European side and between Üsküdar and Tuzla on the Asian side. It has cafés, restaurants, biking and walking paths, playgrounds, resting and picnic areas, and beaches with limited use (Dikçinar Sel, 2018), as well as historical and religious places. Public transportation opportunities are available along the Marmara Sea coast such as buses, subways, and ferries.

**Belgrade Forest.** The Belgrade Forest lies on the northern outskirts of Istanbul on the European side and covers an area of 59.26 km<sup>2</sup> (Özcan, 2009). It has waterways and meadows as well as quiet secluded trails for jogging and hiking. It is rich in flora and fauna species with about 400 plant types, and 169 bird and 56 butterfly species, as well as many types of mammals, reptiles, and amphibians (Park et al., 2009). It lies about 20 km from the city centre and its public transportation is provided by bus.

**Black Sea coast.** The Black Sea coast is located on the northern side of Istanbul. It is relatively far from the city centre and urban residential areas and has limited public transportation opportunities. Black Sea coasts are not preferred for recreational purposes very often as the Black Sea might be rough and its coasts are not very convenient for sea-side tourism.

**Historical Peninsula.** The Historical Peninsula covers an area of 15.9 km<sup>2</sup>, with the Golden Horn, the Bosphorus, and the Marmara Sea surrounding it (Government, 2018). It has very convenient public transportation opportunities, including busses, ferries, trams, and subways. The region has a lot of mosques, museums, palaces, parks, and the Grand Bazaar. The area also has a lot of cafés, restaurants, hotels, and recreational areas.

**Princes Islands.** Located in the northeastern part of the Marmara Sea, there are nine islands. Namely, Büyükada (Big Island), Heybeli Ada, Burgaz Ada, Kınalı Ada, Sedef Adası, Kaşık Adası, Sivri Ada, Yassı Ada, and Balıkçı Adası. The Princes Islands cover 11.96 km<sup>2</sup> in total and have 44.5 km of coastline. More than 50% of the Islands' surfaces are forest. The Islands also have historical places and offer restaurants and cafés. They attract many people for daily or weekend visits. Transportation to the Islands is done through ferries and transportation on the Islands is provided by phaetons/barouche (using horses), bicycling, and public transportation (Garipağaoğlu, 2015)

### *Data collection sites*

Ten downtown squares were chosen for collecting the data. Of those, seven were located on the European side and three were located on the Asian side. Namely, squares at Eminönü, Taksim, Beşiktaş, Ortaköy, Esenler, Bağcılar, and Bakırköy districts on the European side and squares at Kadıköy, Üsküdar and Ümraniye counties on the Asian side were used. These downtown squares were chosen because they are more likely to be visited by individuals who are diverse in terms of their age, gender, socioeconomic status, and recreational interests as these districts have high popularity due to their historical and touristic areas, as well as places for entertainment and sightseeing.

A total of 20 graduate students administered the survey at the squares. Two interviewers were assigned to each square. During the first week of November, between 10 A.M. and 7 P.M, researchers randomly approached individuals passing by the squares, informed them about the study, and asked if they would voluntarily participate in the survey. Interviews were conducted with volunteers individually, face to face, and one-on-one using a paper-pencil questionnaire while standing up. Face-to-face survey is considered as more appropriate than other data collection procedures (e.g. on-line surveys) for such research to reach more individuals from a diverse population, and have a high response rate (For a more detailed discussion of data collection procedure see Hayir-Kanat and Breuste, (Hayir-Kanat, 2020)).

### *Respondents*

Respondents of the study consisted of 500 individuals, who completed the entire survey. Approximately 17% (f=84) of respondents were recruited from the Asian side and 83% (f=416) respondents were recruited from the European side, where most of the residents of Istanbul live. During the interviews, 62% (f=309) of the respondents were

on their own, 25.6% (f=128) were with a partner, 7.6% (f=38) were with a group without a child and 5.6% (f=28) were with a group including a child(ren) under 10. Only the residents were surveyed.

Of the respondents, 52% were female. Approximately nine percent were between 20 and 24, 48 years old % were between 25 and 34 years old, 22% % were between 35 and 44 years old, 10% were aged between 45 and 54 years old, and 12% were 55 or older. Ten percent were state employees, 47.1% were students, 12% were workers, 9% were self-employed, 8% were retired and about 14% were unemployed.

In order to determine the relationships between the places visited and the variables, their correlations were examined. Chi-Square Test and one-way ANOVA Tests were performed analysis of variance . The values obtained from continuous variables for two groups or two cases are compared with the t-test. If there are more than two situations or groups, one-way analysis of variance (ANOVA) tests are performed (Pallant, 2016)

#### 2.4. Survey Instrument

The survey items regarding this article consisted of the respondent's demographics data including age, gender, and occupation as well as eight questions regarding the following topics of interests: 1) The most frequently used recreational areas with response categories given above (Bosphorus, Marmara Sea Coast, Black Sea Coasts, Historical Peninsula, Princes Islands, Belgrade Forest); 2) How frequently they visit this recreational area ; 3) Duration of a typical stay at the area; 4) Average travel time to arrive at the area; 5) Primary criterion to use this recreational area, and 6) Types of activities undertaken during their recreational area visits.

## Results

### *The Most Visited Recreational Areas*

Overall, 42.1% of the respondents reported that the Bosphorus area was their most frequently visited recreational area. This was followed by the Marmara Sea coast with 20.2% and the Historical Peninsula with 12.1%. The Belgrade Forest was cited by 8.3%, the Princes Islands were cited with 7.7%. The Black Sea coast was reported as their most frequently visited area with 4.7%. In the ANOVA test, no significant relationship was found between the place visited and the work done, gender and age.

The research was applied in 10 squares in Istanbul (Asian and European part) in order to reach people from the whole city. While 7 of these squares are the main squares of the city of Istanbul, three of them are local squares[51]. Thus, the opinions of people who do not use the squares were also included in the study . As a result of the data obtained, six most visited natural recreational areas have emerged. It investigated the areas in terms of popularity, frequency and duration of visits, travel time to the area, the primary criterion for choosing the area, and the type of recreational activities pursued in the area. The utilization characteristics of the six investigated natural recreational areas are:

**Bosphorus.** The Bosphorus is an area that attracts visitors from all occupational groups with students followed by employed individuals composing the majority. Most of its visitors are 25-34 years old, visit the area once a week or more frequently; spend 60 minutes or shorter to arrive there. The visitors recreate there at least an hour by doing leisurely walks, looking around, or meeting with others as they enjoy the beauty of nature.

**Marmara Sea coast.** It is also visited by students and 25-34 year-olds mostly. Retired individuals appear to go there less often. Most of its visitors go there once a week or more often and spend at least an hour thereby looking around and doing leisurely walk. Arriving at the area takes between 30 minutes and two hours for the majority. The area is primarily preferred for its beauty of nature and convenient transportation.

**Historical Peninsula.** It is visited by students and individuals aged between 25 and 34 mostly. Most of its visitors go there once a week or once a month, travel between 30 minutes to two hours, and spend three or more hours there. Meeting with others and leisurely walks are the preferred activities for the majority of visitors. Its closeness, convenience of transportation, and beauty of nature are almost equally important factors for choosing to visit this area.

**Princes Islands.** The area is preferred by students and employed individuals and by those aged between 24 and 35 mostly. Most of the visitors go there once a month or less often with a travel time of at least an hour or more and spend more than five hours there. The majority of visitors visit the area due to its beauty of nature and prefer leisurely walking and meeting others.

**Belgrade Forest.** The Belgrade Forest is preferred by employed individuals and by those over 24 years old. Most visitors visit once a week or less and stay for five hours or longer. The estimated travel time of most visitors is

between 30 minutes and two hours. Most visitors do leisurely walking and grilling; they choose the area due to its beauty of nature.

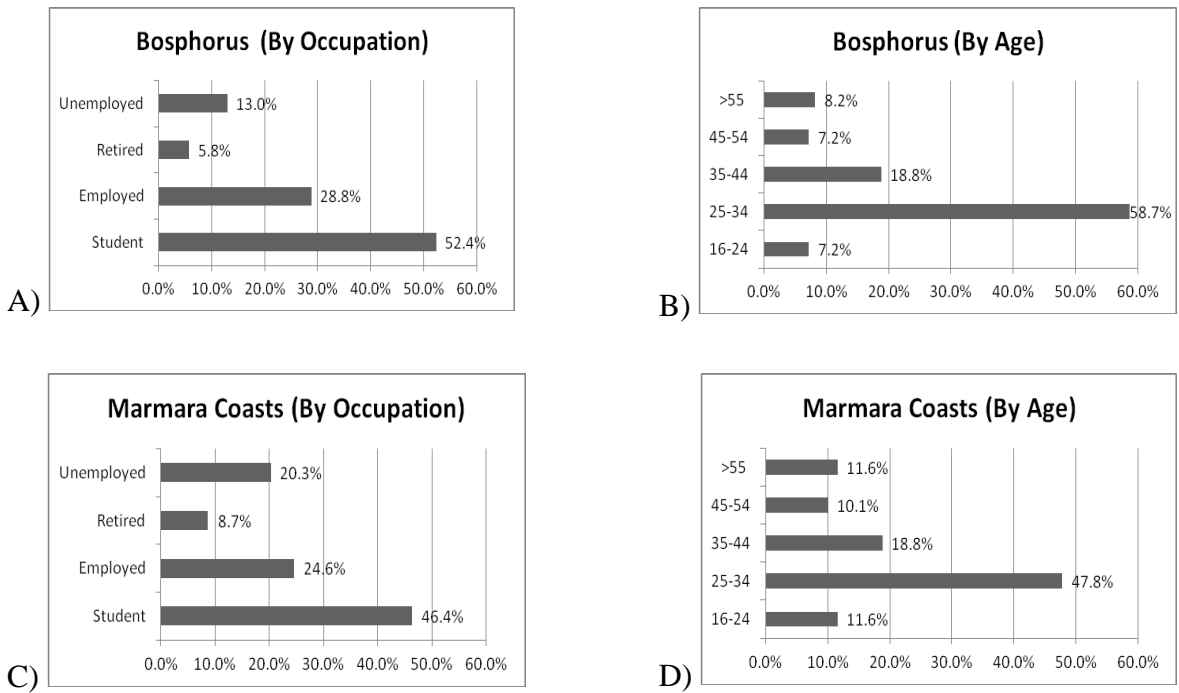
**Black Sea Coast.** The Black Sea Coast is used mostly by employed individuals and by 35-44 year-olds. Most visitors prefer the area for its beauty of nature and meet others. They visit once a month or less. 92% of the visitors stay for at least three hours or longer, and 96% take more than 30 minutes to get there .

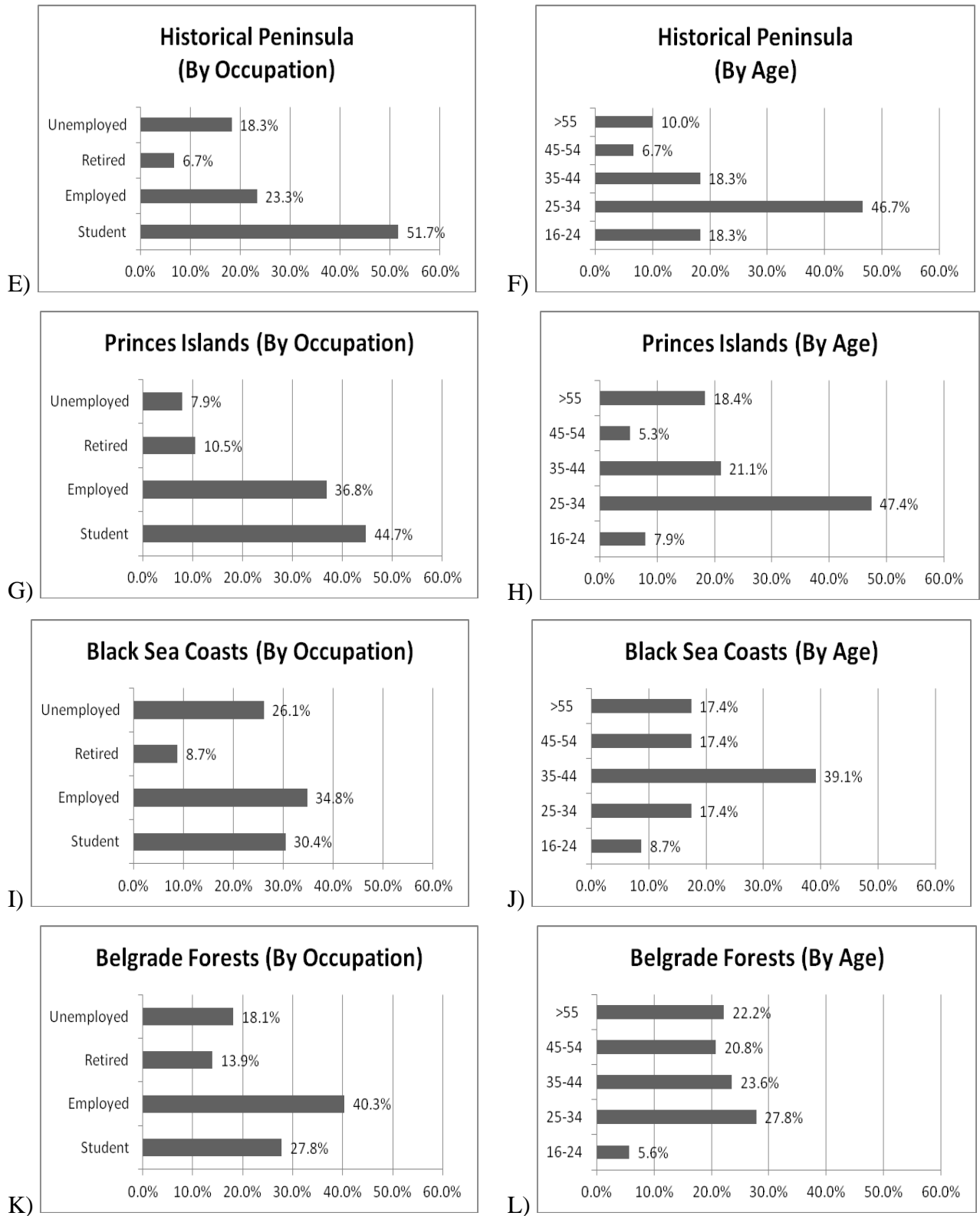
**Age and Occupational Differences in Recreational Area Preferences**

Figure 2 displays the recreational area visits by age and occupational groups in percentages. As seen in the Figures 2A to -L the majority of the Bosphorus, Marmara Sea Coasts, Princess Islands, and Historical Peninsula visitors were aged between 25 and 34 years old, followed by visitors aged between 35 and 44 years old. Specifically, 77.5% of the Bosphorus visitors, 68.5% of the Princes Islands visitors, 66.6% of the Marmara Sea Coast visitors, and 65% of the Old Historical Peninsula visitors were respondents within the 25-44 years old age groups.

On the other hand, 39.1% of the respondents aged between 35 and 44 and a similar percentage of respondents aged between 20 and 24 and older than 44 years old reported visiting the Black Sea Coasts. The Belgrade Forest appeared to have similar popularity across all age groups. In general, individuals younger than 24 appeared to visit the Old Historical Peninsula more often (with 18.3%) followed by the Marmara Sea Coasts, than other recreational areas.

As for the occupational status of the respondents, over half of the Bosphorus, and Old Historical Peninsula visitors consisted of students. A large percentage of Marmara Coasts and Princess Islands visitors were also students (with 46.4% and 44.7%, respectively). Employed respondents made up the next group visiting those five recreational areas frequently. The Belgrade Forests and Black Sea Coasts were reported to be visited by a greater percentage of employed respondents than other groups. We are addressing some of the possible reasons for these findings in the discussion.





**Figure 2.** The Most Frequently Visited Recreational Areas by Respondent's Occupation and Age in Percentages



### **Frequency of Recreational Area Visits**

Frequencies of recreational area visits in percentages are shown on the first panel of Table 1. The Bosphorus appeared to be the most frequently visited recreational area as about 58.5% of respondents reported to visit there once a week or more often. About 46.7% of the Historical Peninsula visitors and 43.5% of the Marmara Sea Coast visitors visited the area once a week or more often. The Princes Islands and Black Sea Coasts, followed by the Belgrade Forest, were the least frequently visited areas. 86.9% of the respondents visiting the Princes Islands, 82.6% of those visiting the Black Sea Coasts, and 60.9% of respondents visiting the Belgrade Forests made their visits once a month or less.

### **Travel Time**

As seen in the second panel of Table 1, between 65% and 79% of the respondents reported traveling between 30 minutes to 2 hours to arrive at their most frequently visited recreational area. The Bosphorus area was within less than 30 minutes travel distance for about one-fifth of the respondents. Arriving at the Bosphorus, the Marmara Sea Coasts, and the Historical Peninsula took less than two hours for more than 90% of the respondents, with the majority taking less than 60 minutes. Going to the Princes Islands and Black Sea Coasts took an hour or longer for about 81.6% and 60.8%, respectively, and at least 30 minutes or more for 95%. Similarly, 88% of the respondents reported spending 30 minutes or longer to go to the Belgrade Forest.

### **Length of Stays**

The third panel of Table 1 presents the percentages for the length of stay at each recreational area. It seemed that the great majority of the respondents (92% - 100%) tended to spend more than 1 hour at their most frequently visited recreational areas on their typical visits. Specifically, 91.3% of Black Sea Coast visits, 86.7% of Princes Islands visits, 81.7% of the Historical Peninsula visits, and 73.1% of the Belgrade Forest visits lasted three or more hours. Particularly, 78.9% of the Princes Islands visits, 60.9% of the Black Sea Coast, and 58.5% of the Belgrade Forest visits lasted more than five hours. 47.1% of the Bosphorus visits lasted two hours or less.

**Table 1.** Recreational Area Use Variables in Percentages

<b>Recreation Areas</b>	<b>Bosphorus</b>	<b>Marmara Sea Coast</b>	<b>Historical Peninsula</b>	<b>Black Sea Coast</b>	<b>Princes Islands</b>	<b>Belgrade Forest</b>
<b>Visit Frequencies</b>						
2-3 times a week	23.2	14.5	15	0.0	7.9	7.3
Once a week	35.3	29.0	31.7	17.4	5.3	31.8
Once a month	28.5	34.8	35	47.8	39.5	32.2
Seldom	13	21.7	18.3	34.8	47.4	28.7
<b>Travel Time</b>						
< 30 min	21.7	17.6	16.7	4.3	5.3	12.2
30 - 60 min	35.7	35.3	43.3	34.8	13.2	39
1- 2 h	34.8	36.8	33.3	30.4	55.3	36.6
>2 h	7.7	9.3	6.7	30.4	26.3	12.2
<b>Visit Durations</b>						
< 1 h	7.3	2.9	5	4.3	0	2.4
1-2 h	39.8	29	13.3	4.3	13.2	24.4
3-5 h	15	21.7	31.7	30.4	7.9	14.6
> 5 h	37.9	46.4	50	60.9	78.9	58.5
<b>Primary Criterion</b>						
Close to Home	23.4	15.9	25.9	8.7	7.9	14.6
Transportation	11.2	21.7	22.4	4.3	7.9	12.2
Beauty of Nature	50.2	50.7	22.4	78.3	71.1	58.5
Sports	4.4	1.4	1.7	0	2.6	9.8
Other	10.7	10.1	27.6	8.7	10.5	4.9
<b>Types of Activities</b>						
Leisurely Walking	40.4	29	38.3	13	34.2	41.5
Looking Around	25.0	27.5	23.3	8.7	15.8	12.2
Meeting w/ Others	25.5	21.7	30	65.2	23.7	7.3
Grilling	2.9	8.7	1.7	8.7	10.5	31.7
Doing Sports	1.9	4.3	0	0	7.9	7.3
Fishing	1.0	2.9	3.3	0	2.6	0
Other	3.4	5.8	3.3	4.3	5.3	0

### **Primary Criterion for Using the Recreational Area**

The fourth panel of Table 1 includes percentages for respondents' primary criterion to visit the recreational area. Overall, the predominant reason for selecting a recreational area to visit was its *beauty of nature*. The second criterion was the closeness of the recreational area to one's home. Specifically, *beauty of nature* was the main reason for 78.3% of the Black Sea Coast's visitors, and 71.1% of the Princes Islands visitors. *Beauty of nature*, *close distance to home*, and *convenient transportation* seemed to be similarly important for the Historical Peninsula visitors. Doing sports was the primary reason for only a small percent of respondents.

### **Activities in the Recreational Area**

As seen in the last panel of Table 1, the Black Sea Coasts were primarily visited for meeting with others (by 65.2%). The most preferred activity amongst visitors of the Bosphorus (40.4%), the Historical Peninsula (38.3%), and the Princes Islands (34.2%) was leisurely walking. The Belgrade Forest visitors were mostly engaged in leisurely walking and grilling (41.5% and 31.7%). Almost equal percentages of the Marmara Sea Coast's visitors were engaged in leisurely walking, meeting with others, and watching around.

## **Discussion**

This research examined the recreational area usage in Istanbul. Most of the respondents reported that the Bosphorus is the most frequently visited area, followed by the Marmara Sea Coasts. In general, the Bosphorus is very popular among residents of Istanbul being the favourite place for people to rest, recreate, and engage in social activities. The Bosphorus and the Marmara Sea coast areas are rich in amenities and services. They have walking paths, restaurants, cafés, benches, picnic tables, and playgrounds. Also, these areas offer their visitors opportunities to enjoy nature and look out at the sea and reflect. Thus, these regions combine a variety of features that serve multiple purposes and allow visitors to fulfill several recreational needs simultaneously.

Another important reason for the Bosphorus and the Marmara Sea coast to be more popular is their location. The city centre has been settled along the Bosphorus and Marmara Sea coast and these areas are just in the midst of the city with convenient public transportation opportunities, including traveling bus, tram, subway, or ferry - traveling by these means can also be a leisurely activity by itself. In contrast, the Black Sea Coasts and Princess Islands were visited least frequently as these two areas are peripheral to the city and have limited public transportation opportunities. Arriving at the Princes Islands, for example, takes about an hour from the city centre in addition to the travel time from home to the city centre (Yiğit & Hayir-Kanat, 2017). Furthermore, the only means of-transportation to the island is by ferry.

Our results also showed that the frequency of visits depends on the accessibility of the recreational area, including the proximity to residential areas and the convenience of transportation. For example, the majority of the visits to recreational areas with convenient transportation and with relatively close distance to the city centre (e.g. Bosphorus, Marmara Sea Coast, and Historical Peninsula) appeared to occur once a week or more often. The majority of visits to recreational areas located further from the city centre or residential areas and with more limited public transportation (Princes Islands, Belgrade Forest, and Black Sea Coast) tended to be visited once a month or less often. Thus, our results are in agreement with the existing research and indicate that the proximity of- and access to the recreational area to one's home is a strong predictor of the area's demand and frequency of use (Cohen et al., 2007; B. Giles-Corti et al., 2005; Grahn & Stigsdotter, 2003; McCormack et al., 2010; Schipperijn et al., 2010).

While we make such conclusions based on our knowledge about the access and distance to the studied recreational areas, distance to home was cited as the second reason to choose the area when the respondents were asked. Although the convenience of transportation and distance to residential areas or the city centre were not mentioned very often as a reason when selecting a recreational area, they may actually both be important factors. One reason for respondents not to prioritize the travel time or convenience of transportation would be the mindset of many living in Istanbul: "Wherever they go, particularly to a place that will satisfy their recreational needs would take at least an hour or so". Based on our data the travel time to recreational areas is between 30 minutes to 2 hours for the great majority of the respondents. Therefore, respondents probably undervalue the importance of travel time and distance due to this particular reality of Istanbul.

On the other hand, when individuals were asked their primary criterion when selecting a recreational area, we found that the beauty of nature appeared to be a more important criterion than any other features of the recreational area. These results are consistent with several research studies on large recreational areas in urbanized environments

(Boll et al., 2014; Jim & Chen, 2006 ; Sezer & Akova, 2016; Shanahan et al., 2015; Zwierzchowska et al., 2018) and indicate that beauty of nature is valued more than any other features of recreational areas, including the travel distance. The studies have also shown that individuals who value nature are willing to travel longer distances (Shanahan et al., 2015; Zwierzchowska et al., 2018). In fact, we found similar results in that recreational areas farther from the city centre and with longer travel time seem to be valued for their beauty of nature, yet are visited less frequently. In general, recreational-areas with close proximity to the city centre or residential areas and with convenient transportation (e.g., Bosphorus and Marmara Sea Coasts), are visited more frequently (once a week or more often), for a period of two hours or shorter, and primarily for leisurely walking than those with farther distance and limited public transportation (e.g., Black Sea coast, Lakes, Belgrade Forest, and Islands). These results along with results of previous studies e.g. (Bjork et al., 2008; Cohen et al., 2007; McCormack et al., 2010; Schipperijn et al., 2010; Silva et al., 2018) are important in providing insights in terms of how recreational area use variables function when they coexist.

Available amenities and features of recreational areas and varying distance to the city centre and homes appeal to people of different age groups and occupational status and relate to the frequency, length, and reasons of their use. These overall findings are in agreement with previous studies (Bedimo-Rung et al., 2005; McCormack et al., 2010; Silva et al., 2018; Van Herzele, 2003). For example, the Bosphorus, Marmara Sea coast, Historical Peninsula, and Princes Islands are preferred predominantly by 25-34 year-olds and students.

This research evidences that leisurely walking, looking around, and meeting with others at recreational areas are the most frequently engaged activities. This demonstrates the need to consider how those areas could be improved to encourage doing sports, swimming, and nature observation or other types of activities. Also, although the results provide some evidence that age and occupational status may have an influence on area preference and usage, other cultural and personal differences among individuals, rather than characteristics of recreational areas themselves, may influence usage. This might be a topic for future research.

It should be noted that the interviews for this research were conducted not necessarily at the recreational area respondents primarily use. More specific results in terms of types of activities, satisfaction with amenities, or general use frequency and length and transportation to the area would be obtained if the surveys were conducted directly at the recreation site. Also, those results are based on respondents' self-reports; not on observations. Thus, it is possible that the responses are more general and based on associations and judgements.

This research investigated why and how six major recreational area regions in and around Istanbul are used. Recreational areas located around the city centre with convenient transportation and combined opportunities for a variety of activities to full fill multiple recreational needs are more likely to be used. Specifically, recreational areas in the Bosphorus and along the Marmara Sea coast are the most frequently visited areas. The beauty of nature, associated with the ocean view, is the primary driving reason for recreational area visits in Istanbul. Most of the visitors are primarily engaged in leisurely walking, visit the recreational areas at least once a week, travel between 30 minutes and 2 hours to get there and spend at least three hours in the area. Furthermore, individuals tend to spend more time at the recreational area and visit the recreational area less frequently, if they also require longer travel time. Nonetheless, although the recreational areas near by the city centre are visited more frequently, there are still variations in frequency and length of their use. The present results highlight the need to better understand which characteristics of recreational areas increase quality, quantity, and scope of their usage by diverse age and occupational groups.

Natural recreational areas in Istanbul are located on the beaches and forest areas. Those who live in places where the population is dense and where the green area per capita is less than 1 m<sup>2</sup> cannot easily access these areas. Natural regression areas that more people can use should be created within the residential areas. Because the frequency of using these areas decreases as people get longer (Parks, 2020). The plateau structure of Istanbul can offer the possibilities of regrowing dried river valleys for this purpose.

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Conceptualization, M.H.-K. and J.B.; data curation, M.H.-K.; formal analysis M.H.-K. and J.B.; investigation, M.H.-K. and J.B.; methodology, M.H.-K. and J.B.; project administration, M.H.-K. and J.B.; supervision M.H.-K. and J.B.; visualization M.H.; writing-original draft, M.H.-K.; writing-review and editing, M.H.-K. and J.B.

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