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Original Paper

Preferences of University Academic Staff for Their Surrounding Environment: Uludag University as a Case Study

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Abstract

As a result of the damage to natural areas, open and green spaces in cities shrink in area and even disappear. This has caused an increase in the number of studies concerned with human-nature relations in urban landscaping. Contrary to the fact that the major part of our lives is spent in our workplaces, there are not many studies that investigate human-nature relations in workspaces. However, workspaces cover big areas of the urban landscape, their arrangement is of major importance in both an ecological and economical sense. The present study aims to shed light on how the academic staffs working at the Uludağ University campus perceive the nature that surrounds their workspace and what their expectations concerning their natural surroundings are. Although the employees wish to see arranged landscapes surrounding their workplace, they significantly prefer naturally arranged spaces. It is evident that the staffs are concerned about the surroundings of the buildings they work in and that they make correct assumptions about and descriptions of the surroundings of their buildings.

Keywords

Natural landscape, Manicured landscape, Workplace, Preference, Building

1. Introduction

The change in the relationship between human and nature throughout time has continually affected the ways of designing physical environments. The initial disadvantage of human in their relations with

nature has moved towards first equality and then superiority. In the meantime, this change in human-nature relations has caused important impacts on the arrangement of the surrounding natural environment.

The problems in human-nature relations have caused the disappearance of nature from the daily lives of human beings (Özgüner, 2003). The phenomenon of "the disappearance of nature from the daily lives of human beings" has been previously experienced in urban environments. Therefore, a major point of focus of studies that investigate the relationships between humans and nature has been the perception of nature within cities. However, there are also studies that have investigated the perceptions of nature in rural areas as well. Misgav (2000) has questioned the preferences for natural and planned vegetation in rural areas, and Akbar et al. (2003) have investigated the preferred plant groups and rates of preference for a natural appearance in the landscaping around highways that pass through rural areas.

A major portion of the publications regarding human-nature relations in urban landscapes consider the perceptions of the natural environment that surrounds housing areas. Abu-Gazzeh (1996) stated that quality of the natural environment is important in the design of open spaces and that the most desired view of outside spaces is that of natural vegetation and trees. Crow et al. (2006) have found that the nature of the environment that surrounds housing areas affects the satisfaction and comfort of the occupants. Austin (2004) has determined that seeing natural spaces and easily reaching such places pleases the users, Jackle (1987), stated that characteristics of vegetation impart caracter to urban place.

One other related study has investigated the green characteristics of roads. According to Tan (2006), green roads have a great potential for the preservation of nature and for providing opportunities for recreation, and the users welcome this potential. According to Shafer et al. (2000), the presence of green roads positively affects the quality of life in cities. Additionally, it has been stated that trees are the most preferred plant group for the vegetation that surrounds roads and housing areas, and flowers are the other element that is widely preferred under the trees (Todorova et al., 2004).

Asakawa et al. (2004), Yamashita (2002), and Shauman and Salisbury (1998) have all conducted studies on the assessment of stream corridors in cities and their perception as a natural element.

On the other hand, upon the comparison of all such studies, it is seen that there are not many studies concerning the perception of the natural environment that surrounds the work areas that cover wide spaces of urban areas and in which people spend most of their daily lives. Kaplan (1993) has determined that the view from the office windows affects the satisfaction of the employees with their workplace and has shown that the use of natural vegetation in the areas surrounding the workplace produces effective results (Kaplan, 2007). In a study by Friedman et al. (2008), when monitors were placed on the walls of campus offices with no windows and live broadcasts of the green areas within the campus were displayed, it was seen that the employers came and watched the view from time to time and then concentrated on their work.

Studies about consideration of users idea on landscape aesthetic and preferences have started after 1960's. Landscape aesthetic was judged from it's formal quality such as line, color and form formerly.

But later, ecological diversity, integrity and intactness of the landscape have important factors in determining landscape aesthetic (Moulan, 2006).

Perception and preference theories reveal basic clues about space preferences of users. According to Appleton (1975)'s prospect and refuge theorie, human beings prefer landscapes that have prospect and refuge in order to ensure their genetic continuity. Gibson (1979) stated that people prefer landscapes that provide affordance to them. Orions (1980, 1986)'s savannah theorie based on people prefer savannah type landscapes because of evaluationary resasons. From the position of Kaplan and Kaplan (1989)'s information processing theorie, humans seek landscapes that can offer information about the world around them. From an evaluationary perspective this situation is important for their survival. People's preference for landscape can be explained by two ways: the content of the landscape, such as trees, mountains and water and the spatial organization of the landscape.

Humans spend the large part of their daily life in interior spaces. When they go outside they prefer to be the places that contact with interior spaces like build environments (Yıldız & Şener, 2006). Campus fields, by nature, are places where both natural and structured areas exist together. They are used for multiple purposes, and they are spread over wide areas of cities. The users (students, academic and administrative staff, etc.) spend a major part of their lives in the campus area; therefore, particularly from the point of view of the staff, it is important to evaluate the perceptions and preferences regarding the natural environment within the campus area.

The present study aims to investigate the preferences of academic staff who are working at Uludağ University, which has one of the largest campus areas in Turkey, for the natural environment that surrounds their workplace, from the point of view of both the students and employers.

2. Materials and Methods

2.1 Materials

The academic staff working at Uludag University Gorukle Campus constitutes the material of the present study. Uludağ University was established in 1970 in Bursa, the fourth most populous city in Turkey. Identity of Bursa was based on natural values formerly, but new planning decisions and overpopulation changed urban macroform. The city became textile and automotive center of Turkey. The campus is placed in the Gorukle, which is on the main development axis of the city. It is 18 km from the city centre, and it has 16,000 acre area. It includes Medicine, Economics, Engineering-Architecture, Veterinary, Agriculture, Science and Arts Faculties and a major part of the Education Faculty, Health Services Vocational School, Vocational School of Health, and Vocational School of Technical Sciences, Institutes, Department Offices and Rectorate Offices (Figure 1). There are 42,443 undergraduate, graduate and postgraduate students that are educated by 754 academic staff.

Figure 1. Uludağ University Campus (1. Education Faculty, Arts and Science Faculty Science Departments, Arts and Science Faculty Social Departments, Economics Faculty, Engineering and Architecture Faculty, Vocational School of Technical Sciences, Veterinary Faculty, Agriculture Faculty)

The dates of the establishment of the educational units in the campus differ, and there are defined and undefined landscape areas surrounding them. The features of the educational units are as follows:

Education Faculty was built in 1998. There is a landscape consisting of parking lots and pedestrian lanes in front of the building. At the back of the building, there are grassy fields and wooded tracts.

Science Departments Faculty of Arts and Science was built in 1979. It has a garden connecting the buildings that form the faculty and a small car park. There are trees behind the building.

Social Departments Arts and Science Faculty was built in 2007. There is a car park and landscape arrangement in front of the building. There are trees at the back of the building.

Economics Faculty was built in 1983. Around the building, the landscape consists mostly of big trees and shrubs that are surrounded mostly by areas of concrete.

Engineering and Architecture Faculty It was built in 1984. The Economics Faculty and the public transportation terminals are very close to this faculty. Therefore, there is heavy pedestrian and vehicle traffic in this section. The landscapes of the areas that surround the faculty buildings are different from each other.

Vocational School of Technical Sciences was built in 1996. The School provides training in a few buildings and the connections between the pedestrian lanes among the buildings are not well defined.

Veterinary Faculty was built in 1995. The landscape that surrounds the buildings consists mostly of trees and at the back of the buildings there is a wooded tract.

Agriculture Faculty was built in 1995. Among the buildings on the campus, it has the most defined surrounding environment. At the back of the department buildings, there are agricultural parcels for scientific studies.

2.2 Methods

The study was conducted with questionnaire forms that asked about the perceptions of the academic staff from different faculties at Uludağ University, concerning the nature of the environment that surrounds their office buildings. Questionnaire was administrated to eight faculty and main mass size is 506.

In this study, sample size was determined according to the formula as follows:

n = Nz2pq/Nd2 + z2pq

n: Sample size

N: Main mass size

z: Confidence coefficient

p: Likelihood of the characteristic we would like to measure in mass

q: 1-p

d: relative error (in the study it was 0.05 (% 5))

n = 506 × (1.96)2 × (0.6) × (0.4) / 506 × (0.05)2 + (1.96)2 × (0,2) × (0.8) = 213

Lower limit of the sample size is 213, sample size of the study is 226.

The questionnaire consists of three sections. On the cover of the questionnaire forms, the participants are given information about the aim of the study. In the first section, there are a few questions that aim to evaluate the qualifications of the sample group.

In the second section, the present situation is evaluated. Participants were asked about how they describe the current sceneries around buildings (grass, forest, agricultural area, landscaped area, wooded track, lawn) and satisfaction level of the present vegetation (grasses, trees, bushes and flowers). Likert scale was used the questions about the satisfaction level of existing vegetation.

In the third section, expectations about building environments determined. First question is, their wishes for any changes in the current environment. The second question is about the facilities that desired to be increased and if they could join the landscape activities. Lastly, participants were asked to choose their favourites from among 18 photos that were taken inside and outside the campus. This photos contain sceneries of parking lots, pedestrian lanes and sitting places which are existing around building traditionally. The photos that familiar to observer were preferred for use. Photos were taken in spring, summer and autumn. Questionnaire was administrted face to face. Informants were selected randomly from every faculty.

3. Results

3.1 Qualifications of the Sample Group

From the questionnaire forms, it is seen that 59.2% of the informants are female and 40.8% are male. The higher the academic status of participants declined participation rates. Of the respondents, 50% use their private cars to reach their workplace on the campus and 40% use public transportation. Eight percent of the academic staff reach the offices by walking (Table 1).

Table 1. Qualifications of the Sample Group

Variable	***Description***	***Distrubution***
Gender	Male	40,8
	Female	59,2
Title	Research assistant	28,9
	İnstructor	25
	Ass. professor	15,8
	Associate professor	19,7
	Proffesor	10,5
Transportation	Public transport	22,4
	Car	51,2
	Foot	8
	Service bus	18,4

3.2 Perception of the Surrounding Area

The perceptions of the survey respondents working at the different faculties ideas about the areas surrounding their workplaces were determined on an education unit scale. According to the findings, the descriptions of the current situation of the landscape surrounding the workplaces of the respondents are displayed in Table 2. Participants made true definitions about current situations. The areas have parking area and pedestrian lanes defined as landscaped.

Table 2. Descriptions of the Respondents about the Current Situation of Their Workplaces

Fakülteler	*Grass (%)*	*Forest (%)*	*Agricultural area (%)*	*Landscaped (%)*	*Wooded track (%)*	*Lawn (%)*
Education Faculty	33,3	11,1	-	11,1	44,5	-
Arts and Science Faculty Science Departments	-	12,5	-	-	87,5	-
Arts and Science Faculty Social Departments	-	-	-	66,6	33,4	-
Economics Faculty	-	-	-	33,4	66,6	-
Engineering and Architecture Faculty.	18,8	18,8	6,1	6,1	31,4	18,8
Vocational School of Technical Sciences	-	20	20	-	60,0	-
Veterinary Faculty	22,2	-	-	33,3	33,3	11,2
Agriculture Faculty	5,3	5,3	36,8	31,6	15,7	5,3

Current lawn area is mostly considered to be sufficent (Figure 2). The most satisfied faculty from amount of lawn is The Economics Faculty, the least satisfied one is The Education Faculty. This is because the surroundings of Education Faculty is covered with hard landscape. The tree rates above 50 percent are enough for almost all faculties. While the sufficiency about shrubs vary according to faculties the plant group that is evaluated most insufficient is flowers.

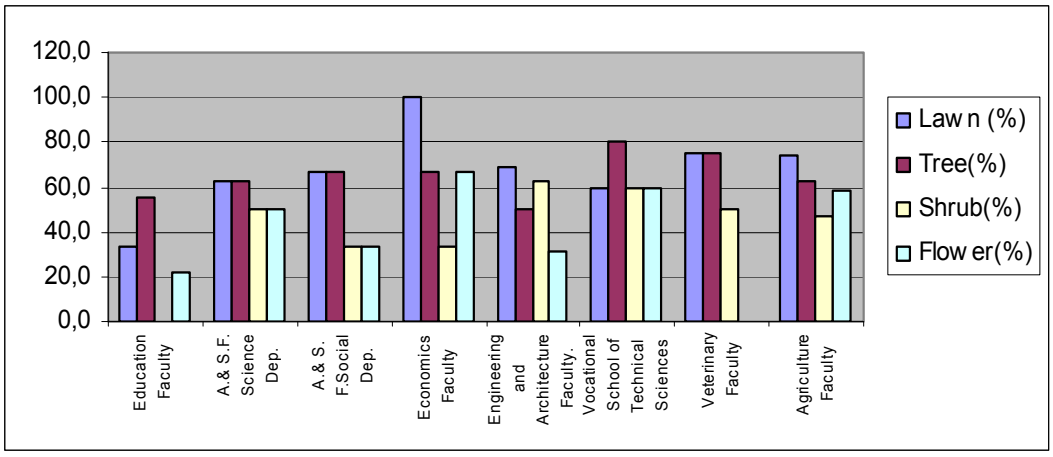

Figure 2. Rate of the Respondent Who Thought That Present Vegetation Is Sufficent

3.3 Expectations Regarding the Area Surrounding the Workplace

The desires of the staff working in various faculties concerning changes in the areas surrounding their workplaces are indicated in Table 3. Accordingly, the staff of the Social Departments of Arts and Science Faculty indicated that they would like a natural landscape of the area around their workplace. The preferences for well-manicured and natural landscapes are equal for the Veterinary Faculty. In other faculties, the staff indicated that they would like to see a well-manicured landscape of the area surrounding their workplace.

Table 3. Desires of Change in the Area Surrounding the Workplace

	Desire of well manicured Landscape(%)	***Desire of natural scnery (%)***	***Desire of forest (%)***	***Satisfied (%)***
Education Faculty	66.7	-	11.1	22.2
Arts and Science Faculty Science Departments	62.5	25	12.5	-
Arts and Science Faculty Social Departments	-	66.7	-	33.3
Economics Faculty	66.7	33.3	-	-
Engineering and Architecture Faculty.	68.8	25	-	6.2
Vocational School of Technical Sciences	60	20	-	20
Veterinary Faculty	44.4	44.4	-	11.2
Agriculture Faculty	68.4	15.8	10.5	5.3

The participants in all of the faculties indicated that they mostly need sitting places in open spaces. The only faculty that indicated a need for a carpark was the Engineering and Architecture Faculty. The only unit that indicated a desire for pedestrian lanes was the Vocational School of Technical Sciences. The survey results indicate that the pedestrian lanes between the buildings that form the unit are insufficient.

Parking lot, pedestrian lane and sitting place alternatives that were shown to participants are seen in Figure 3. The common preference of the staff working at the faculties is to have a carpark as indicated in picture 1. In general, the carpark images in which trees cast shadows are more commonly preferred. In the most preferred image, the ground of the carpark is also green. For the pedestrian lanes, the presence of trees on both sides of the lane was favoured. However, it was preferred that the ground was also hardscaped. The most preferred pedestrian lane is indicated in picture 2. The most preferredsitting

area (Picture 3) is vegetated, half shady and half sunny. In general, the areas with a hard landscape or the areas with no trees to cast shadows are preferred less. The shady sitting area between two buildings that has no trees is not preferred at all. 48% of the participants stated that they would like to join landscape activities.

Figure 3. Pictures That Showed to the Participants (The Most Preferred Sceneries: Parking Lot: 1, Pedestrian Lane: 2, Sitting Place: 3)

4. Discussion and Conclusions

As a result of the evaluation of the perceptions of the participants that work in different buildings within the campus, it is suggested that the staff are concerned about the landscape around the buildings at which they work and that they are conscious about the changes in and shortfalls of the landscape around the buildings.

All participants clearly assessed the vegetation groups surrounding their buildings and stated their ideas about the existence of green grass, trees and flowers. However, there were a few who indicated that they had no idea about the presence of shrubs. Although there are not many lawns or fields around the buildings on the campus, the participants consider the amount of lawn to be sufficient. The group of plants for which an increase is the most desired is the flowers.

The fact that sitting places were the type of use for which a shortage is felt the most in the area outside buildings is also important. This indicates that under optimum conditions the academic staffs have the desire to actively spend time outside of their workplaces. In the preferred sitting areas, grassy grounds with picnic tables are preferred over cafe-like places with hard floors. For pedestrian lanes, hard grounds with green vegetation on the sides are preferred. The need for a carpark was indicated for near the Engineering and Architecture Faculty where there is heavy pedestrian and vehicle traffic in the campus and a shortage of available parking places. Buildings and roads were not in the forefront of any of the most preferred carpark images.

The preference for well-manicured landscapes always ranks high in a way that also confirms the previous studies. The preference for naturally landscaped areas follows the preference for well manicured landscapes and, thus, ranks second. The results of other recent studies support this finding. According to Özgüner and Kendle (2006), there is an increasing interest towards having naturally landscaped areas in cities. Vogt and Marans (2004) have stated that the users prefer the areas between the houses in their neighbourhood to be empty and rural-looking. Ode (2009) has confirmed that the natural appearance of the elements used in landscaping affects user preferences. Understanding how people use and value the spatial environment is the key to planning site that fit human purposes (Lynch, 1971) and design must be a bridge between human needs and ecology (Papanek, 1995).

In this frame, the present study provides proof that although the most preferred user preference is well-manicured areas, naturally landscaped areas are also highly preferred. Therefore, it is necessary to assess and use the natural potential of the landscape in order to improve the use of naturally landscaped areas and to form more sustainable urban areas.

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