

## Evaluation Of Interior Plants As A Design Element In Shopping Malls In Terms Of Different Usage Type

Ozgur Yerli<sup>1</sup>, Sertac Kaya<sup>2</sup>

<sup>1</sup>(Department of Landscape Architecture, Duzce University, Turkey)

<sup>2</sup>(Department of Landscape Architecture, Duzce University, Turkey)

Corresponding author: Ozgur Yerli

---

**Abstract:** People need an inner landscape who go to shopping center to meet a need of social requirement and to relax psychologically. Interior plants are the basic materials of creating inner landscapes. Interior landscape design can be defined change existing space or reveals complementary and a holistic approach. Creating a successful indoor space is associated with an optimal degree of space aesthetic and space function. Usage types of indoor plants is important in this respect. The aim of this study is demonstrated to some plants that use as the design element indoor and whether or not their several usages show differences among each other of several usages. Importance of this study is stated that in this research there are some results regarding the usage of indoor plants to create more aesthetic, functional and more livable places. In this study, in the city of Ankara, Ankamall, Antares and Kentpark is indentified as area of study because of the first three terms of the size of leasable area. In three shopping malls, the survey implemented by using equal number pictures which have the most effective planting compositions. Thus, different usage types as solitary, group, solitary and at least one usage, group and at least one usage of indoor plants that used in shopping malls was asked how evaluate to the users. The data was statistically evaluated and consequently significant differences were observed between usage types of indoor plants (solitary, group, solitary and at least one usage, group and at least one usage) among each other different usage types.

**Keywords** - Shopping center, indoor plant, solitary, group, usage.

---

Date of Submission: 05-10-2018

Date of acceptance: 17-10-2018

---

### I. INTRODUCTION

Place is the piece of space which separates the man from his environment, a limited dimension which makes him feel safe and act freely inside, and its boundaries can be determined by the observers [1]. The place is the perspective of the environment that perceived as life by people and culture. Things that produce the place are place limiters. Sometimes it is the surface, sky, a tree, bush, trail and sometimes it is a wall, ceiling, beam sometimes the combinations of these help the identification of the place by limiting the environment. The place should have features that inform the users about its form, architecture, lighting [2].

The economical and social conversion process has also changed the term of place. Especially the massive changes in consumption habits, intensity of urban life and scarcity of free time have led to the change of shopping places. When these changes in the consumption habits are combined with those in the social structure and relationships, it led to the change of the shopping concept in the aspects of place, time and meaning. Forming the today's shopping malls [3].

The shopping malls are not only considered as trade centers but also community centers. In this sense, places where users can spend their free time and improve social relationships can be designed in shopping malls. With corridors which symbolize streets and squares, place design supporting the recreational activities and social relationships, these areas are supported [4].

Especially in metropolitan cities, the number of shopping malls has increased and they are more than just shopping centers. These areas allowed people who live in the cities to spend their free time by creating recreational and public places.

Both public and privately owned buildings are designed according to basic landscaping standards. Landscaping elements are used as complementary of interior spaces. The design and selection of landscape elements have important role in a successful interior design. In addition, a successful interior design has positive effects on human psychology. Enabling the adjacencies to rest and relax, including the nature that urban people cannot find, presenting an environment where people would want to be in thus enabling the structure to be attractive. For this reason, usage of basic landscaping standards is important in social places. The basic landscaping standards which help interior design succeed are used intensively in malls. Thus, a big positive effect on customers' and visitors' satisfaction and activity is being created [9]. According to Özsoy (2010), good

design, comfort, and places with entertainment and socialization opportunities improve the quality of shopping malls and their selection by users. In addition to these climate control and security are also important factors [5].

People who visit malls which contain recreational activities with the purpose of creating closed urban places, need landscapes design for psychological relaxation and to fulfill social needs. To create a natural landscape design the fundamental materials are interior plants. Since the beginning of the environmental conservation and green lives movement, the popularity of interior plants has been increasing rapidly [6]. According to Okurlar (2012) plants, water and artworks were frequently used in old times in atriums just like today [7].

Interior landscape design can be identified as a design change or a complementary wholistic approach. To have a successful enclosed place, a well-built landscape is needed. Interior landscape design is used in creating physical, functional and psychological effects [9]. The process and approaches in designing indoors are different than the outdoors. The physical and functional usage of interior landscapes can mostly be sorted in entrance definition, boundary definition, orientation, barriers (blocking), curtaining, partitioning, shrinking and making dominant (emphasizing) The aesthetical and psychological usage of landscapes provide comfort and security. Landscape has a relaxing effect on customers. Shapes effect people's moods. Usage of different shapes in landscape design can help making an object or place dominant [9].

Exact determination of the plantation concept is the first rule in landscape design to have a solid foundation. A balance and harmony should be created according to the basic design standards between the composition of the plants with other plants, plants place and receptacle. As stated in factors that determine the design and design process chapters, plants that are establishing the purpose, style, place's functionality and features are used as solitary or in groups [8]. Toksözlü (2011) observes water objects in the mall, different shadowing elements in some areas and different designs and structural editing in certain areas in his study on Forum Bornova Mall. With these, it can be seen that the monotony in the mall is exterminated and symmetry is avoided. The plant design of the Forum is shaped by the purpose of eliminating the monotony with the usage of different colored plants. Plants that are used solitarily in some places are also used in groups in some other places [9].

Argan at al. (2012) have determined the approaches of malls in Eskisehir and Ankara in the scope of recreational activities. According to the findings of the study, the malls of Eskisehir and Ankara have recreational activities and places that can be changed on the essentials of stability/permanency and temporality but interior plants and the places they form with recreational possibilities are not used [10].

Bozkurt and Ulus (2014) Have examined the varieties, usages and designs of interior plants that are used as recreational elements in today's malls and emphasized that the plants in malls should be organized according to design elements such as plans ecological needs, balance, contrast, color, harmony [4].

Some trees may have very interesting features in their form, texture and color. The types that have such features are called solitary types. When used singly, it is easier to detect the solitary trees' features. These types lose their impact when used in groups. Usage of a single plant is also called solitary use [11].

In indoor places, the same effect that is wanted to be created by a single plant can be created by group of plants used together. The grouping design of interiors can be made in different ways. In addition to that, different group designs in receptacles, different group designs with different plants in several receptacles, group design in a certain corner of the place, group design in different corners of the place and design with different types of the same plant can be examples of this [12].

The purpose of this study is to reveal that the usage types of plant materials "solitary, solitary and another usage, group, grouped and another usage" and the applications that provide them to be used different usages in terms of users' expectations vary or not. The results that will be revealed at the end of the study will help making the right design choices to achieve the highest efficiency in place design and utilization.

The importance of the study will help mall plants to be more functional, aesthetic, sustainable, organized through the means of being solitary, grouped and differences to be interpreted with at least one other usage with these features. Thus, contribute to the creation of livable places. While there are lots of studies on the exterior plant designs, studies on interiors and malls are very few in numbers. This study also gains importance in the means of supporting literature because of this feature.

The hypotheses laid out with this study are as follows:

- 1) There is a relation among different usage types of interior plants.
- 2) Rather than use the plants only solitary or only grouped, it is more efficient to use them with any other usage.

## **II. MATERIALS AND METHODS**

Ankamall, Antares and Kentpark Shopping Centers, which take place in top three in terms of rentable area size in Ankara province, have been determined as study areas in this research. Rentable area size is important for Malls. More rentable areas means more commercial places, that is more customers, more users.

Rentable area size is 108.000 m<sup>2</sup> for Ankamall [13], 85.000 m<sup>2</sup> for Antares Mall [14], and 80.000 m<sup>2</sup> for Kentpark Mall [15].



**Fig. 1** a. Ankamall (group+usage) b. Kentpark Mall (solitary) c. Antares Mall (solitary+usage)

In three shopping centers, equal number of photos have been taken in places where there is plant usage as solitary, solitary and at least one usage by it, group, group and at least one usage by it. Photos that had been taken, were eliminated using survey questions according to relevance, well expressing the area, color, clearness, understandability criteria by two expert landscape architects and 18 photos were chosen. Chosen photos were shown by projection to 150 students who study in Duzce University Faculty of Forestry Landscape Architecture Department and who have been successful in “Basic Design” course, in addition to photos, 5 point likert scale survey that evaluate “solitary, solitary+usage, group, group+usage” of indoor plants in shopping centers was carried out on students. It is desired to reach the results of the study by depending on basic design principles and basic design elements that consist the design discipline integrity. Real users of the place composes from different ages, education and social environments. According to this, it can't be expected from the place users to evaluate by knowing the basic design principles and elements and place organization. This situation also raises concerns that it may distort the aim of the survey in the direction of different expectations and needs. Similarly, Tunalı (1989) supported this situation [16]. According to Tunalı, variability of the defining elements in aesthetic values is seen not only in different cultures but also in the same cultures. The biggest reason for this difference is education. Because, education, especially aesthetic education which is thought to be one of the most important definers in appreciation, is a prerequisite in understanding the art and evaluating it. Thus, survey is applied on people who studied design education, not on the real users of the place. In addition, some researchers have found in their studies that experience affect the visual quality evaluation [17], [18], [19], [20]. In this context, to minimize the evaluation effects in these surveys, instead of Ankara, a group who lives in Düzce was chosen, thus the number of people who saw and knew the place earlier is also minimized and it is aimed that there are no bias in survey results. The reason why the survey takes landscape architecture discipline into consideration is that landscape architecture, whose basis is design, uses plants as live elements in their designs, and thus both in undergraduate and master study programs; plant identification and evaluation, plant design technique, plant sociology lectures are given. In the survey, it is asked the students how they evaluate the solitary, solitary+usage, group and group+usage in indoors in terms of their appreciation. In terms of the features that are mentioned in scoring, 1 point is not effective at all, 2 point is ineffective, 3 point is somehow effective, 4 point is effective and 5 point is evaluated to be very effective. From this point, it has been researched whether usage of plant material as solitary, group or in both cases show differences in shopping centers, whether there is a relation between usages of different types in Malls and the relation in terms of scores that four different usage types got, and in terms of which elements and in which shopping centers the detected differences occur have been scrutinized. These differences have been researched with the aim of ascertaining usage areas to be created by plant usage in indoor places. For this purpose, One Way ANOVA analysis has been used to explain the relations between usage types and shopping centers, to reveal if there is a relation in terms of different usage types in the Malls and to calculate the relations according to four different usage type scores, and Tukey test has been carried out to explain the resulting differences. Significance levels lower than 0,05 resulting from statistical analysis have been evaluated as meaningful.

### III. RESULTS

For the proof of the hypothesis, applied survey results have been statistically evaluated. One-way analysis of variance has been carried out to present the average point of applied survey number and evaluation

criteria on the basis of Malls. Relations between Malls in terms of data which is related to this and the types of usage was investigated (Table 1). According to this, 540 data have been evaluated in total. If we examine the averages of Malls for each usage type, it is seen that in solitary usage type; Antares Mall has the highest average point, and Ankamall has the lowest average point. According to this, in terms of solitary, solitary and at least one usage, group, group and at least one usage, differences between Malls are meaningful and can be explained statistically.

Where there is solitary plant and at least one usage by it, highest average is seen again in Antares Mall, and the lowest average is seen in Kentpark Mall. When plants are used as groups, highest average is seen in Ankamall, lowest average is seen in Kentpark Mall. Where there is plants as a group and at least one usage by it, highest average is seen in Ankamall, and the lowest average is seen in Kentpark Mall.

**Table 1.** Relations between Malls in terms of Defining data and usage types.

|   |          | N   | Mean   | Std. Deviation | Std. Error |
|---|----------|-----|--------|----------------|------------|
| Solitary<br>F: 20,082<br>Sig: 0,000           | Antares  | 180 | 3,0167 | 1,10091        | ,08206     |
|   | Ankamall | 180 | 2,3611 | 1,01807        | ,07588     |
|   | Kentpark | 180 | 2,9444 | 1,10722        | ,08253     |
|   | Total    | 540 | 2,7741 | 1,11362        | ,04792     |
| Solitary and Usage<br>F: 25,162<br>Sig: 0,000 | Antares  | 180 | 3,5056 | 1,09594        | ,08169     |
|   | Ankamall | 180 | 3,1056 | 1,22131        | ,09103     |
|   | Kentpark | 180 | 2,5778 | 1,39815        | ,10421     |
|   | Total    | 540 | 3,0630 | 1,29925        | ,05591     |
| Group<br>F: 7,981<br>Sig: 0,000               | Antares  | 180 | 3,2667 | 1,13157        | ,08434     |
|   | Ankamall | 180 | 3,5444 | 1,13020        | ,08424     |
|   | Kentpark | 180 | 3,0889 | 1,00440        | ,07486     |
|   | Total    | 540 | 3,3000 | 1,10438        | ,04753     |
| Group and Usage<br>F: 3,910<br>Sig: 0,021     | Antares  | 180 | 3,5667 | 1,11916        | ,08342     |
|   | Ankamall | 180 | 3,7056 | 1,10204        | ,08214     |
|   | Kentpark | 180 | 3,3444 | 1,45442        | ,10841     |
|   | Total    | 540 | 3,5389 | 1,24255        | ,05347     |

1. not effective at all 2. uneffective 3. somehow effective 4. effective 5. very effective

One Way ANOVA analysis has been used to reveal the relations between solitary, solitary and at least one usage, group, group and at least one usage implementations and the Malls, and Tukey test has been carried out to explain the meaningful differences (Table 2). In order to make a more detailed explanation about differences, comparison has been made between Malls on each criteria.

**Table 2.** Multiple comparisons.

| Dependent variables | (I) Mall | (J) Mall | Mean Diff.(I-J) | Std. Error | Sig. |
|---------------------|----------|----------|-----------------|------------|------|
| Solitary            | Antares  | Ankamall | ,65556*         | ,11344     | ,000 |
|                     |          | Kentpark | ,07222          | ,11344     | ,800 |
|                     | Ankamall | Antares  | -,65556*        | ,11344     | ,000 |
|                     |          | Kentpark | -,58333*        | ,11344     | ,000 |
|                     | Kentpark | Antares  | -,07222         | ,11344     | ,800 |
|                     |          | Ankamall | ,58333*         | ,11344     | ,000 |
| Solitary and Usage  | Antares  | Ankamall | ,40000*         | ,13120     | ,007 |
|                     |          | Kentpark | ,92778*         | ,13120     | ,000 |
|                     | Ankamall | Antares  | -,40000*        | ,13120     | ,007 |
|                     |          | Kentpark | ,52778*         | ,13120     | ,000 |
|                     | Kentpark | Antares  | -,92778*        | ,13120     | ,000 |
|                     |          | Ankamall | -,52778*        | ,13120     | ,000 |
| Grup                | Antares  | Ankamall | -,27778*        | ,11493     | ,042 |
|                     |          | Kentpark | ,17778          | ,11493     | ,270 |
|                     | Ankamall | Antares  | ,27778*         | ,11493     | ,042 |
|                     |          | Kentpark | ,45556*         | ,11493     | ,000 |
|                     | Kentpark | Antares  | -,17778         | ,11493     | ,270 |
|                     |          | Ankamall | -,45556*        | ,11493     | ,000 |
| Grup and Usage      | Antares  | Ankamall | -,13889         | ,13028     | ,536 |
|                     |          | Kentpark | ,22222          | ,13028     | ,204 |
|                     | Ankamall | Antares  | ,13889          | ,13028     | ,536 |
|                     |          | Kentpark | ,36111*         | ,13028     | ,016 |
|                     | Kentpark | Antares  | -,22222         | ,13028     | ,204 |
|                     |          | Ankamall | -,36111*        | ,13028     | ,016 |

\*p< 0,05

When the data is examined in terms of solitary plant usage, it is seen that only Ankamall has a meaningful relation between the other Malls and it can be explained statistically. Accordingly, the maximum

difference is between Ankamall and Antares Mall and it is negatively. Mean difference between Ankamall and Kentpark Mall is negatively. That is, in terms of solitary plant usage, Antares is the strongest, Ankamall is the weakest Mall. Difference between Antares Mall and Kentpark Mall hasn't been found meaningful, and couldn't be explained statistically.

When the data is examined in terms of solitary plant and at least one usage, it is seen that all Malls have meaningful differences when compared one by one and it can be explained statistically. Accordingly, it is observed that the maximum difference is between Antares Mall and Kentpark Mall, and the minimum difference is between Antares Mall and Ankamall. In both cases, differences are in favor of Antares Mall, and it is in positive direction. It is seen that the difference between Ankamall and Kentpark Mall is in favor of Ankamall, and it is in positive direction. Accordingly, in terms of solitary plant and at least one usage by it, the strongest Malls are respectively; Antares, Ankamall and Kentpark.

When it is examined in terms of usage of plants as groups, it seen that only Ankamall has a meaningful relation between the other Malls and it can be explained statistically. Accordingly, the maximum difference is between Ankamall and Kentpark Mall, and it is in positive direction. Average difference between Ankamall and Antares Mall is in positive direction. In terms of usage of new plants, Ankamall is the strongest, Kentpark is the weakest Mall. Difference between Antares Mall and Kentpark Mall hasn't been found meaningful, and couldn't be explained statistically.

It is seen that only Ankamall and Kentpark Mall has meaningful relations when it is examined in terms of plants as groups and plus at least one usage, and it can be explained statistically. Meaningful difference is in favor of Ankamall and in positive direction. No meaningful difference is found between Antares Mall and any other Malls and it couldn't be explained statistically.

After this step the meaning between groups according to their points in different usages and the relation between each usage with the other have been examined. According to this groups have relations with each other in terms of different usages and it can be explained statistically (Tables 3-4).

**Table 3.** Relations between the groups.

|                | Sum. of Squares | df   | Mean square | f      | Sig. |
|----------------|-----------------|------|-------------|--------|------|
| Between Groups | 189,130         | 3    | 63,043      | 60,655 | ,000 |
| Within Groups  | 2240,907        | 2156 | 1,039       |        |      |
| Total          | 2430,037        | 2159 |             |        |      |

Examining the differences between indoor plant design implementations has importance in terms of revealing the most liked usage preferences.

**Table 4.** Relations between usages.

| (I) USAGE      | (J) USAGE      | Mean Dif. (I-J) | Std. Error | Sig. |
|----------------|----------------|-----------------|------------|------|
| Solitary       | Solitary+Usage | -,43148*        | ,06204     | ,000 |
|                | Group          | -,34444*        | ,06204     | ,000 |
|                | Group+Usage    | -,83148*        | ,06204     | ,000 |
| Solitary+Usage | Solitary       | ,43148*         | ,06204     | ,000 |
|                | Group          | ,08704          | ,06204     | ,498 |
|                | Group+Usage    | -,40000*        | ,06204     | ,000 |
| Group          | Solitary       | ,34444*         | ,06204     | ,000 |
|                | Solitary+Usage | -,08704         | ,06204     | ,498 |
|                | Group+Usage    | -,48704*        | ,06204     | ,000 |
| Group+Usage    | Solitary       | ,83148*         | ,06204     | ,000 |
|                | Solitary+Usage | ,40000*         | ,06204     | ,000 |
|                | Group          | ,48704*         | ,06204     | ,000 |

\*p< 0,05

According to analysis, solitary plant usage has a relation with the other types usages, however this relation is in negative direction, that is, solitary plant usage has received less appreciation than the other types of usages. Maximum appreciation is seen in a situation where there are plants as group and plus at least one usage. Group+usage situation has a relation with the other usage types. Only solitary+usage situation has no relation with the group plant usage, and it couldn't be explained statistically (Table 4).

#### IV. DISCUSSION AND CONCLUSIONS

As a result of this study, it is concluded that there are differences in appreciations of usage types of plant materials that take place in Malls and in addition to these applications that provide different usages. When it is examined in terms of different usage types and average points, it is seen that solitary usage has at least an average point, and group+usage has the highest average point. Which means, using plants as groups and in addition at least one usage is more expected than the other situations. The reason for this result is foreseen to be

caused by the users who load more than one function to a place and their desire to have more than one usages at once. As a result, places will become more livable in terms of design. Because there is no doubt that, quality of the place is related to the function that is given to it. An area, enriched with the usage of plant materials, will become more livable with the support of usages that provide different recreational alternatives such as water elements, resting and watching. As a result, it will be in a longer contact with the user, it will have features that are more lived and that makes you live, thus it will have the form of place.

Baturlar (2011) has set forth in his research that one should pay attention to one type plant usage in the design as well as to the group planting [14]. According to the study, it should be provided that smaller plants should be placed under large plants and; emanative and dangling plants should be used at the very bottom. As justification for this, it is foreseen that using plants that has different colors, lines, textures, shape and sizes instead of a one-type plant usage abolish monotony, provide usage of design elements such as harmony, contrast and hierarchy, and enable creating places that are visually aesthetic, and that have functionally different usage effects. In the outputs of this research, related to the results Baturlar (2011) has found, it is found that among different types of usages, the most preferred option is the group plant+usage implementation [14]. Similarly, Frederick (2009) depended the success of a place design to the harmony of the elements rather than the elements themselves in the composition, and emphasized the importance of the dialogue between the elements that create the composition [21].

Bozkurt and Ulus (2014), similarly to this research, confirmed that recreational areas in the shopping centers and the plant organization used in these areas link to structural integrity in the study they carried out [4]. Plants that have been used in these areas are generally solitary or in groups and they have been used to create resting areas for people.

Another result of this study is that plants that were used in the place as “solitary, solitary+at least one usage, group, group+at least one usage” show differences according to Malls. According to statistical analysis results, where there is solitary plant usage in the Malls that share the top 3 in terms of rentable areas in Ankara, highest average point is seen in Antares Mall, and the lowest average point is seen in Ankamall. Where there is solitary+at least one usage implementation, highest average point is seen again in Antares Mall, and the lowest average point is seen in Kentpark Mall. Where there is plants as group and group+usage implementation, highest average point is seen in Ankamall, and the lowest average point is seen Kentpark Mall in both implementation types. In this case, while Antares and Ankamall has the highest average points in two different implementations, Kentpark Mall has the lowest average point in three different implementation types. In emergence of this result, it is foreseen to be effective to use plants more as groups in Ankamall’s plant design, and to use plants more as solitary in Antares Mall’s plant design. This situation that is observed during the survey gained value with the resulting of the surveys in this direction.

According to the surveys and the resulting statistical analyses, it is concluded that,

\* There is a relation among different usage types of interior plants,

\* Rather than use the plants only solitary or only grouped, it is more efficient to use them with any other usage.

According to these results, in place design, users appreciation has shown differences between solitary, group, solitary +at least one usage, group +at least one usage of plants. It matters to define plant usage type to express the place successfully by using design principles and elements that are the key elements in design discipline implementation. While making this preference, facilities that the place provide and the current status should be evaluated carefully. Especially ecological factors should be considered. Among these factors, light is one of the most important factors in the selection and placement of plants used indoors. However, it is difficult to measure the light factor indoors and make a meaningful conclusion from these measurements [22]. Especially the shopping malls are generally artificial lighting because of the fact that they are completely closed spaces. This situation leads to the need for more light in order to sustain their healthy development in terms of plants [23]. According to Bozkurt and Ulus (2014), illumination is considered as an important design element in the recreation areas within shopping malls. Artificial lighting is needed in order to sustain the development of indoor plants because natural lighting is insufficient in interior spaces where there is no roof opening.

Landscaping has a quite important role in defining the identity of a shopping centre. While a bad landscape could damage the image of a shopping centre, a good and impressive landscape could be the reason why a customer visits many times. Among the massive surfaces such as steel structures, glass and concrete created by modern technology, plants living and reflecting nature are important in the organization of interior space. With an arrangement made with indoor plants, the spaces have a more attractive and different atmosphere by taking advantage of the color, smell, form or size characteristics of the plant. Depending on the function of the space, the plants provide additives to the space due to their features such as hiding the unwanted objects, softening the sharp lines. Now in many shopping centers, great attention has been paid to landscaping in indoors, too and it is budgeted. Various planting arrangements are used to attract the customer and to create a nice environment in both resting and food areas [24].

Considering the spatial groupings in the shopping centers, the space is generally positioned so as not to integrate with recreational areas. At this stage, it is very important to construct recreational spaces in the distribution of the whole structure. Plants are the main elements that will make someone feel the emptiness-fullness relation in indoor places. Places will gain more functional features by addressing the indoor plants as whole from the beginning of design fiction till the end.

As a result, plant material usage has a great role in making places more useful in terms of functions and aesthetics. This case embodies the similar concerns for both outdoor and indoor places. As a result of using plants, spaces come closer to human scale, and they create various alternatives with solitary, group and other different usages in company with them

## REFERENCES

- [1]. Kaya, A., Demir, Z., Ayengin, N. (2014). "Spatial Identification Transform of Konuralp Town", *Düzce University Forestry Journal*, 10(1), 72-83.
- [2]. Altınçekiç, S. (1997). "Place Organization in Urban Areas and Studying Beyazit Area", *Istanbul University Faculty of Forestry Journal*, 47(2): 202-228.
- [3]. Bozkurt, S. G. and Ulus, A. (2014). "Studying Interior Plant Organization in Shopping Centers which are used with Recreational Aim and Parameter Usages in Istanbul (Europe) Example", *Journal of the Faculty of Forestry Istanbul University*, 64(2): 24-40.
- [4]. Aktaş, G. G. (2011). "Recreational Interior Organization Suggestions in Modern Shopping", *Anadolu University Art and Design Journal*, 1(1): 1-13.
- [5]. Karadağ, A. A. (2013). "Effects of shopping malls on using urban parks: The case of Ankara", *Journal of Food, Agriculture and Environment*, 11(1): 765-770.
- [6]. Pakvaran, A. (2010). "Uses of the Basic Landscaping Elements in Shopping Malls, Case Study: Istanbul and Dubai", Unpublished Master's Thesis, Eastern Mediterranean University, Gazimağusa, Turkish Republic of Northern Cyprus.
- [7]. Okurlar, N. (2012). "Designing Common Usage Areas in Shopping Centers and Antakya Example", Unpublished Master's Thesis, Department of Landscape Architecture, Mustafa Kemal University, Antakya, Turkey.
- [8]. Khabbazi, P. A. (2009). "A Study on Detecting Usage Parameters of Indoor Plants which are used with Decorative Purposes in Shopping Centers", Unpublished Master's Thesis, Department of Handicrafts, Gazi University, Ankara, Turkey.
- [9]. Tozsözlü, Z. (2011). "Studying Turkey Conditions in terms of Landscape Planning and Creating Design Criteria of Open Area Shopping Centers and Izmir Forum Bornova Example", Unpublished Master's Thesis, Department of Landscape Architecture, Ege University, Izmir, Turkey.
- [10]. Argan, M., May, F., Yetim, G., Ertez, K. and Lakeç, Y. (2012). "Shopping Centers as Recreation Chapels", I. Recreation Researches Congress, Kemer, Turkey, 12-14 April, 73-87.
- [11]. Anonymous (2014a). <http://hobibahcemiz.net/viewtopic.php?f=45&t=8827> (accessed 24 August 2014).
- [12]. Baturlar, F. (2011). "Studying Interior Plant Usage in terms on Aesthetic and Functional", Unpublished Master's Thesis, Department of Landscape Architecture, Mustafa Kemal University, Antakya, Turkey.
- [13]. Anonymous (2014b). <http://www.ankamall.com.tr/kurumsal> (accessed 01 October 2014).
- [14]. Anonymous (2014c). <http://www.antaresavm.com.tr/kurumsal.asp> (accessed 01 October 2014).
- [15]. Anonymous (2014d). <http://www.kentpark.com.tr/Kurumsal/KentparkAVM> (accessed 01 October 2014).
- [16]. Tunalı, İ. (1989). *Aesthetics*, Remzi Bookstore. 3. Printing, Istanbul.
- [17]. Çırak, M. M. (2008). "Visual Effect of Shape in Architecture, Designer's Goal and a Research on User", Unpublished Master's Thesis, Selçuk University, Konya, Turkey.
- [18]. Çakçı, I. (2007). "A Method Research on Visual Landscape Evaluation in Landscape Planning", Unpublished Doctoral Thesis, Ankara University, Ankara, Turkey.
- [19]. Nasar, J. L. (1992). "Visual Preferences of Urban Street Scenes: A Cross Cultural Comparison Between Japan and The United States. *Environmental Aesthetics: Theory, Research and Applications*, Cambridge University Press, New York.
- [20]. Lang, J. (1897). *Creating Architectural Theory, The Role of the Behavioral Sciences in Environmental Design*, Van Nostrand, Reinhold, New York.
- [21]. Frederick, M. (2009). *101 Things I Learned in Architecture School*, YEM Publications.
- [22]. Logan, K.T. and Peterson, E.B. (1964). *A Method of Measuring and Describing Light Patterns Beneath the Forest Canopy*. Department of Forestry, Forest Research Branch, Publication No: 1073.
- [23]. Ürgenç, S. (1992). *Fidanlık ve Yetiştirme Tekniği; Ağaç ve Süs Bitkileri*. İstanbul Üniversitesi Yayını, Yayın no: 3676/418, İstanbul.
- [24]. Çakar, C. (2010). "Design Principles in Shopping Centers and Evaluation of These Principles in terms of Consumer Expectations", Unpublished Master's Thesis, Department of Real Estate Development, Istanbul Technical University, Istanbul, Turkey.

Ozgur Yerli "Evaluation Of Interior Plants As A Design Element In Shopping Malls In Terms Of Different Usage Type "International Journal of Engineering Science Invention (IJESI), vol. 07, no. 10, 2018, pp 62-68