RESEARCH ARTICLE

Use of green area of Kastamonu: Case study of Clock Tower

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Abstract: The aim of this study is to show which areas mainly preferred when the people want to carry out recreational activities in the Kastamonu city center and determine the appropriateness of this area for recreative activity. A questionnaire study was conducted with 100 randomly selected people in order to determine the most frequently used open green area in terms of recreational activity in Kastamonu and the results showed that 89% of the participants prefer the Clock Tower. Thus Clock Tower was determined as a research area in this study. It is revealed the current state of the Clock Tower in scope of the study: plants are used in this area and the purpose of use of these plants is determined and how frequently users use this area and the reasons for not frequent use. In addition, activities that are effected in the area and changes in mood after using the area. The second survey study was conducted on users of the area consisting of 118 people. It is revealed space features existing at Clock Tower and events area identified after that space features that users want to be in this area and events areas. Thus, the aim of the area is to determine the users' expectations and the deficiencies and problems in this area.

***Keywords*:** Clock Tower; Recreation; Use of Urban Green Area; Preference; Activity

1. Introduction

It is projected that nearly 70% of the global population will be living in urban areas by 2050[1]. This rapid urbanization has caused the disappearance of naturalness in the urban environment and the proportion of open green spaces in the cities has been extremely reduced. The intensive living conditions in urban have a very serious negative effect on the stress level of people. The positive effects of open green areas on human are known by everyone. However urban green spaces are important for urban residents' well-being, especially in these dense urban areas[2]. Urban dwellers have become aggressive, miserable and introvert by losing their natural behaviors as a result of separation of human beings from their natural environment and atrophy of their sense of belonging to nature. On the other hand, watching nature and active or passive intertwining with it or its parts reduce the daily stress of urban life[3].

Urban open green areas create a more healthy, balanced, refreshing and useful environment for residents[4]. In addition, these areas play a relaxing and restful role on people and help to escape from the noise, crowd, dust of the city[5]. Preventing visual pollution in city enables human beings to live in a beautiful landscape, relax spiritually and establish sincere love for all living creatures and non-living things as well as their environments[6]. There are many studies showing the relationship between natural green space and human health[7–10]. Some research reveals the ecological benefits[11], recreational benefits[12], psychological benefits[13–16], environmental benefits[17], and economic benefits[18] of open green spaces.

When the people want to carry out recreational activities in the Kastamonu city center, the most preferred clock tower's suitability for recreative activity, activities performed in this area and changes in mood after using the area are

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shown with the help of this study. In addition, it is revealed space features and activity areas existing at Clock Tower and it is determined the users' expectations and the deficiencies and problems in this area.

2. Materials and Methods

The study was carried out in the city of Kastamonu in Turkey (**Figure 1**). The city is located in a forested area, but the city center exhibits intensive construction characteristics and green area ratio is very low. People's need for recreational activities is mostly solved in urban parks and city squares. In this study, 100 randomly selected people living in the city were asked “Where do you prefer to go when you want to carry out recreational activities?” in order to determine the study area. Clock Tower (89%) is the most preferred open green area according to the answers given.

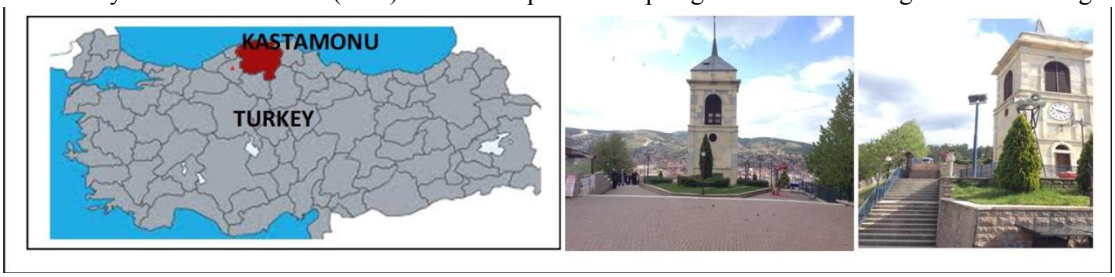

Figure 1; Study area**.**

Clock Tower: The park has an area of 5140 m². It contains many activity areas to create visual diversity. The Clock Tower, which constitutes the city's landmark, is located in the area in addition to the children's playground, cafeteria, sitting places, eating and drinking places, sports area with physical exercise equipment, observation terrace providing the opportunity of overlooking Kastamonu, and particularly, the old residential areas, two fixed binoculars placed in two different points for detailed observation of the beautiful view of the city and resting places. The park is 600m away from the city center and it can be easily reached both by car and on foot. One of the park's two entrances provides access to the area through stairs while the other entrance allows access by car. A total of 65 woody taxa including 14 different plant species were identified in Clock Tower. The species most commonly used in the area are Biota orientalis (14 pcs) and Cupressus arizonica (11 pcs)[19]. The properties of the plants used in this field and their intended uses are given in Table 1.

Plant Properties	%	Intended Functional Uses of the Plants	Yes/No
Evergreen	52.3	Classification	+
Deciduous	47.7	Guidance	+
Prunable	0	Solitary	+
Fall Colors	29.4	Accent	+
Flower Beauty	38.5	Focusing	-
Fruit Beauty	23.5	Separation	+
Color Beauty	2.9	Combination	-
Leaf Beauty	35.3	Visual control	+
Natural species	43.1	Vista formation	+
Exotic Species	57.9	Place softening	-
		Background formation	-
		Shelterbelt	+

Table 1. Properties and intended uses of the plants used in Clock Tower

Survey studies were carried out with 118 user in order to determine the usage possibilities of the clock tower and to be able to demonstrate the effect on user and to be able to respond to user requests. The survey consists of six sections. The first section shows the participants' demographic structure; the second section shows how often they use this area and how much time they spend there; the third section shows the reasons for not going to these areas frequently; the fourth section shows the activities carried out in this area; the fifth section shows changes in the mood

after having spent time in this area; and the sixth and last section shows the garden properties that create positive mood for users and the other garden properties desired by the users.

3. Results

3.1 Demographic profile

Demographic profiles of the respondents (118 person) are summarized in Table 2. Majority of the respondents were female, 20-25 years old, university students with an income level of up to about 1000 TL.

Demographic Profile		**n**	**%**	**Demographic Profile**		**n**	**%**
Gender	Female	64	54.2	Profession	Student	81	68.6
	Male	54	45.8		Teacher	7	5.9
Age	15-20	39	33.1		Academician	2	1.7
	20-25	50	42.4		Self-employed	20	16.9
	25-30	7	5.9		Unemployed	3	2.5
	30-35	9	7.6		Police	1	0.8
	35-	13	11		Doctor	2	1.7
Educational Status	Primary education	10	8.5		Pensioner	2	1.7
	High school	33	28.0	Income Status	-1000	71	60.2
	University	67	56.8		1000-1500	17	14.4
	Postgraduate	8	6.8		1500-2000	7	5.9
					2000-	23	19.5

Table 2. Demographic profile of the respondents

3.2 Usege of Clock Tower

In the study, a survey study was utilized once again for determination of the positive changes in the users' moods during and following use of the Clock Tower. According to the results, users visited the Clock Tower approximately once a month and they spend about 1-1.5 hours here. In line with these results, it was revealed that the users do not frequently visit Clock Tower and that they do not spend long times in this area. When the reasons for infrequent use of Clock Tower were investigated, the users stated that they did not frequently visit the open-green areas mostly due to lack of time (66%), none attractiveness of this area (49%) and low-quality of the area (33%) (Table 3). When the effects of the duration of their stay in this area on the positive changes in their moods were investigated by Chi Square Analysis, statistically significant differences were determined between the changes occurring in users' moods depending on the duration of their stay in the Clock Tower ($p<0,05$). Table 3 shows the activities performed by the users in the Clock Tower and the changes in their mood afterwards. It was determined that users mainly perform observation (78%), sitting (74%) and chatting (60%) activities in the Clock Tower. The respondents stated that after going to this area, they felt rested and relieved (56%), away from troubles and sorrows (44%) and calmed down (39%).

Reasons for not being able to visit frequently	**n**	**%**	**Activities carried out**	**n**	**%**
Lack of time	**78**	**66,1**	Sitting	87	73,7
Distance	38	32,2	Watching	92	78
Unsafe parks	19	16,1	Chatting	71	60,2
Getting the disease	6	5,1	Stroll	41	34,7
Not nice and quality open-green areas	39	33,1	Walking	18	15,3
Deserted open-green areas	13	11	Doing Sports	12	10,2
Not catching attention	58	49,2	Eating and drinking	63	53,4
Changes in their moods	n	%	Sun bathing-resting in the shade	34	28,8
Rested-relieved	**55**	**55,9**	Reading	20	16,9
Getting away from troubles and sorrows	52	44,1	Listening to music	42	35,6

Calming down	46	39
Positive thinking	34	28,8
Finding Peace	42	35,6
Feeling safe	10	8,5
Being cheerful	42	35,6
Feeling change	8	6,8

Table 3. The reasons of why the Clock Tower is not visited frequently, the activities performed in Clock Tower and the changes in the users' moods that occur after using this area

3.3 The available and the desired spatial features in Clock Tower

In this part of the survey, the users were requested to evaluate the spatial characteristics of the Clock Tower. Table 4 shows the percentage of the available and desired space properties and activity in the Clock Tower. The results obtained from the evaluations made by the users were presented also in percentages (%) and the differences of these values were taken into account to determine if the expectations of the users were met or not and the deficiencies in this area. Desired space properties and activity in the Clock Tower. According to the order of priority, desired space features and activity areas can be summarized as follows; plant composition (67.8%), attractive design (67.8%), flowers-color (60.2%), allowing for different activities (60.2%), variety of colors and textures (56%), being intertwined with nature (54.3%), opportunity to walk uninterruptedly (47.4%), opportunity to connect with the natural environment (46.6%), trees and greens (44.1%) and opportunity to hear natural sounds (water, wind, birds..).

Spatial Features in the Area	**Available (%)**	**Desired (%)**	**Difference (%)**	**Ranking**
Opportunity to socialize	78	99,2	21,2	
Opportunity to be alone	62,7	93,2	30,5	
Allowing for different activities	33,9	94,1	**60,2**	3
Opportunity to stroll	49,2	83,9	34,7	
Opportunity to do exercise	30,5	64,4	33,9	
Opportunity to connect with the natural environment	46,6	93,2	**46,6**	8
Opportunity to hear natural sounds (water, wind, birds..)	50,8	92,4	41,6	10
Availability of sunny and shady places	75,4	98,3	22,9	
Opportunity to watch people and nature	84,7	97,5	12,8	
Opportunity to eat and drink freely and comfortably	76,3	99,2	22,9	
Opportunity to walk uninterruptedly	26,3	73,7	**47,4**	7
Wildlife	18,6	59,3	40,7	
Being intertwined with nature	38,1	92,4	**54,3**	6
Fresh air	75,4	97,5	22,1	
Variety of colors and textures	38,1	94,1	**56**	5
Getting away from the city noise	72,9	99,2	26,3	
Water element (still/running)	37,3	72,9	35,6	
Trees and greens	55,1	99,2	**44,1**	9
Landscape beauty	91,5	99,2	7,7	
Plant composition	23,7	91,5	**67,8**	1
Attractive design	30,5	98,3	**67,8**	1
Flowers - color	32,2	92,4	**60,2**	3
Fountain	50	71,2	21,2	

Table 4. Place properties and activity areas available and desired in the Clock Tower

4. Discussion and Conclusion

The most commonly used open green area in Kastamonu in terms of recreational activity was determined with the help of this work. The positive and negative aspects of the Clock Tower as well as their therapeutic contributions to the users were revealed in this study. Suitability for recreative activity for the open-green area was determined. It was determined that users mainly perform observation, sitting and chatting activities in the Clock Tower. Positive relationship were determined between the positive changes occurring in users' moods and the duration of their stay in the Clock Tower. After going to this area, users felt rested and relieved, away from troubles as well as sorrows and calmed down.

When the negative aspects of the Clock Tower in terms of place properties and activity areas are examined, the outstanding features are more natural field properties and activities such as, more greens, flowers and plants, plant composition, allowing for different natural activities, variety of colors and textures, opportunity to connect with the natural environment, and opportunity to hear natural sounds (water, wind, birds.).

Considering open-green areas from therapeutic aspect and improving their negative features are extremely important in terms of urban health, and it could be expected that positive effects on the mental health of the people using these areas would follow after these considerations. It is not easy to design an area as a therapeutic open area unit. In order to make this happen, many disciplines (anthropology, landscape architecture, medicine, environmental psychology, horticulture) need to collaborate. Therapeutic areas giving power to people should contain place diversity and green-intensive feature. Providing diversity in the area provides the user with the chance to choose and encourages him/her to use the area. This kind of area lowers the level of stress as it increases the sense of self-guidance. While these types of open-green areas provide activity diversity, it is necessary to pay attention to use of sensuous elements. When doing this, using natural elements and minimizing artificiality make positive contributions to the therapeutic effect of the area. Areas used by individuals must accommodate staying alone and thinking to empower the individual to get rid of his/her problems by means of environmental factors while areas particularly designed for common use shall provide an opportunity for socialization.

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