



Visibility Analysis in Historical Environments: The case of Kastamonu Castle and its Surrounding

Sevgi ÖZTÜRK¹, Öznur İŞINKARALAR² & Elif AYAN³

Keywords

Visibility Analysis,
Visual Quality,
Kastamonu Castle.

Abstract

Historical environments are under pressure of extinction because of rapid urbanization. These places are important heritage for the present and the future generations. As a cultural heritage element, historical environments contribute to the identity of the urban area and have positive effects on the economic, social and tourism aspects of the city. Today, various laws with the concept of protection- utilization balance evaluate the historical environments, which attract the attention of many local and foreign tourists. Kastamonu City, which has been home to many civilizations, varies in terms of historical monuments. The Kastamonu Castle and its surroundings are important symbols in the city that developed in the east and west direction along Karaçomak River, a branch of Gökırmak River. The pedestrian paths along the stream axis offer people a variety of images both functional and aesthetically. Within the scope of this study, the visibility of the historic houses around Kastamonu Castle and the city centre via the main pedestrian road in the north-south direction were examined. In the study, photographs were taken along the footpath and the new structures and historical texture are covered the on the photographs with the help of Adobe Photoshop Programme. At the same time, the best visible points were determined on the map. In conclusion, due to the fact that historical environments are an important element in terms of city identity, these areas should be considered as a whole and new constructions should be allowed to be paying attention to not restricting their visibility.

Article History

Received
8 Nov, 2018
Accepted
30 Dec, 2018

1. Introduction

Recently, the rate of urbanization has increased and urban rent has been seen to be considered as more important than ecological and historical elements. As a result of the strong relationship between tourism and the environment, environmental, natural and cultural characteristics are all attractive for tourism (Bayer, 1990) especially in cases where these components have tourism potential, the management of visual perception becomes very important. The concept of visual

¹ Corresponding Author. Doç.Dr., Kastamonu Üniversitesi, Mühendislik Mimarlık Fakültesi, Peyzaj Mimarlığı Bölümü, sozturk@kastamonu.edu.tr

² Arş. Gör., Kastamonu Üniversitesi, Mühendislik Mimarlık Fakültesi, Şehir ve Bölge Planlama Bölümü, obulan@kastamonu.edu.tr

³ Arş. Gör., Kastamonu Üniversitesi, Mühendislik Mimarlık Fakültesi, Peyzaj Mimarlığı Bölümü, eayan@kastamonu.edu.tr

perception is frequently used in literature as a criterion in many studies related to its impact on tastes and recreational preferences, field use and resource management decision processes. (Clay ve Daniel, 2000; Tüfekçioğlu Kuğu, 2008; Çağlayan Kaptanoğlu, 2008; Uzun ve Müderrisoğlu, 2011; Caf, 2014; Kiper, Korkut ve Topal, 2017). Increased interest in the assessment of visual perception and quality has led to the development of evaluation systems with many different scopes and methods. Wu et al. (2006), discussed the relationship between the natural structure of the road routes and the perceived visual landscape quality., Benliay and Soydan (2015) has measured the visual landscape quality of historical sites in cycling routes, Huang (2014) has developed spatial recommendations using survey-based intuition-based analysis (Asur and Alphan, 2017). It is seen that historical circles in visual perception and quality make a positive contribution to urban image (Kalın ve Yılmaz 2012; Alpak et. al, 2016; Düzenli et al., 2018).

In this context, the aim of this study is to determine the visual quality and visibility of Kastamonu Fortress and its surroundings, which is one of the important landmark points of the city, which develops in the east and west along the Karaçomak River -a branch of the Gökırmak River-. The city of Kastamonu is the “Cultural Capital of the Turkish World” in 2018 and the vision of becoming the capital of the Turkic World constitutes the vision. Therefore, it is also important to choose the Kastamonu Castle as an important attraction point.

2. Materials and methods

The study was carried out in Kastamonu City in Western Black Sea Region of Turkey. Many subjects have been studied about Kastamonu, which is known for its unique and original identity with its natural and historical components. (Aricak, 2002; Varol and Gürel, 2005; Cetin, Sevik and Isinkaralar, 2017; Belkayalı and Ayan, 2017; Ozturk, Isinkaralar and Kalayci, 2018). Within the scope of the study, Kastamonu Castle, which can be defined as a vista in the city entrance of Kastamonu, was investigated with its main pedestrian path in north-south direction due to the building around the city center (Figure 1).

Figure 1. Locations of photo shooting points



The study was carried out in 3 stages. The castle was photographed until the first disappeared along the axes.. In different visible regions of the image, the photographic survey based scene capturing methodology was used to analyze visibility (Kalın ve Yılmaz, 2012).

3. Findings

According to the visibility analysis performed on the selected photos, points 1 and 3 were determined as medium, 6 and 7 as low visibility areas. Photo points 2, 4, 5, 8 and 9 are defined as areas where the castle appears to be good. It was determined that new structures negatively affect visibility in areas with low visibility. (Figure 2).

Figure 2. Visibility analysis based on photos



The demographic characteristics of the participants are given in Table 1. 53% of them are women and 47% of them are men. 34% of the participants live in Ankara and 32% live in Kastamonu. The majority of them are in the middle income group (1001-3000 TL) and prefer the area because of the historical quality (65%) mostly.

Table 1. Demographic structure of the participants

Gender	Female	106	53
	Men	94	47
Home City	Kastamonu	61	32
	İstanbul	6	3
	Ankara	68	34
	Other	62	31
Income Status	Lower than1000 TL	54	27
	1001-2000 TL	66	33
	2001-3000 TL	60	30
	Higher than 3001 TL	20	10
Reasons to Prefer the Area	Historically	130	65
	Social Activities	46	23
	Reliability	24	12

The average of all responses given as a result of the evaluation in the area was found to be 2.39. *Reliability, Material of Reinforcement Elements, Maintenance, Plant Diversity, Plant Color Variety, Plant Location and Plant Adequacy* are below the average. It was determined that all plant based criteria were below the average and plant diversity and adequacy (1.8) was the lowest. Historicity (3,45) and landscape (3,34) elements stand out compared to other criteria (Table 2).

Table 2. Compared Criterias

Criteria	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Avg
Environmental Compliance	8	56	20	12	4	2,48
Reliability	31	41	25	3	0	2,00
Historicity	0	32	22	15	31	3,45
Reinforcement Material	32	37	28	3	0	2,02
View	0	24	32	30	14	3,34
Plant Diversity	48	31	13	4	4	1,85
Plant Color Variety	40	32	20	4	4	2,00
Castle Walls	0	30	58	8	4	2,86
Land Mobility	24	21	34	13	8	2,60
well-groomed	24	53	18	5	0	2,04
Location of Plants	28	32	28	12	0	2,24
Plant Competence	48	25	23	4	0	1,83

According to the views of the visitors from both the province and the different geographical regions, it is observed that the presence of the plant in the urban areas is insufficient, although 80% of it is covered with forests.

4. Results

The research is of great importance for the evaluation of Kastamonu Castle, which is one of the main landmark points of Kastamonu in terms of visibility and visual quality. The most visible spots along the axis passing through the city center were identified. For the Hagia Sophia museum, which is an important landmark point of Trabzon city, Kalın and Yılmaz (2012) have made a positive impression on aesthetics with the sense of depth that the plant existence has an important effect on visual impact. Similarly, in this study, the low visual impact of the castle is due to inadequate green tissue in the area. Errors made regarding the floor heights in the unplanned construction plan decisions made within the urban site boundary along the main pedestrian path of the city cause the castle to be partially visible only from certain points. Looking at the results of visibility analysis;

The number 2 photo shoot is Republic Square, which is one of the most important places in the city center and the city. With a wide perspective, it is seen that the castle cannot be seen as a whole with the historical texture around it and as a result, the visual quality of the area is low. In the study conducted by Öztürk and Ayan (2017), the visual quality of the general view of the area is higher when the users are questioned. This is the high-rise buildings along the street, which block the appearance of the castle at the pedestrian path. Looking at the photographs taken from the 4, 5, 8 and 9 areas, it is seen that the city is gradually getting away from the center and the construction has spread towards the inner parts and the floor heights are low.

on the ecological and historical conditions, design approaches should be developed especially for these points. Besides, the existing vegetation variety is perceived with the castle and its surroundings. being perceived from these points positively affects the visual quality of the castle. For this purpose, in order for the fortress to be more prominent, it is possible to increase the emphasis of the castle and the plants that will take a linear frame to include evergreen plants in order to shield today's buildings other areas, the denseness of the castle, which affects the castle's visibility and the height of the floor negatively affect the castle's perception of users. The fact that plant existence and vegetative diversity cannot be seen, and the mismatches with the historical structures in the constructions negatively affect the area.

The historical structures in the citadel, which is an archaeological site within the boundaries of the urban site, are very important for the urban identity of Kastamonu. Increasing faith and cultural tourism contribute to the development of the city. It is important for the visitors to be able to perceive the important landmark points of the city as a whole along the main axis in the city center and to increase the visual quality of these areas. For the castle, which is visible with the historical texture around the pedestrian path, it will be a positive contribution to the city's image. It is considered that it is important to consider user views in quality assessment in terms of urban design and landscape design.

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